



LITTLETON COMMON

REVITALIZATION ROAD MAP

JANUARY 2019

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EXECUTIVE SUMMARY

In 2017, the Town of Littleton finalized a comprehensive Master Plan Update to develop a shared vision for the Town’s future. Focusing on Littleton’s current and future trends and needs, the Master Plan particularly emphasized the desire to redevelop the area around Littleton Common (the “Common”) into a more traditional New England village center.

In pursuit of this effort, in 2018 a separate and distinct planning project emerged to specifically address revitalization of the Common area. Led by the Master Plan Implementation Committee (MPIC), the purpose of this revitalization planning was to:

1. Specify and build consensus around residents’ concerns, priorities, and goals for the Common;
2. Analyze existing zoning, infrastructure, and market conditions;
3. Assess shortcomings and challenges to redevelopment;
4. Identify feasible regulatory, design, and economic opportunities; and
5. Propose action items to affect positive change.

The Littleton Common Revitalization Plan (the “Plan”) represents the culmination of this planning process, which was centered around the creation of four redevelopment scenarios and an economic analysis of the current market potential and impacts of development.

The scenarios and analysis were informed by a thorough review of existing conditions within the area and a robust community engagement process. During this engagement, the public was asked to prioritize potential

design, infrastructure, and economic opportunities to reach a shared, achievable vision for the Common. The Plan was created to serve as a road map for the Town and stakeholders to illustratively guide progress toward shared goals for Common revitalization.

Results of the planning scenario exercise solidified the community’s desire to create a walkable, sustainable, and vibrant Common. Numerous residents, property owners, community and advocacy representatives, and municipal officials voiced their opinions regarding the scale and density of development. In the end, the community chose a moderate growth scenario that focuses on:

- Promoting mixed-use buildings;
- Diversifying Littleton’s housing stock;
- Protecting open space and natural resources; and
- Creating a vital village center that respects the Town history.

Given the challenges of private land ownership, integrating new development into the existing Town character, and reaching consensus on desired outcomes, the Plan (herein as the “Road Map”) provides Littleton stakeholders with a menu of actions to enact change and pursue revitalization.

It was clear from the start that moving from planning to action was a principal objective for the MPIC, and therefore the Road Map is designed to lay out a course of action for the Town and stakeholders (property owners, developers, and residents) to ensure that the vision for the Common is fulfilled; a vibrant, walkable, sustainable Common.

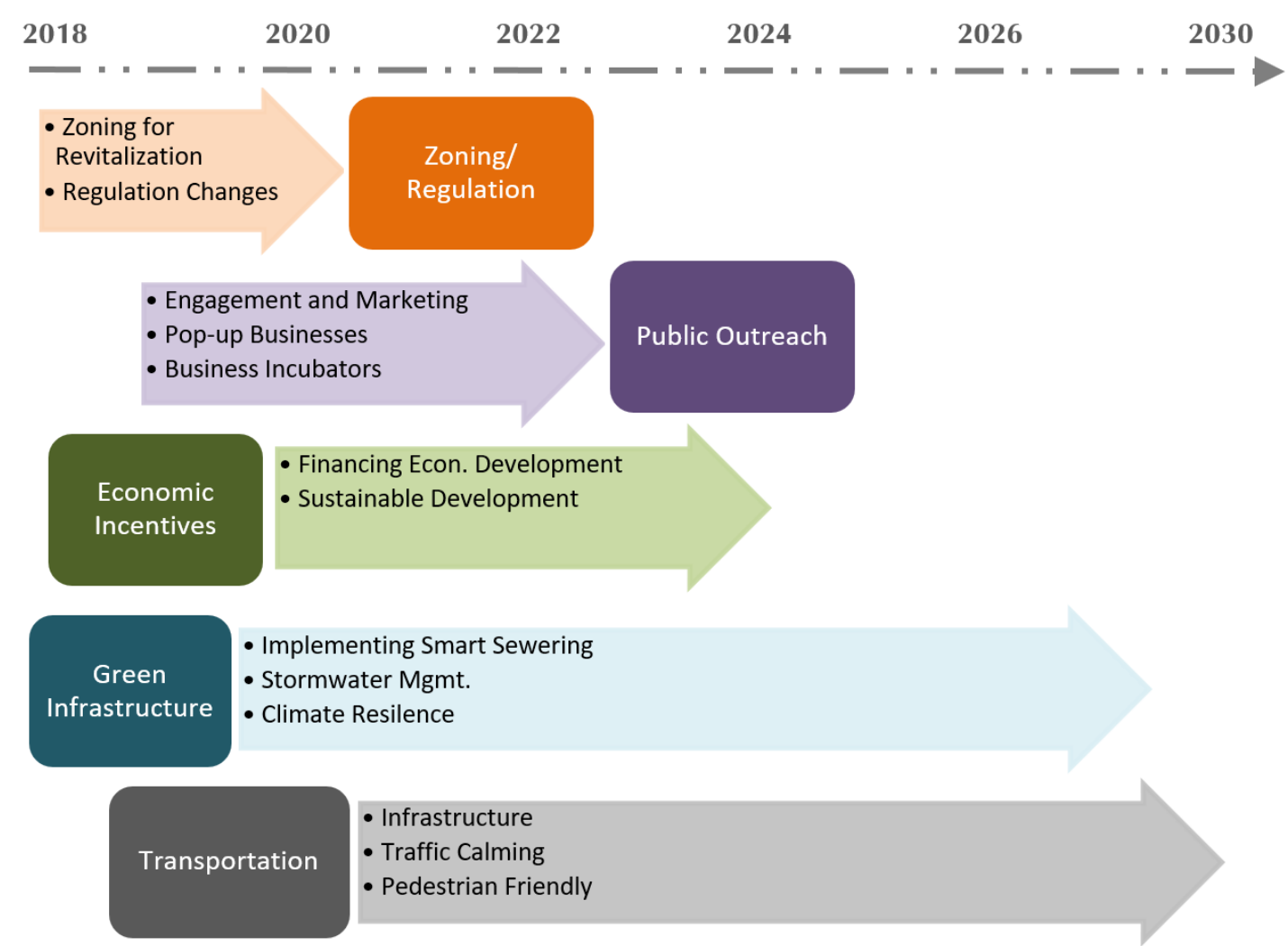
Strategies included herein aim to strike a balance between protecting the unique character of the Town’s rich history and agricultural status, while creating

opportunities for expanding public uses and economic growth.

There are five primary categories of actions to implement this Road Map, as listed below with key measures. These actions will be best achieved in a collaborative effort between residents, municipal officials, and private / non-profit stakeholders. As shown in the info-graphic below, recommended actions can flow simultaneously, as each category will have shorter or longer timeframes associated with their likely start dates, which depend upon available resources, capacity and state agency requirements.

These recommendations are listed in the following table with suggested responsibly municipal leads, potential partners to assist with implementation, and a sense of timing (short-, mid-, and long-term).

A detailed explanation of each proposed action is provided in Section 7 of the Road Map: “Moving from Planning to Action.” Additionally, an Action Matrix is included at the end of the Road Map (Appendix A) that provides greater specificity with respect to recommended redevelopment measures, which is designed to serve as a stand-alone reference document for the town to track progress.



ACTIONS	RESPONSIBLE ENTITY	POTENTIAL PARTNERS	TERM
TRANSPORTATION			
Infrastructure Improvements / Traffic Calming			
Monitor traffic volumes and crash occurrences	DPW	MPO, Volpe Center	Short-term
Create working group re: new technologies & pilot projects	DPW	TAC, MPO, Volpe Center	Short-term
Conduct Traffic study	DPW	MPO/MAPC	Short-term
Establish electric vehicle incentive program/ charging stations	DPW/Electric Light Department	MAPC	Mid-term
Develop student-based transportation projects	TAC	School Cmte., Minuteman Community College	Mid-term
Discuss transportation network changes with Mass DOT	DPW, Mass DOT	MPO/MAPC	Long-term
Complete connection services to MBTA Station and key locations w/in the Common	DPW	CrossTown, MTA	Long-term
Pedestrian-Friendly Alternatives			
Secure Funding	Selectmen		Short-term
New crosswalks	Selectmen	MPO, Mass DOT	Long-term
Bike Lanes	Selectmen	MPO, Mass DOT	Long-term
GREEN INFRASTRUCTURE			
Climate Resilience and Stormwater Management			
Prioritize green infrastructure techniques in public and private projects that reduce water volumes and flood potential	DPW, Planning Board	MAPC	Short-term
Implement water collection and reuse mandates	DPW, Planning Board	MAPC	Short-term
Consider implementing a drainage fee to pay for increased costs associated with MS4 compliance	DPW, Planning Board	MAPC	Mid-term
Implement the Smart Sewering Program			
Market the capabilities and benefits of the CWERC to property owners and development community	Sewer Committee	MPIC	Short-term
Revise Road Map and Matrix to include future documentation relating the smart sewer system	Sewer Committee	MPIC	Long-term
ECONOMIC INCENTIVES			
Sustainable, Environmentally-Friendly Development			
Create and adopt density bonuses	Planning Board		Short-term
Establish streamlined permitting	Planning Board, Selectmen		Short-term
Create subsidies and grants for use of green infrastructure	Planning Board, Selectmen	MassDOT, Con. Com.	Mid-term

ACTIONS	RESPONSIBLE ENTITY	POTENTIAL PARTNERS	TERM
Create awards and recognition programs	Planning Board	MassDOT, Con. Com.	Mid-term
Financing and Economic Development			
Participate in the MA Econ. Development (tax) Incentive Program	Selectmen	EDC	Mid-term
Establish mechanism for public investments	Selectmen		Long-term
Establish municipal-sponsored revolving loan funding program	Selectmen		Long-term
ZONING AND REGULATION			
Zoning for Revitalization			
Create Form-Based Code (Regulations and Plan)	MPIC		Short-term
Regulation Changes			
Create/Update Low Impact Development/ Stormwater Regulations	DPW		Short-term
Change Site Plan Rules	DPW		Short-term
Revise Wetlands Regulations	Conservation Commission		Mid-term
Expand upon the current market and economic impacts analysis to understand real estate marketing potential	Selectmen, Planning Board		Short-term
Secure Project Funding	MPIC, Selectmen	Finance Committee	Short-term
Issue RFP, Hire Contractor	Planning Board, MPIC		Mid-term
Complete Analysis	Planning Board, MPIC		Mid-term
Integrate w/Revitalization Plan	Planning Board, MPIC		Mid-term
PUBLIC OUTREACH			
Engagement and Marketing			
Ongoing (seasonal) public programming	Parks & Rec.		Short-term
Develop project noticing policies	Planning Board	Town Clerk, Counsel	Short-term
Establish new community meeting requirements prior to project proposals	Planning Board	Town Clerk, Counsel	Short-term
Ensure that development plans address the needs of all populations	Planning Board	Affordable Housing Trust	Short- to mid-term
Business Incubators			
Assist start-up businesses	EDC	Littleton Business Assoc.	
Subsidize and/or facilitate co-working spaces	EDC	Private investors	
Pop-up and Temporary Businesses			
Event Planning	MPIC	Parks & Rec.	Short-term
Establish temporary art displays	MPIC	Parks & Rec.	Short-term
Establish pop-up businesses	MPIC	Littleton Business Assoc.	Mid-term

PLACEMAKING

Placemaking was a central concept in creating the Littleton Common Revitalization Plan (the “Plan”). Placemaking entails fostering a strong social and emotional connection between a specific place and the people who use it. Currently, Littleton Common (the “Common”) lacks a specific identity; it is not a destination in itself that allows residents and visitors to celebrate the positive and unique characteristics of the Town of Littleton.

Community engagement surrounding the Plan development was designed to convene stakeholders who would remain active in the community-based planning processes and allow them to reimagine and reinvent the Common as a physical representation of the things they love about Littleton. With insights from the 2017 Town of Littleton Master Planning process, the result of this placemaking exercise was the origination of a collective list of community assets and interests, including:

- Preservation and enhancement of areas of natural beauty,
- Respect for the Town’s rural, agricultural, and historic character,
- Locations for cultural and community activities,
- Transportation improvements that prioritize pedestrians and bicyclists over automobiles,
- Sites for permanent passive and recreational uses, and
- Unique and vibrant local businesses that offer a variety of services.

These priorities were the guiding principles in creating and refining a set of four planning scenarios for revitalization of the Common. Each scenario was designed to preserve these assets and fulfill interests, and to represent increasing levels of physical and economic change. Scenario planning then moved into the establishment of goals and a vision, specific to the Common, on which this Plan was built.



As defined by the Project for Public Spaces, placemaking facilitates “creative patterns of use, paying particular attention to the physical, cultural, and social identities that define a place and support its ongoing evolution.”



“ROAD MAP” CONCEPT

The Littleton Common Revitalization Plan is to be utilized by the Town and stakeholders as a “Road Map” to guide progress and achieve the shared vision for the Common and meet planning goals. The Road Map is structured in a similar format as a strategic plan in that it that defines a vision for the Common, explains specific goals to achieve this vision, and provides detail on major steps or milestones needed to reach these goals. This Road Map is also a communication tool: a high-level document that helps articulate the strategic thinking — the why — behind the vision, goals, and the steps for getting there.

In terms of steps, the Road Map provides recommendations for attainable near-term actions (a.k.a. “low-hanging fruit”) and more substantial mid- to long-term changes that are aimed at creating permanent positive changes, as outlined in Section 7: Moving from Planning to Action; and Attachment A: Action Matrix. Recognizing that revitalization and redevelopment cannot happen overnight, the intent of these actions is to provide direction on a range of timelines to create steady and appropriate impacts.

COMMON TERMS

The nature of the planning profession, as a highly collaborative field, includes certain phrases and “shortcut” definitions to enable cross-communication among multiple disciplines (e.g., engineers, architects, health professionals, and landscape architects). Additionally, there are a series of specificities related to the Common planning process that do not apply town-wide. It will be useful to occasionally refer to the definitions of key terms listed below.

Area of Analysis: The area in which Scenario Planning has taken place for this planning process. The Area of Analysis is shaped by existing zoning, land uses, and community and physical constraints to likely future development.

Area of Influence: The surrounding geographic area that influences, or is influenced by, development that occurs within the Area of Analysis. The Area of Influence for Littleton Common includes all properties within a half-mile radius of the Common Green and properties within the Littleton Village Overlay District West-Beaver Brook Area.

As-of-Right Development: A development proposal that complies with all applicable zoning regulations and therefore does not require any discretionary action or specific review by a municipal board (i.e., it is pre-determined as allowed under zoning).

Common Green: The two triangular-shaped greenspaces within the direct center of the Littleton Common area. The southernmost triangle green is bound by the intersection of King Street and Great Road to the north and Stevens Street to the south; the northernmost green is bound by King Street to the north and the intersection of Great Road and Meetinghouse Road to the south.

Density: The intensity of land use, which is typically measured in a ratio of units over a given area, such as dwelling units per acre or floor area ratio.

Floor Area Ratio (FAR): The square footage of a building’s floor area in comparison to the total size of the parcel. A one story, 1,000 square-foot building on a 1,000 square-foot site has a FAR of

1.0. A two-story building with 500 square feet on each floor on the same site would also have a FAR of 1.0.

Gross Floor Area (GFA): The total floor area inside a building envelope.

Mixed-use Development: Development that includes a mixture of land uses, including residential, business, and retail, within one lot and/or a series of lots.

Scenario Planning: The visualization of a community’s potential future development, based on existing zoning and a mix of regulatory changes, to build consensus around a proposed direction for growth.

Soft Sites: Parcels within the planning Area of Analysis that are most suited for redevelopment. Suitability is determined by underutilization, community priorities, and individual parcel characteristics such as recent investment, age of building, property size, and non-conforming uses.

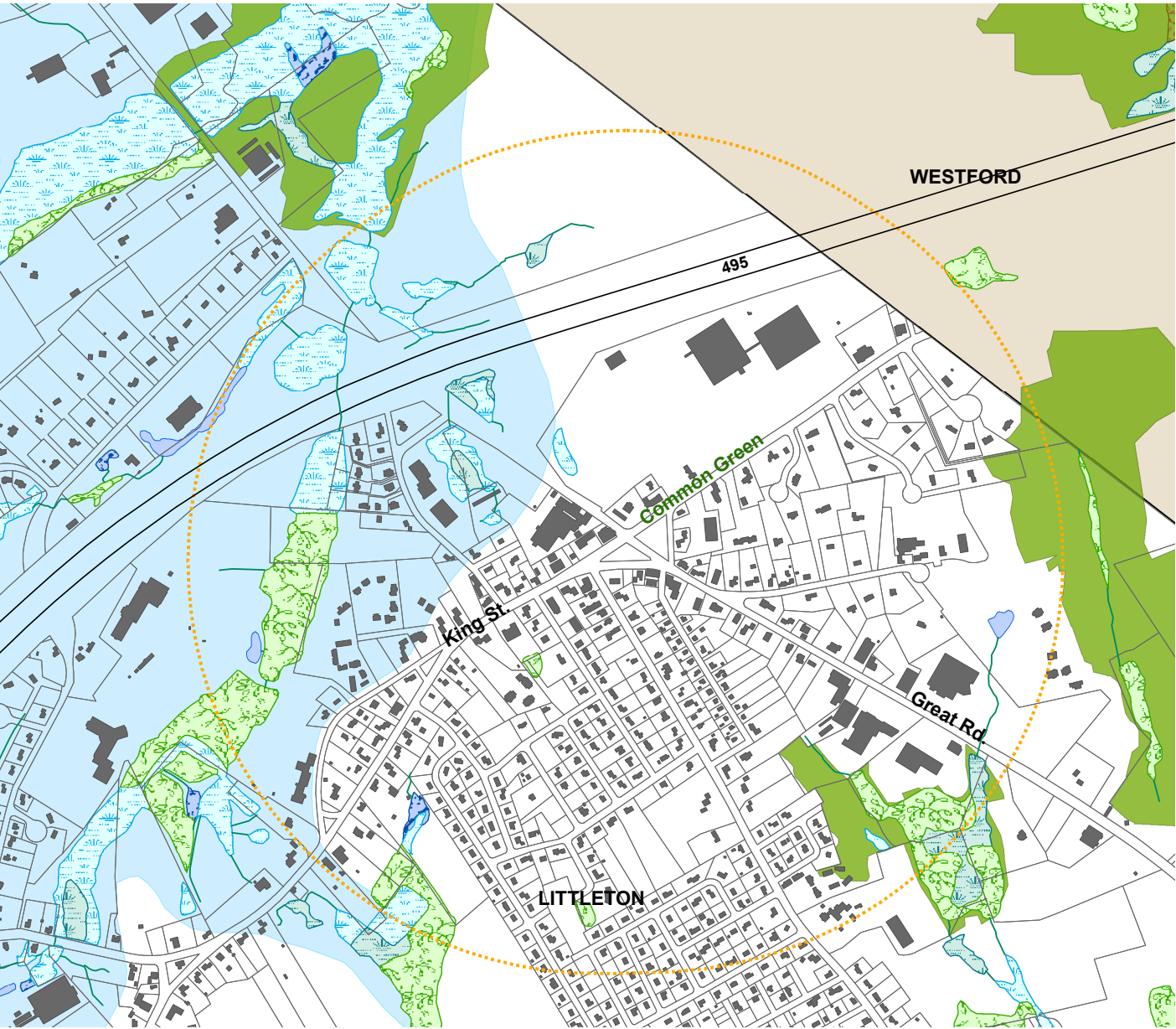
Underutilization: Parcels within the planning Area of Analysis that contain buildings significantly below its potential of allowed uses based on existing zoning, and thus have a strong opportunity for redevelopment.

Zoning Overlay District: A geographic area with a set of regulations/laws that are specific to that district, which typically establishes additional or stricter standards to those of the underlying rules and regulations (zoning). Communities often use overlay zones to protect special features such as historic buildings or wetlands, or to promote specific development such as mixed-used.

EXISTING CONDITIONS

It is critical to first understand the existing conditions of an area prior to assessing redevelopment potential. Natural resources in need of protection, existing development patterns and the placement of infrastructure, and rules and regulations to comprehend the synergies and conflicts between land use interests are all factors that inform and guide future change. Equipped with this knowledge, it is then possible to make decisive determinations regarding development constraints and opportunities.

- For the purposes of this Plan, existing conditions analyzed include:
- Natural Resources: wetlands, wildlife habitat and present species, water resources (surface and groundwater), conserved land, flood plain areas, etc.
 - Existing Development: developed parcels with buildings and/or other structures in place and their supporting infrastructure (water and transportation).
 - Governance and Regulation: municipal government structure and relevant land use regulations and laws.



NATURAL RESOURCES

While the Town of Littleton as a whole is rich with natural resources and wildlife habitat, the Common area is primarily developed and does not include sensitive habitat areas or a predominance of wetland resources.

There are small areas of inland wetland resources located on the southernmost parcel within the study area, by the Donelan's Supermarket, as well as within the IBM campus and a few parcels to the south of King Street. Wetland resources, as well as their buffer areas, are protected by state (Wetlands Protection Act) and local

regulations (Littleton Wetland Protection Regulation) that limit development within their boundaries. Buildings are not currently located in the wetland areas, but any potential redevelopment cannot occur within these resource areas.

An area of priority habitat is located along the southernmost portion of the Common, in which development cannot occur. These areas have been designated by the Massachusetts Natural Heritage and Endangered Species Program as priority habitat areas for endangered or rare wildlife species that are protected under the federal Endangered Species Act.



Littleton Common is organized around two main roads, Great Road and King Street, which intersect around a central Common Green.

DEVELOPMENT AND INFRASTRUCTURE

Particularly around the Green, many buildings are detached structures ranging from one to three stories.

Along Great Road to the south, there is a predominance of low-density banks and office spaces that contribute to a lack of pedestrian appeal. On the southernmost and easternmost edges of the Common, building size increases substantially to include a grocery store, car dealership, hardware store, and the approximately

38-acre IBM campus. Food services include fast food chains, a local sub shop and pub, and two sit-down restaurants.

Many lots that front King Street and Great Road host stores that are not accessible to pedestrians and lots that were designed primarily for vehicular access, which include upfront parking lots, drive-thru aisles, wide setbacks, and obscure building entries. The inconsistent building forms and lack of desirable commercial uses prevent the Common from being a destination worth walking to, while the frequent curb cuts and poor condition of the pedestrian realm further discourage visitors on foot.



VIEW LOOKING DOWN KING STREET TO THE WEST CA. 1880S



VIEW LOOKING DOWN KING STREET TO THE WEST 2016



VIEW LOOKING DOWN KING STREET TO THE EAST CA. 1880S



VIEW LOOKING DOWN KING STREET TO THE EAST CA. 2016

DEVELOPMENT AND LAND USE

Building construction in the Common dates back to 1780, and most of the length of King Street is within a historically important area designated by a Massachusetts Historical Commission (MHC) survey form. Many of the historic structures were or are still in use as detached single-family homes.

The development pattern within the Common area is reminiscent of a typical New England village where the Town government allotted both rural and village parcels to single families by group decision, which were spatially dispersed in a socially cohesive manner. Like other New England villages, the Common is a physical and historic representation of community.

Anchored by the Village Green open space triangles, characteristics of the historic Common village development was that residents could easily walk to homesteads for social gatherings and/or business engagements; properties inherently included “mixed-uses” in which farming, gardens, and workshops were common and trade sales occurred throughout; and the village conveyed a distinct sense of place.

Two major highways: Route 2 (Great Road) constructed in the 1950s and Interstate 495 in the 1960s, cut through the Common and the Town, respectively. While these routes were designed to create connections through the region to and from the Town, they have created a vehicle-centric thoroughway that has resulted in traffic congestion and parking issues within the Common area.

WATER INFRASTRUCTURE

The Town of Littleton supplies its citizens with drinking water from an underground aquifer resource, located just northwest of the Common. It is one of the few communities within the region that does not rely upon the Massachusetts Water Resource Authority for water service. The Aquifer and Water Resource District limits development in areas where groundwater is most vulnerable.

WASTEWATER

In 2018, the Town voted to develop a sewer district that would address the limitations of private septic systems in order to allow greater density and more diverse uses within the Common. The Littleton Common Sewer Feasibility Committee was charged with the responsibility of creating a sewer plan based on a “smart sewerage” system. In contrast to a traditional system, this concept allows flexibility by phasing construction of the system over time, suggesting a range of scenarios to reduce upfront capital investment and adding sewer capacity as growth actually occurs.

Smart sewerage often includes options for an integrated infrastructure scenario where wastewater, septage, and food waste are utilized to generate energy, recharge treated wastewater effluent back to the ground for future drinking water supply, and reuse nonpotable water for irrigation or industrial processes. The sale of produced energy and the sale of produced nonpotable water improve overall operating efficiency and help reduce the long-term operating cost of the plant. Currently, the Town is in the process of solidifying financial estimates and the district area boundaries for the first phase of sewerage. The Common will be included within this district.

This new infrastructure will open opportunities for redevelopment and housing in the Common that was

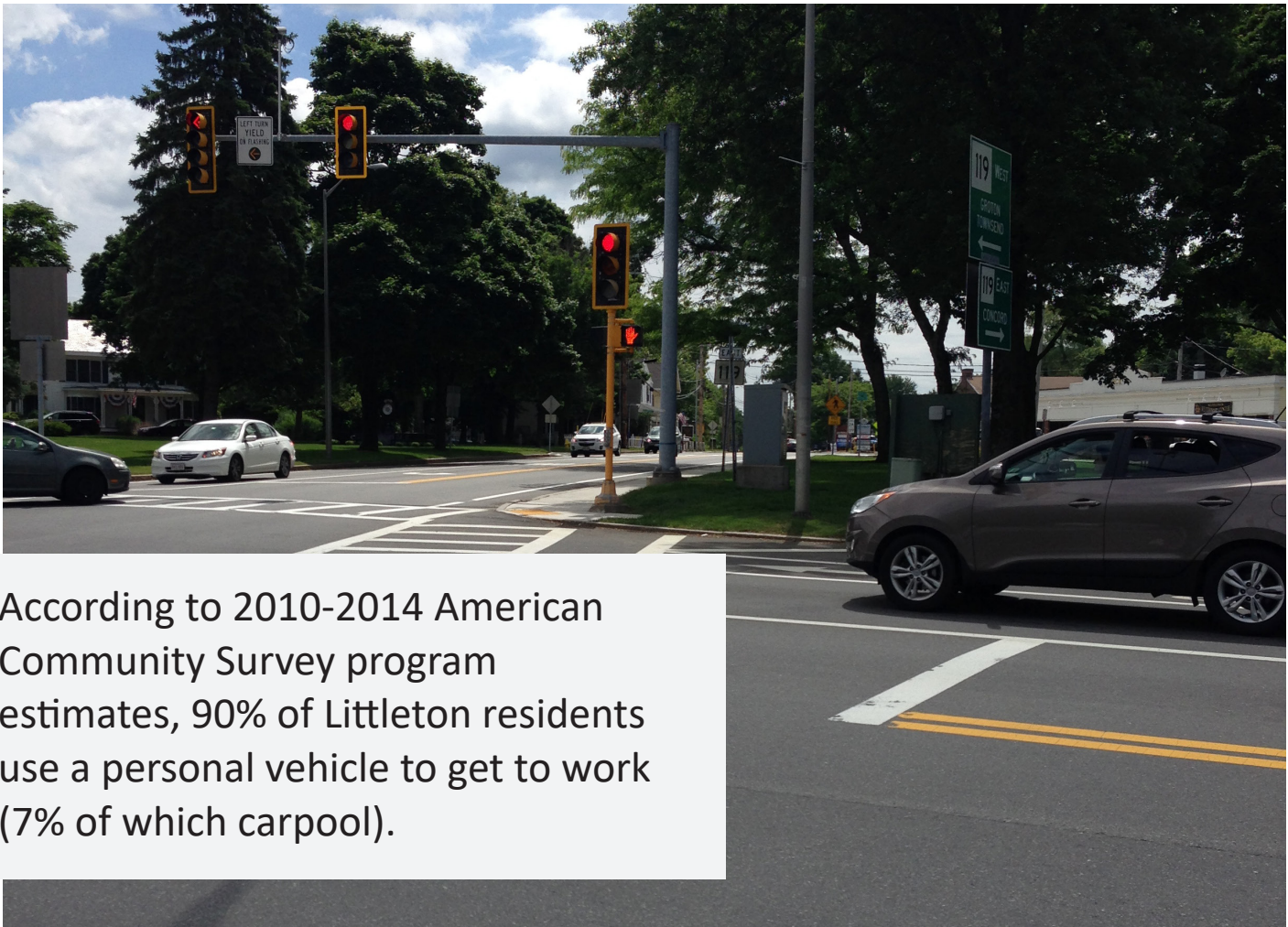
previously not possible due to septic limitations for retail, mixed-use, industrial, and food establishment uses. Demand for enhanced wastewater management within the Common was a specific focus of the sewer study, as illustrated in the table below.

STORMWATER

The federal Clean Water Act National Pollutant Discharge Elimination System Phase II permit for municipalities (the Municipal Sanitary Storm Sewer System (MS4) for Massachusetts) was renewed in 2018 and regulates the discharge of stormwater into a municipal drainage system.

Stormwater is rainfall that runs off developed impervious surfaces such as roadways, parking lots, driveways, sidewalks, and rooftops rather than soaking into the ground. As it flows over the impervious surfaces, stormwater collects and carries pollutants such as vehicle metals, petroleum hydrocarbons (oils and grease), trash, and bacteria from food and pet waste.

The term stormwater management refers to a series of drainage and treatment facilities to convey rainfall runoff and direct it to a catchment facility (i.e., catch basin), which then either infiltrates the water to groundwater or, more typically, sends the water through a pipe system to be discharged to a surface water body or wetland. Stormwater management throughout the Common roadways consists of a series of catch basins and pipes that discharge to nearby wetland resources (surface water bodies, inland wetlands). Opportunities to provide parcel and neighborhood-level infiltration would help protect town-wide water quality and natural resources as well as reduce flooding risk during heavy storms.



According to 2010-2014 American Community Survey program estimates, 90% of Littleton residents use a personal vehicle to get to work (7% of which carpool).

TRANSPORTATION

Due to population increases and new development in the surrounding region, traffic has increased steadily since 1981, often by more than 100% on arterial roadways.

There are three arterial roadways in addition to Interstate Route 495: Route 2, Route 2A, and Route 119, which are owned and operated by the Massachusetts Department of Transportation (Mass DOT), in cooperation with the Town. The intersection of Great Road and King Street, where Route 2A and Route 119 converge, is the most heavily traveled area in Town with between 12,000 and 17,000 average daily trips. Attempts to alleviate traffic on the roadways, including widening the roads, have made the area less friendly to pedestrians and cyclists. Vehicular-based accidents had declined since 2000 but have recently increased from 181 accidents in 2010 to 365 in 2014.

Sidewalks and other pedestrian infrastructure have been added sporadically with new development and are not organized within a comprehensive town-wide network. Only 7% of roadways within Littleton have sidewalks, and only 2% of residents walk (or bike) to work. Narrow streets with close proximity to cars, unprotected bike lanes, and wide streets with high travel speeds all contribute to insecurity for many bicyclists. Some off-street trails connect open spaces to different sections of Town, but a consistent bicycle network is lacking. A Complete Streets policy was adopted in 2013, followed by a \$394,970 grant received from Mass DOT in 2016, to implement more pedestrian and bicycle-friendly projects throughout Town.

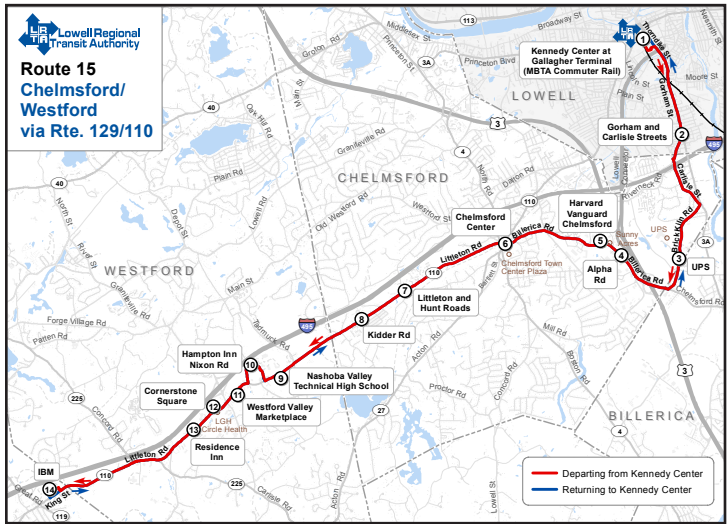
The Massachusetts Bay Transit Authority (MBTA) Commuter Rail Littleton Station is located approximately 2 miles southwest of the Common, with 224 parking spaces and 6 handicap-accessible spaces. Parking at the

Station is routinely over capacity as a result of approximately 97% of MBTA commuters arriving by car.

Only 3% of residents use public transportation to get to work. The only fixed-route bus line serving Littleton is the Route 15 bus, which originates in Lowell and terminates at the IBM Campus just over the Littleton/Westford Town line.

Littleton is part of the Montachusett Regional Transit Authority (MART), which provides support for the Council on Aging transportation services available to senior citizens and disabled individuals who are residents of Littleton. As of May 2016, MART was providing over 500 rides per month and service for about 80 people, indicating a demand that has outpaced its capacity. Discussions about expanding MART to provide a fixed-route or variable route service have not reached an agreement.

The CrossTown Connect (CTC) shuttle service (comprised of a partnership amongst the Towns of Acton, Boxborough, Littleton, Maynard, and Westford, as well as eight private businesses) was formed within the past ten years to increase mobility for residents and employees. CTC provides a carpool database, emergency/guaranteed ride home, and commuter promotional/education events for its users. CTC also operates a service that utilizes IBM parking, and operates two shuttles in the morning and two in the evening from Littleton Common to the MBTA Station.



CURRENT REGULATIONS

An analysis of the Town’s existing regulations was required to create a baseline for the Scenario Planning exercise and establish an understanding of what type of development is allowed. Although current regulations allow for mixed-use and varied development, they do not provide clear guidance regarding design or density that would achieve the vision for the Common as an environmentally and pedestrian-friendly, walkable, and vibrant destination.

ZONING CODE

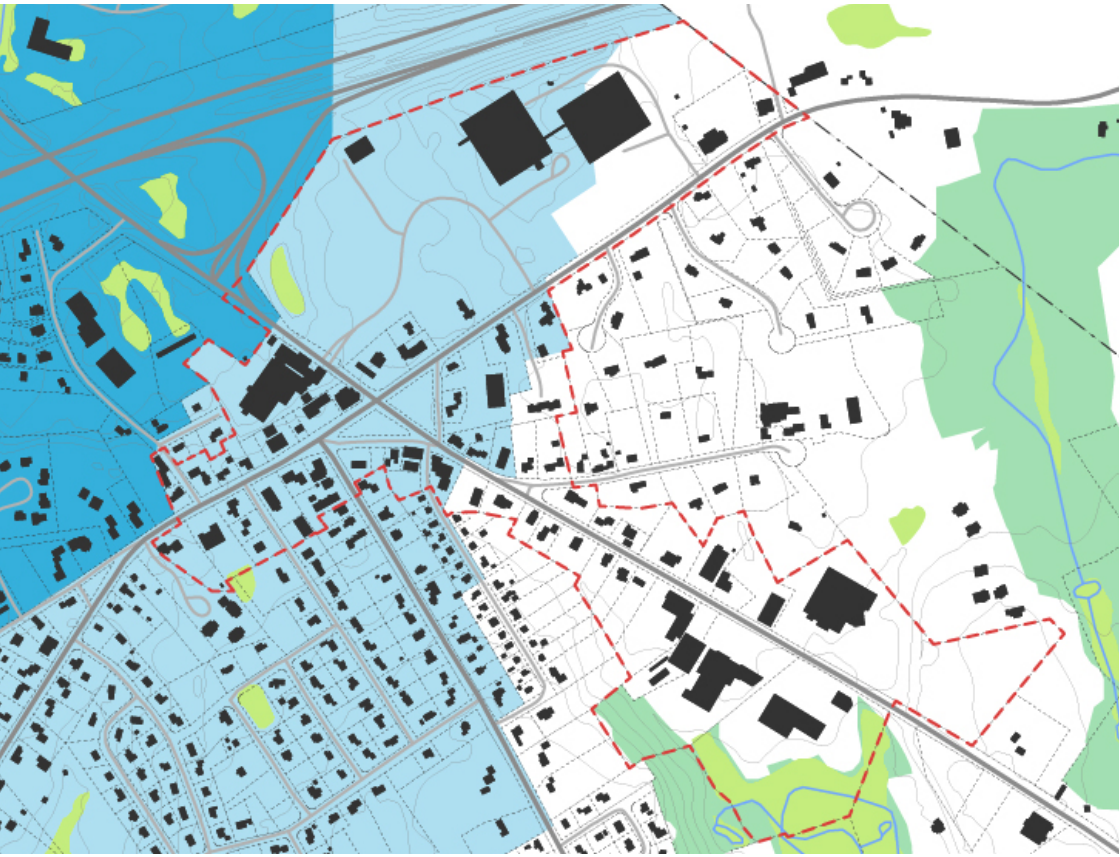
The existing Zoning Code for the Town includes the typical segregation of land uses stemming from traditional Euclidian Zoning. Euclidean Zoning is based

on the notion that certain land uses are incompatible, and as such should be isolated with their own set of regulations, including height, setbacks, and parking. In this way, a community can prevent a factory from being constructed in a residential neighborhood, or an apartment building from neighboring a cottage. It became known as “Euclidean” due to a landmark court case in Euclid, Ohio, which established its constitutionality on the grounds that regulating land uses allow a community to protect public health and welfare (Village of Euclid, Ohio v. Ambler Realty Co. 272 U.S. 365, 1926).

The Common also includes three overlay zones including Industrial A and B, the Village Common Business District, and the Aquifer and Water Resource District. The requirements and limitations of these zoning regulations are described in the following sections.



DEFINING THE AREA OF ANALYSIS: EXISTING ZONING



DEFINING THE AREA OF ANALYSIS: NATURAL RESOURCES



DEFINING THE AREA OF ANALYSIS: LAND USE



INDUSTRIAL DISTRICTS

Portions of the Common are located within the Industrial A and B zones. Industrial A is more restrictive in the intensity of use of a parcel, requiring minimum front setbacks of 80’ and side and rear setbacks of 50’ (as opposed to Industrial B, which is 30’ and 20’, respectively). Maximum building lot coverage is approximately 30% of the site.

Office use, retail, greenhouses, restaurants, manufacturing, storage, and most institutional uses are allowed in each district. Retail is not allowed in the Industrial A district, however.

VILLAGE COMMON BUSINESS DISTRICT

The Village Common Business District, which covers the majority of the Common, imposes regulatory requirements that limit the kind of development in which residents have expressed interest. High parking ratios, large minimum setbacks, and conservative maximum

impervious lot coverage contribute to small buildings with an oversupply of parking that are disengaged from the street.

Senior living centers, offices, retail, restaurants, and most institutional uses are allowed by right in the Village Common Business District. However, due to site restraints and zoning caps on density that make many of these options financially unrealistic, future uses would likely be limited to retail or office. Only single-family houses are currently allowed by right as new residential construction in the Village Common District. Although mixed-use buildings (including studio, one, and two-bedroom units) are allowed in the Village Common District with approval of the Planning Board, additional restrictions have thus far made them unviable.

LITTLETON VILLAGE OVERLAY DISTRICT WEST – BEAVER BROOK AREA

In 2010, the Beaver Brook Overlay District was created to promote economic development and innovative

redevelopment in districts that do not otherwise allow uses such as retail/merchandise, hotels, assisted living, etc.

The district is an optional overlay that allows land owners to utilize regulatory requirements that may be more flexible than the underlying zoning, particularly to give some relief from the Aquifer and Water Resource Districts for appropriate redevelopments. In addition to general performance standards, design standards were introduced to promote compatible, cohesive development that focuses on pedestrian-scaled buildings.

Although the overlay provides additional uses, it prohibits residential use and maintains most underlying dimensions, which emphasize excess parking space and large setbacks.

AQUIFER AND WATER RESOURCE DISTRICT

The Aquifer and Water Resource District serves as a protective overlay zone for water resources and prohibits

certain uses in order to protect the Town’s potable (drinking) water supply. Land uses with wastewater flow exceeding six (6) gallons per 1,000 sf of lot area are required to meet special permit guidelines. Total potential site coverage is limited to 30% within this District. There are some properties within the northern portion of the Common Area of Analysis that are included within this District.

ZONING COMPLIANCE WITH STATE LAW

For the most part, the Town’s zoning code complies with the state zoning laws. However, as noted in Section 7: Moving from Planning to Action, there are a series of changes that should occur to create a far more streamlined, modern, and proactive set of allowances to ensure that revitalization within the Common (and elsewhere in Town) can successfully occur.

PLANNING GOALS

A critical component of developing revitalization scenarios for the Common was the input of stakeholders: Town officials, property owners, business owners, and residents. A robust, two-part public engagement program was established to build upon Common-related goals that came to light during the 2017 Master Plan process.

The engagement program included the following critical paths to create a vision for the Common:

1. Build consensus around the most important goals and concerns of the Master Plan specific to the Common;
2. Specify how the Common does not currently meet the needs of stakeholders;
3. Visualize stakeholder priorities at an appropriate scale and scope of change for the Common;
4. Portray the ways in which design goals must compromise with market conditions; and
5. Identify design and regulatory changes to pursue that will result in meaningful revitalization while respecting Town character.

Stakeholders were first presented with vital information regarding current physical and regulatory constraints to redevelopment, with the understanding that zoning, regulatory, and policy changes would occur to relieve some of these constraints. Therefore, stakeholders were asked to think “outside-the-box” with respect to redevelopment potential.

Workshop attendees were invited to view potential redevelopment illustrations showing development scale and density, and then discuss their interests and concerns with respect to revitalization of the Common. This critical feedback was then used to create possible redevelopment scenarios and frame an economic analysis for change.

PUBLIC WORKSHOP

The first opportunity for stakeholder engagement took place in the form of a public workshop in July 2018, shortly after the planning process began. Over fifty (50) residents, municipal officials, and business owners attended the workshop to view the first iteration of the draft revitalization scenarios.

Following an overview presentation of the planning project, attendees were asked to review and comment on posters illustrating varying redevelopment scale and density, as well as possible infrastructure improvements.

Key feedback statements from participants, which generally represent the overall interests of workshop attendees, are included below:

- Additional greenspaces are required to make the Common family-friendly;
- Green infrastructure implementation within new development/redevelopment is critical - subtle changes could be required such as tree planters, building up to more innovative requirements (e.g. water reuse and energy efficiency measures);
- Connecting parking behind buildings and creating walkways and bike lanes is essential to enable walking and allow use of alternative transportation;
- Residential development on top of commercial development/redevelopment (mixed-use) is much preferred rather than single-use apartment buildings;
- Affordable senior housing close to stores and accessibility for those with disabilities must be included in all development schemes;
- Redevelopment must include community-wide

benefits such as playgrounds/splash parks, and outdoor seating areas;

- Development/redevelopment design should be cohesive, accessible, and quaint.

Input from the workshop essentially established limits of development that were considered acceptable within the Common and set the table for upcoming discussions and planning processes.

OPEN HOUSE

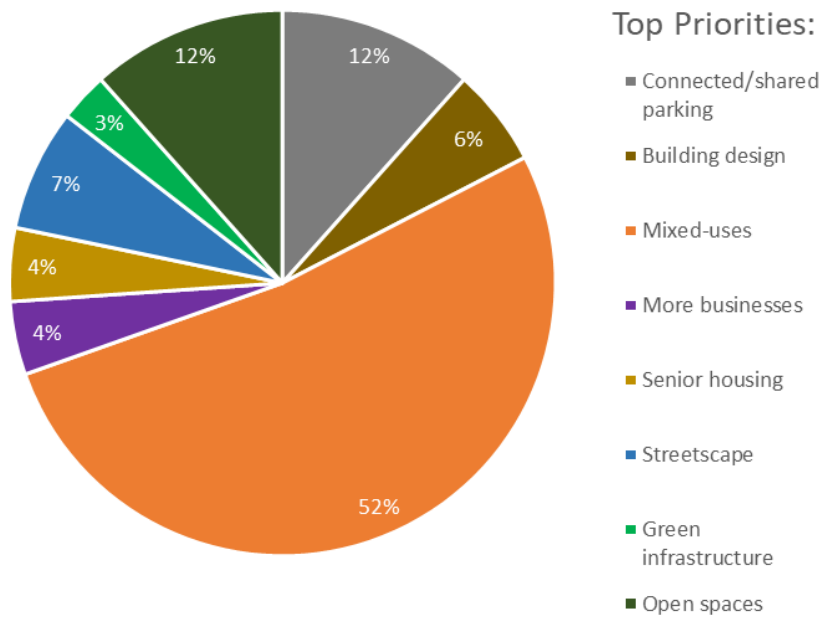
An “open house” event was scheduled in October 2018 to engage stakeholders in more informal conversations surrounding redevelopment potential within the Common based upon the development scale parameters previously established.

Attendees were first asked to review revised redevelopment scenarios illustrating the preferred density and scale of development, alongside findings from the preliminary economic analysis, to consider potential mixed-use options. Attendees focused on selecting the type of commercial development that

they believe would both thrive within the scale of development proposed and alongside residential development, including the following:

- Restaurants, bakeries and coffee shops;
- Specialty craft and gift stores;
- A central community center catering to both young and old visitors;
- Varied grocery options with natural foods, fresh produce, or ethnic options; and
- Recreational centers (e.g. gymnastic/tumbling, yoga).

In addition to the uses identified above, stakeholders were also interested in including nighttime uses to ensure that streets are activated and the Common remains vibrant on a regular basis, such as live music/late night gathering cafés, dance studios, and possibly a small theatre. Over fifty (50) attendees were asked to participate in an open discussion with the planning team and to provide additional comments, if desired, which resulted in the collection of significant information for the planning team to prepare this Road Map.



At the public workshop, attendees were asked to identify their top priorities for redevelopment within the Common. Mixed-use businesses, which promote a walkable and lively streetfront, was cited as the priority for the majority of attendees. Preservation and cultivation of open spaces, as well as improved management of Town parking spaces, were also priorities.



PRIORITIES FOR REDEVELOPMENT

Multiple conversations with stakeholders resulted in a confirmation of previous planning goals as well as new priorities and goals for redevelopment within the Common. Stakeholders that also participated within the Town’s Master Plan update project explained how the Common currently does or does not meet Town-wide goals and offered ideas for new priorities.

PRESERVE TOWN CHARACTER

One of the primary interests expressed by most stakeholders is to ensure that the home-town feel of Littleton is preserved and reflected within the Common. The Town of Littleton is a unique New England community with a long, strong agricultural history. Respecting this history and continuing to foster a sense of neighborliness and community cohesion is a foundational priority for any change.

Currently, Littleton is an area of interest as it strikes a balance between agriculture, conservation, and smart-growth development; is home to a highly-ranked school

district; and offers proximate access to Boston. There are several working farms that remain part of Littleton’s fabric as well as many agricultural specialists and enthusiasts developing backyard farms. Just a half-mile away from the heart of the Common, the Town hosts the largest software development campus in North America: IBM’s MassLab facility, which employs approximately 2,200 people.

With these expanding opportunities, the Town has become a haven for families with school-age children, enthusiasts of the local food movement, supporters of the arts who utilize the nation’s oldest Lyceum, and professionals who desire a conveniently-located small town.

The Common, as the center of the Town, currently fails to illustrate or assert this proud past, hindering future opportunities for Littleton. Populated largely by national chain branches (e.g., banks, service stations, and sandwich shops), as well as indistinct architecture, the Common does not establish the essential sense of place that would make it a popular destination. Stakeholders admitted to either passing by the Common purposefully due to lack of quality shops or parking difficulties, or merely stopping briefly to patron a familiar food-service establishment.

CREATE A MIXED-USE DESTINATION

Nearly all stakeholders expressed an explicit interest in mixed-use development within Littleton Common as a means to boost the Town’s economy, provide a mix of housing options for both current and future residents that is close to amenities (e.g., groceries, entertainment, transit), and to bolster public health via the creation of environmentally sound, walkable destinations.

Stakeholders understand that creating a vibrant, mixed-use community is rooted in pedestrian-friendly development, versus the traditional prioritization of vehicular circulation. Stakeholders believed that creating greenspaces, adequate sidewalks space, bike and walking paths, and green infrastructure facilities within redevelopment projects will attract community members to the area, as well as ensure the longevity of the mix of uses offered.

Although existing Zoning Code for the Town allows and encourages mixed uses within in the Common, there are several other zoning code provisions that contradict this principle. Some provisions, as currently written,

effectively prohibit redevelopment from both a design and a market perspective. As such, most parcels within the Common remain single-use.

PROVIDE VARIED HOUSING

The community is particularly interested in supplying a broader range of housing options to cater to the aging population and young families that have come to settle in Littleton. Specifically, the lack of affordable or suitable housing for seniors has prompted the governing bodies to change zoning to encourage redevelopment.

A variety of housing types is needed within the Town to supply these varying populations with the proper range of options within walking distance of amenities, such as one or two-bedroom townhomes, 2-3-bedroom condo units, and “starter” housing options for families.

Redevelopment within the Common could achieve these goals due to the existing proximity to the Town’s commercial stock of buildings, as well as the opportunity for expansion of these uses to include housing.





VISION FOR THE COMMON

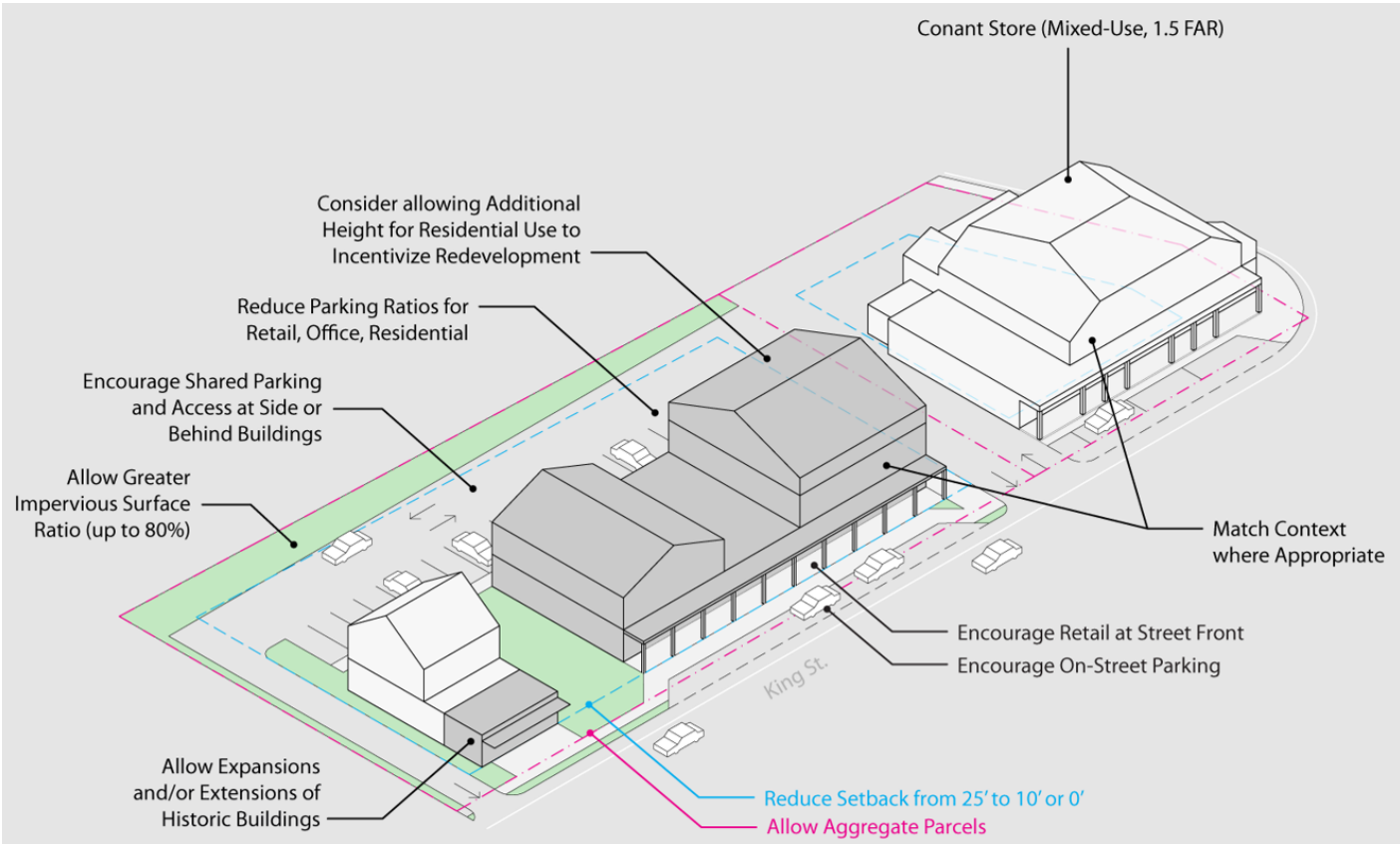
The most critical element of the planning process was to capture the community vision for the Common and inspire change by its stakeholders.

While data-based analyses help establish the realistic parameters of what is possible, emotion is a critical factor in evaluating the opportunities for the Common. Gathering stories from workshop attendees of their collective memory of Littleton harnessed the qualitative, intangible sense of place that the Common will strive to reflect.

Although some residents were apprehensive about new development, the majority of the public providing input expressed enthusiasm for the potential of the future Common. Balancing the desire for new vitality and the

fear of incompatible change, stakeholders helped shape a scenario for the Common that serves as a thriving center for goods and services, entertainment, and activity. This vision includes the following elements:

- Redevelopment of existing sites and/or new development comprised of a mix of residential and commercial uses that can be utilized by various age groups;
- Diversification of the Town's housing stock to include a mix of affordable housing units attractive to seniors, young families, and young professionals;
- Protected natural resources and connected green spaces with passive and active recreational amenities for varied age groups; and
- A vibrant, walkable village center that respects the Town's rich history.



Redevelopment scenarios seek to complement and enhance the existing scale and form of neighborhood buildings.

SCENARIO PLANNING

Scenario Planning is a decision-making tool for the public to evaluate the qualitative aspects of multiple potential futures. These potential futures are illustrated for comparison under existing regulations and different mixes of regulatory changes. The goal of this scenario planning for the Common is to build consensus around one revitalization/redevelopment scenario that best represents the interest and intent of the community and would best support the vision for the Common.

SCENARIO METHODOLOGY

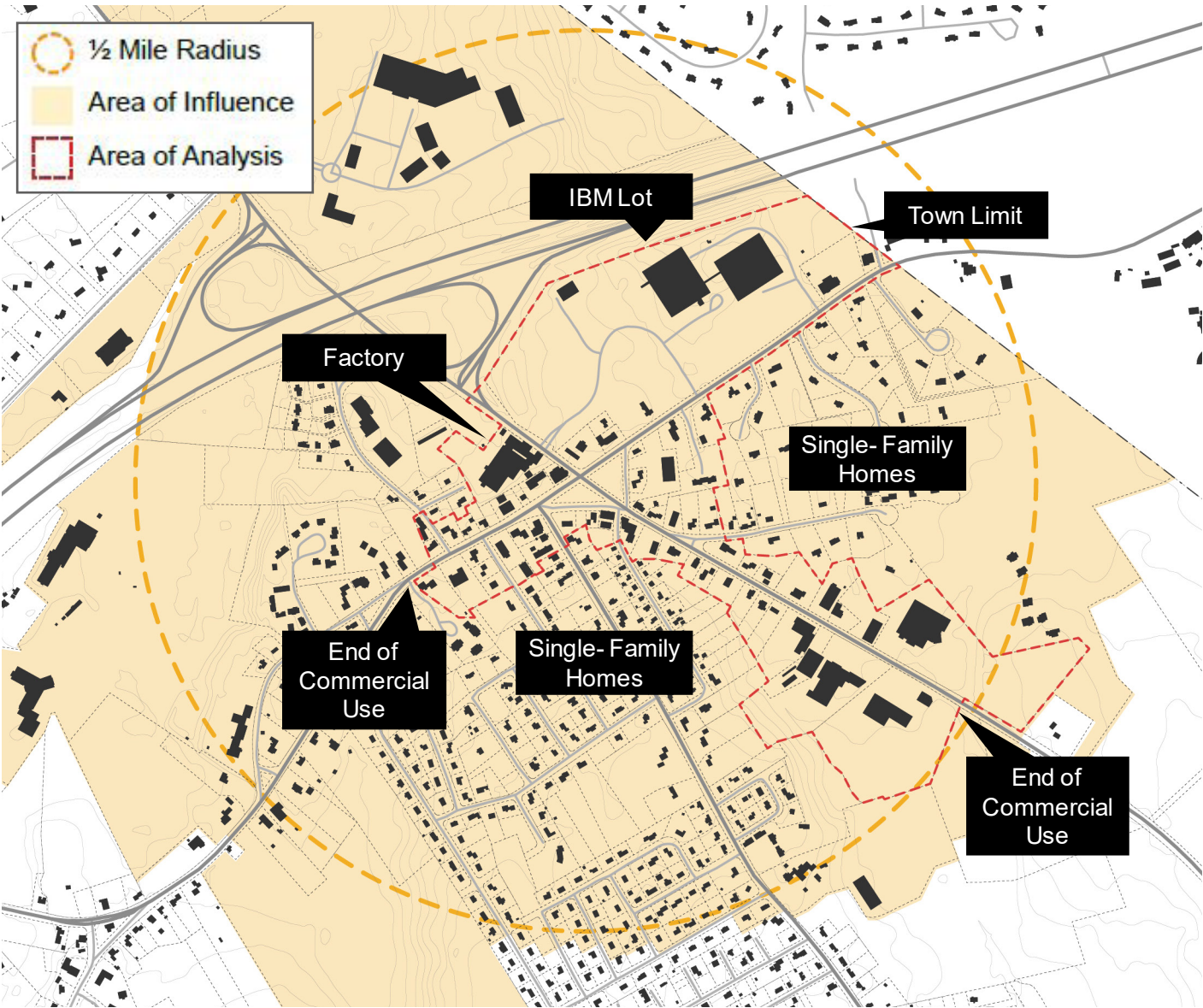
The Scenario Planning conducted for the Common included five (5) fundamental steps, as follows:

1. Defining the “Area of Analysis;”
2. Identifying “Soft Sites” that are best suited for redevelopment;
3. Determining land use demands for the area;
4. Conducting a “test-fit” analysis to draft regulatory changes; and
5. Calculating and illustrating the quantitative and qualitative metrics of the scenarios.

Scenario planning allows a community to fine-tune and calibrate their zoning and regulations to balance potential public benefits against associated trade-offs.

Regulatory changes must be informed by and respect the metrics and layouts of market-driven building types including those of residential, commercial, retail, and mixed-use buildings because these changes are fundamentally about incentivizing redevelopment on private property.

For instance, commercial offices with footprints smaller than 60’ x 60’ or mixed-used buildings with only one floor of housing above one floor of retail are generally considered not viable from a market perspective. As such, it holds that greater zoning allowances afford private owners and developers greater incentives to redevelop. By illustrating the likely outcomes of these regulatory changes via scenario plans, the public can therefore make informed preferences for desired futures.



DEFINING THE AREA OF ANALYSIS

While the Littleton community generally defines the Common as the area around the pair of triangular parks at the intersection of King Street and Great Road, an exact boundary needed be established for the purposes of illustrating scenarios, conducting reasonable feasibility tests, and assessing zoning.

The “Area of Analysis” was determined by cross-referencing the existing zoning, natural resources, and the existing land use maps. The 2010 adopted Village Common Zoning District boundary map and Town’s land use database formed a reliable starting boundary because together they capture a precedent for a Town-approved mixed-use commercial area. Additionally, this

preset boundary represented the on-the-ground reality of what is generally accepted as the Littleton Common commercial area. This boundary stretches from the Conant-Houghton Factory at the north, to the IBM headquarters at the east, to the Toyota car dealership at the South, and to the Lyttleton Inn at the west.

Some parcels were deliberately excluded from the Area of Analysis, such as single-family parcels on Goldsmith and Jennifer Streets, due to the unlikelihood of these residential parcels being redeveloped. The resultant boundary was also informed by the natural resources map: particularly sensitive areas, such as the Aquifer Protection District or wetland resources, were removed from the Area of Analysis.

IDENTIFYING THE SOFT SITES

“Soft Sites” are properties in the Common that have been determined to have the greatest potential for redevelopment based upon existing land use analysis.

This analysis was informed by the Town’s available land use data with respect to building conditions (age, materials, investments), lot underutilization, historic resources, and parcel ownership. The result of this analysis is a list of properties (the Soft Sites) that should be used as exemplars to “test” development densities and scale.

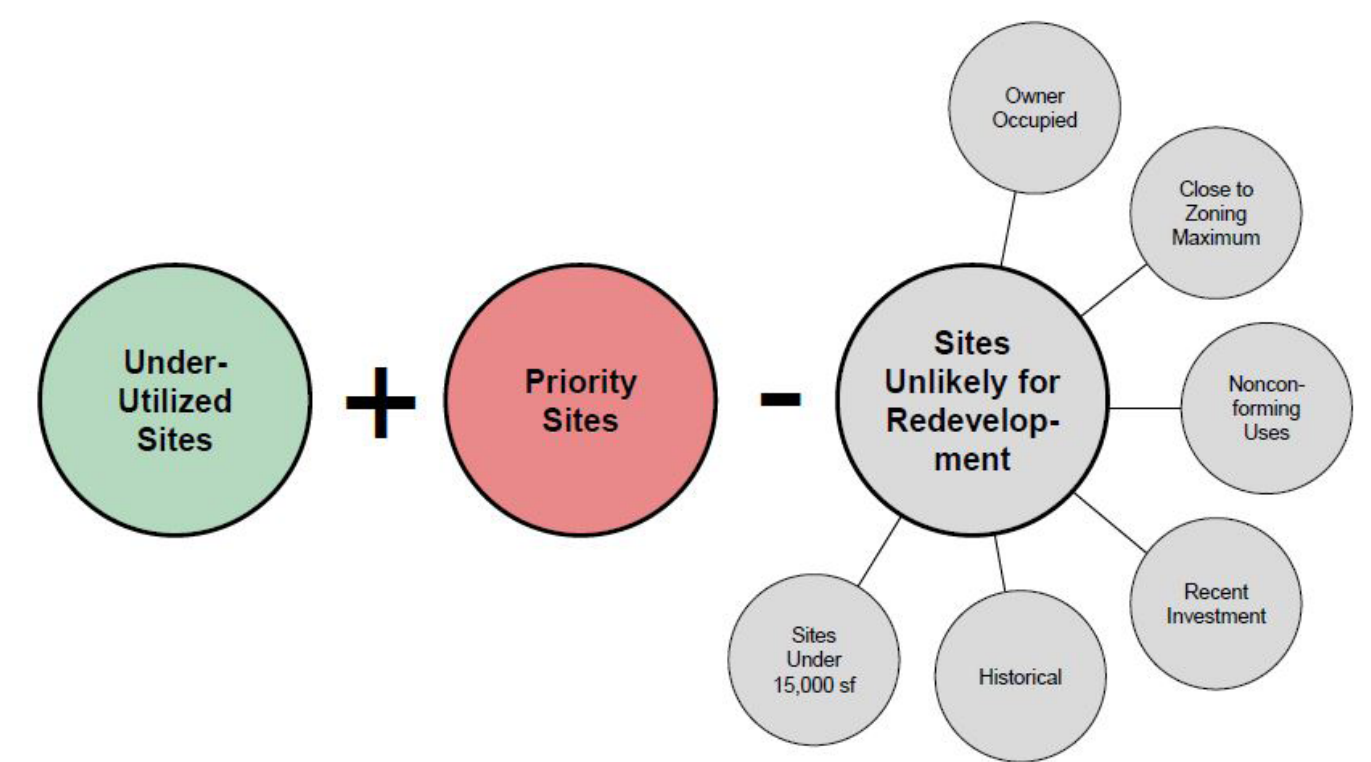
For the purposes of this study, the Soft Sites selected primarily include underutilized properties (e.g., drive-thru banks, gas stations, etc.) that are likely targets for redevelopment. Sites that were not selected were determined unlikely to be redeveloped, such as properties that are owner-occupied, contain non-conforming zoning uses (that likely received a variance or have been “grandfathered” to allow the use), have

benefitted from recent investments, have historical value, or are smaller than the minimum area required for redevelopment.

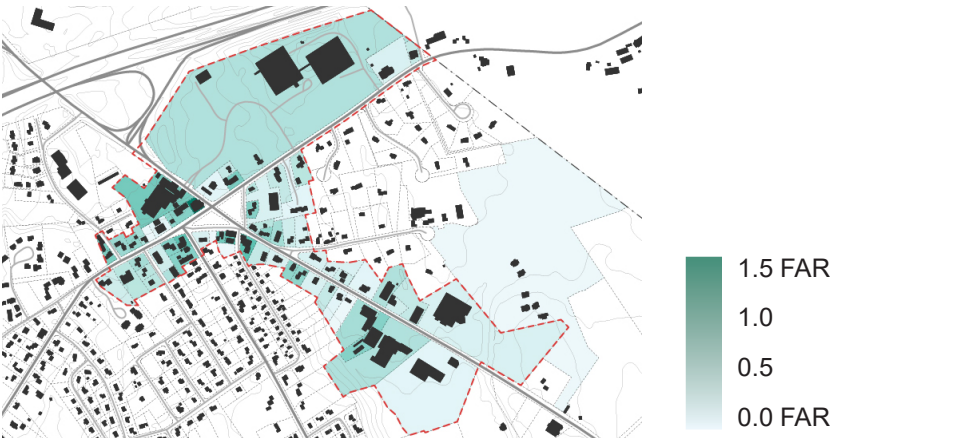
IDENTIFYING LAND USE DEMANDS

Concurrent to the identification of Soft Sites, a preliminary economic analysis was conducted to identify use demands in Littleton (e.g., housing, retail, commercial). This analysis was important, particularly at this stage, because it informed the degree of regulatory change that would be realistic from a market perspective. For example, if Littleton cannot realistically accommodate additional retail, it would make little sense to create regulatory changes that would incentivize new retail.

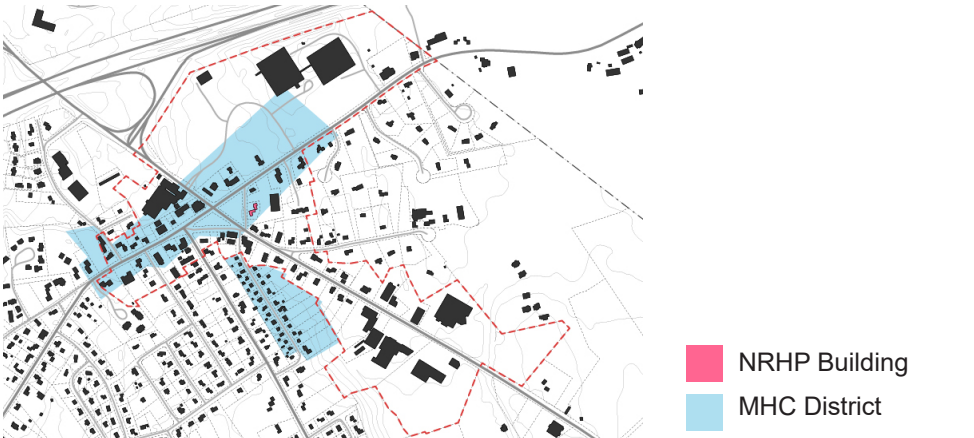
Demographic projections, coupled with strong retail gaps, support the capacity of Littleton to accommodate both added multi-family housing (for seniors and young workers) and new retail in the industries of restaurants, clothing, and hobby stores, among others.



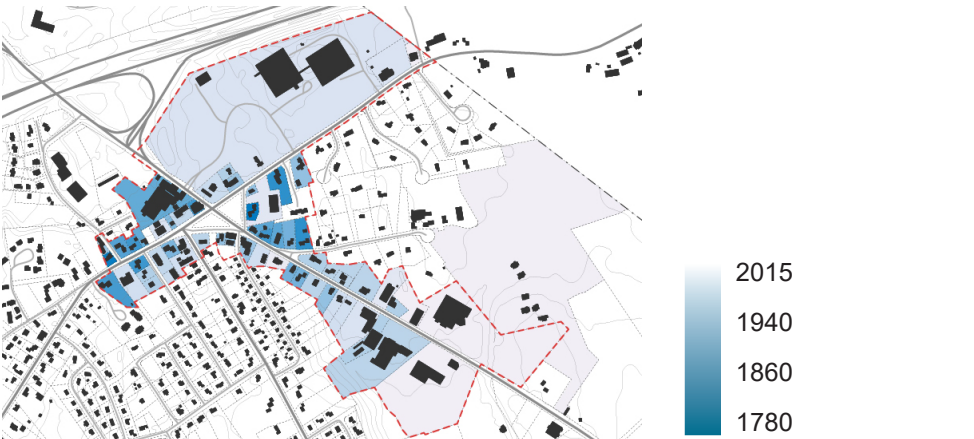
BUILDING DENSITY



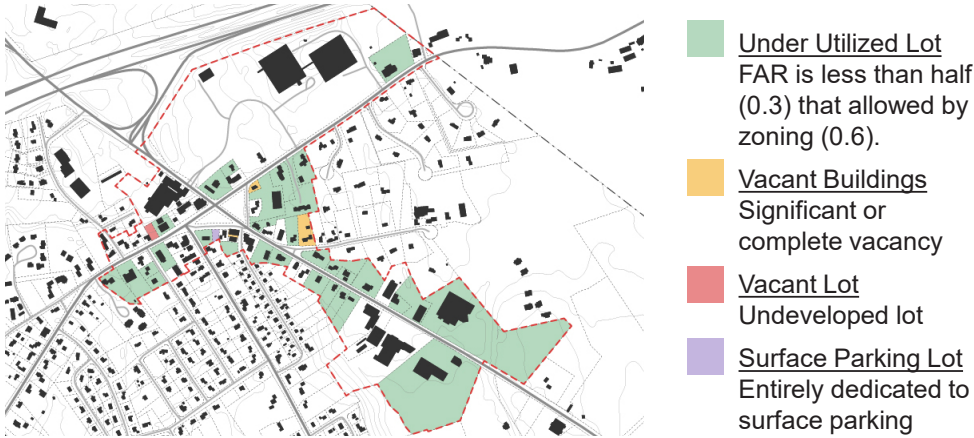
HISTORIC BUILDINGS AND DISTRICTS



BUILDING AGE AND QUALITY



UNDERUTILIZATION





Based on the analyses of existing building density, historic buildings and districts, building age and quality, and underutilization, the adjacent parcels were identified as Soft Sites for redevelopment. These sites were used as the basis of the scenario creation and evaluation.

TEST FIT ANALYSIS

Once established, the Soft Sites were then tested under specific scenario parameters. This process involves both the calibration of zoning changes, if any, and the resultant feasibility tests under said respective zoning changes.

The four (4) planning scenarios selected for feasibility tests include:

- Scenario 01 – No Zoning Changes, without Sewering
- Scenario 02 – No Zoning Changes, with Sewering
- Scenario 03 – Some Zoning Changes, with Sewering
- Scenario 04 – Greater Zoning Changes, with Sewering

SCENARIO PARAMETERS

Scenarios 01 and 02 do not include zoning changes: the variable between them is the status of the sewer infrastructure.

Many in the Town have expressed that the lack of municipal sewer for the Littleton Common has restricted uses such as restaurants, hospitality, and others that require greater water Gallons Per Day (GPD) consumption and waste.

It is however important to distinguish between existing septic system limits and those legally allowed, which may often be much higher than said existing septic systems. That is, some building uses can legally convert to restaurant use if owners decide to upgrade their septic systems and bear the related costs.

Based on GPD limits set by the Massachusetts Department of Environmental Protection (DEP) of 10,000 per lot, the following are the maximum buildable areas per principal use types per lot:

- Multi-Family Residential: 100,000 sf
- Motel, Hotel: 65,000 sf
- Retail (Restaurant): 10,000 sf
- Retail (Non-Restaurant): 200,000 sf
- Office: 133,000 sf

These buildable area limits rarely impose a meaningful constraint because almost all Soft Sites are relatively small (assuming that the on-site septic system has been sized to the max GPD limit).

Even restaurants, the most limited of the uses, can legally accommodate up to 10,000 sf. For reference, that is a footprint approximately 100’ x 100’, a dimension that few parcels can currently physically accommodate, assuming no contiguous aggregation. This lack of impactful limitation from a septic perspective means that zoning is actually more of a limit on redevelopment for the majority of parcels.

Scenarios 03 and 04 employ similar zoning changes but to two different degrees of zoning relief for heights, parking ratios, setbacks, density, and impervious requirements, among others. Scenario 03 employs some zoning relief while scenario 04 employs greater zoning relief. These scenarios were based upon stakeholder-expressed goals for a more walkable, mixed-use, sustainable, and connected Common.

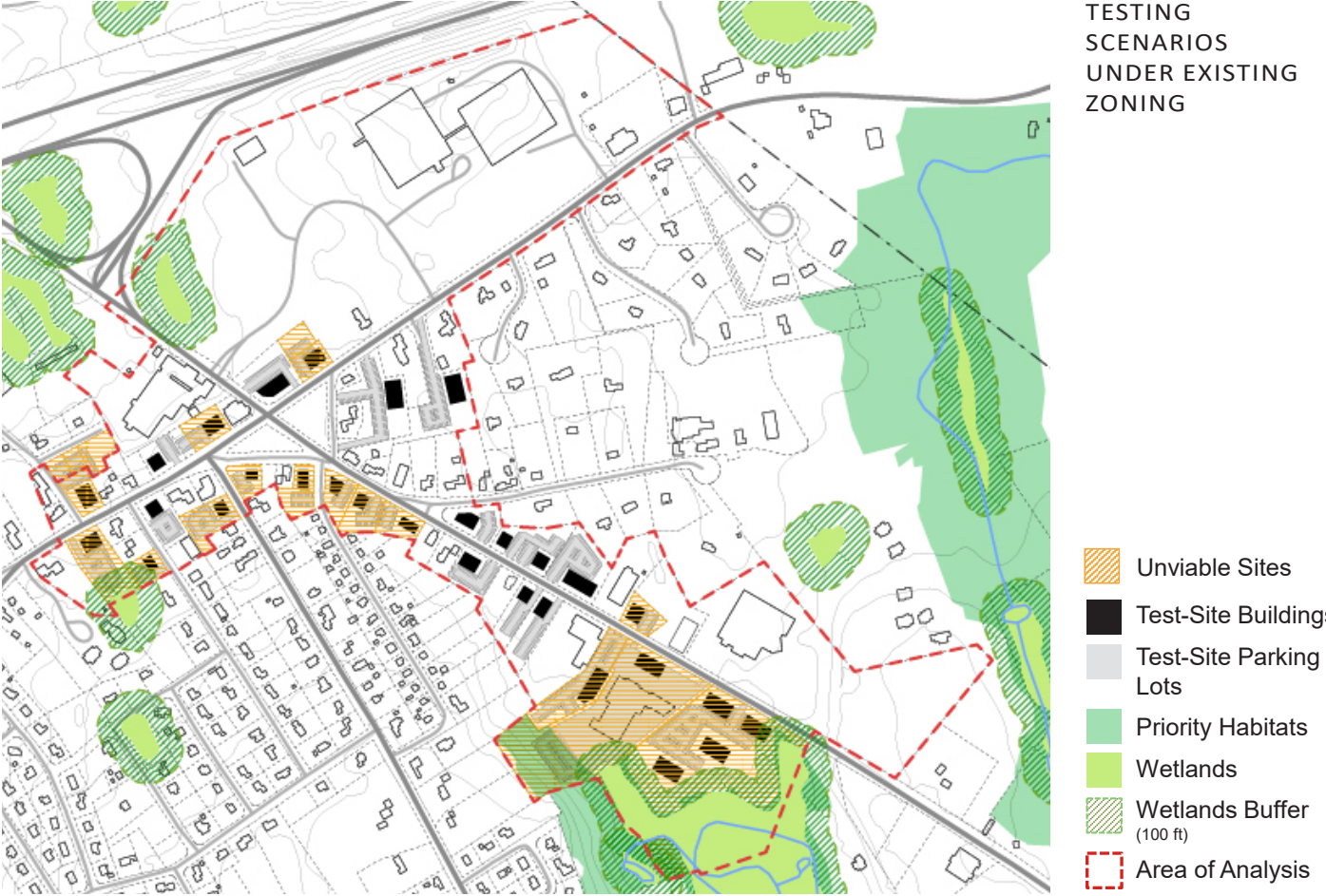
TESTING EXISTING ZONING LIMITS

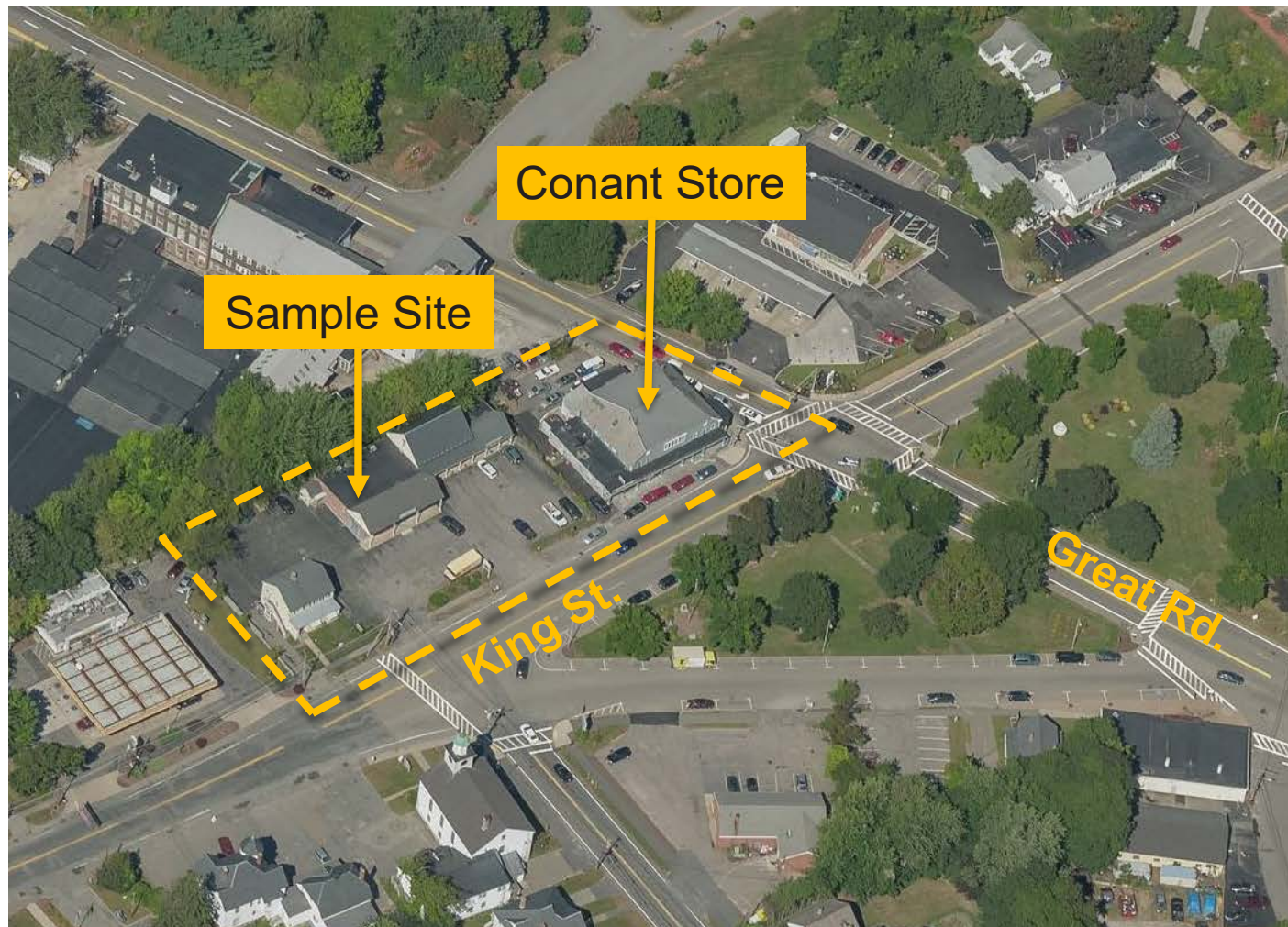


TESTING EXISTING SETBACK CONSTRAINTS



TESTING SCENARIOS UNDER EXISTING ZONING





Each scenario was tested by evaluating the highest and best possible use under each respective level of zoning change. The sample site illustrates this process.

FEASIBILITY TESTS

Feasibility tests were approached from the perspective of a private party seeking to maximize the value of the site: a test that effectively amounts to an illustrated “highest and best use analysis.” Whether housing, retail, commercial, or some combination thereof, each parcel is designed to maximize the total Gross Floor Area (GFA) and Floor Area Ratio (FAR), set within the scenario constraints allowed by setbacks, heights, parking ratios, etc.

The approximate use proportions pursued in each of the four scenarios are as follows, as informed by the market demand analysis:

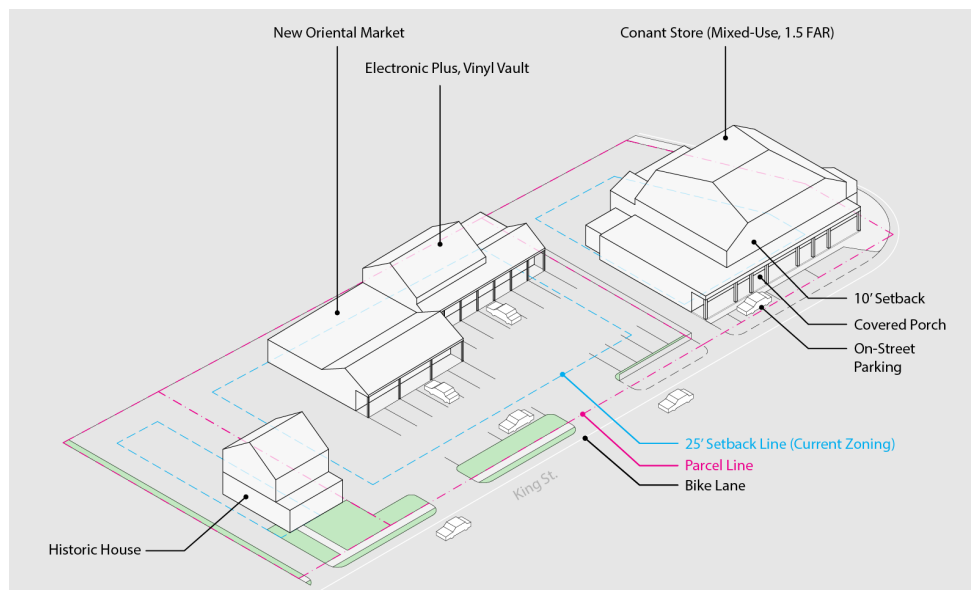
- Scenario 01 – Housing (0%*), Retail (55%), Office (45%)
- Scenario 02 – Housing (0%*), Retail (55%), Office (45%)
- Scenario 03 – Housing (65%), Retail (20%), Office (15%)
- Scenario 04 – Housing (65%), Retail (20%), Office (15%)

It is important to note that the projected housing included in Scenarios 01 and 02 were set to zero not because there is no demand for it, but because the existing zoning codes are so constraining that any mixed-use housing design on selected sites would generally not be viable.

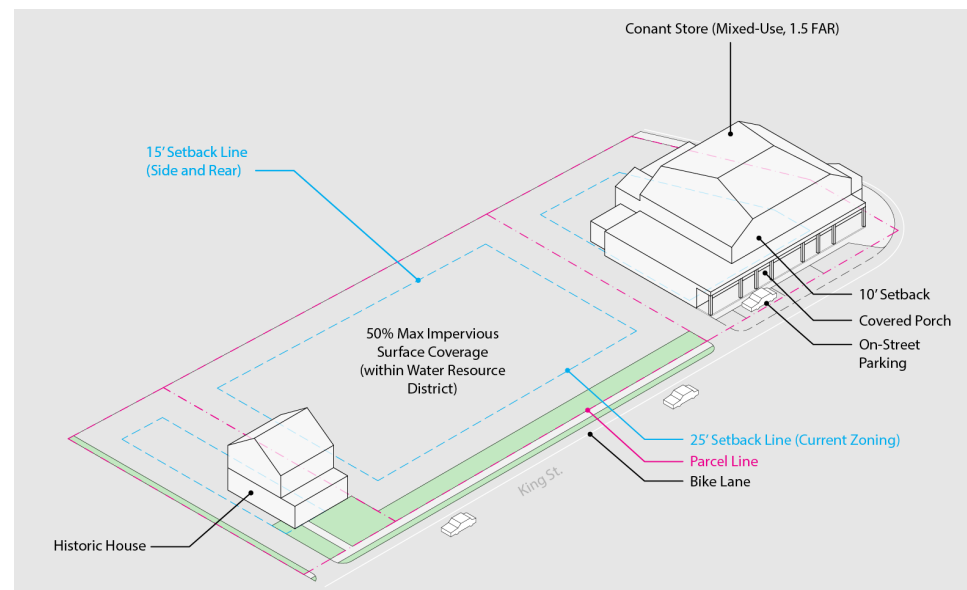
VIABILITY OF REDEVELOPMENT

The scenarios were then assessed for their viability of redevelopment based principally on their net gain in GFA and FAR. For example, redevelopment scenarios for parcels that actually equal or lose GFA automatically disqualifies such parcels in terms of their likelihood to be redeveloped, and therefore were excluded from the Economic Impact Analysis relative to each scenario.

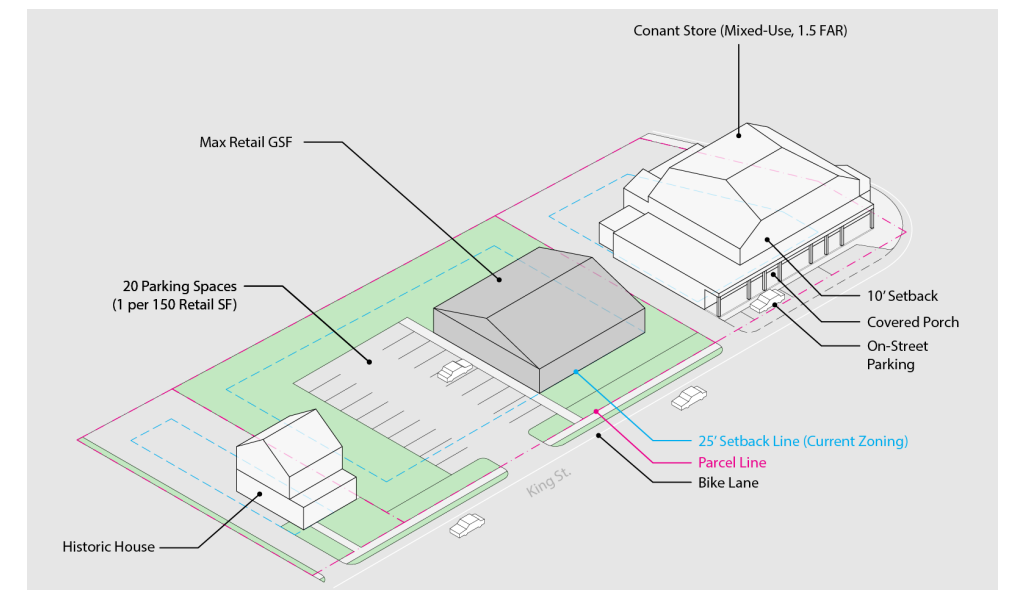
Put simply, no owner would redevelop if they do not get in return a building with more square footage than their existing building. To be conservative, only parcels that make sizable gains in GFA and FAR (i.e., at least approximately 0.25 FAR) are deemed viable for redevelopment, and therefore, are included in the Economic Impact Analysis.



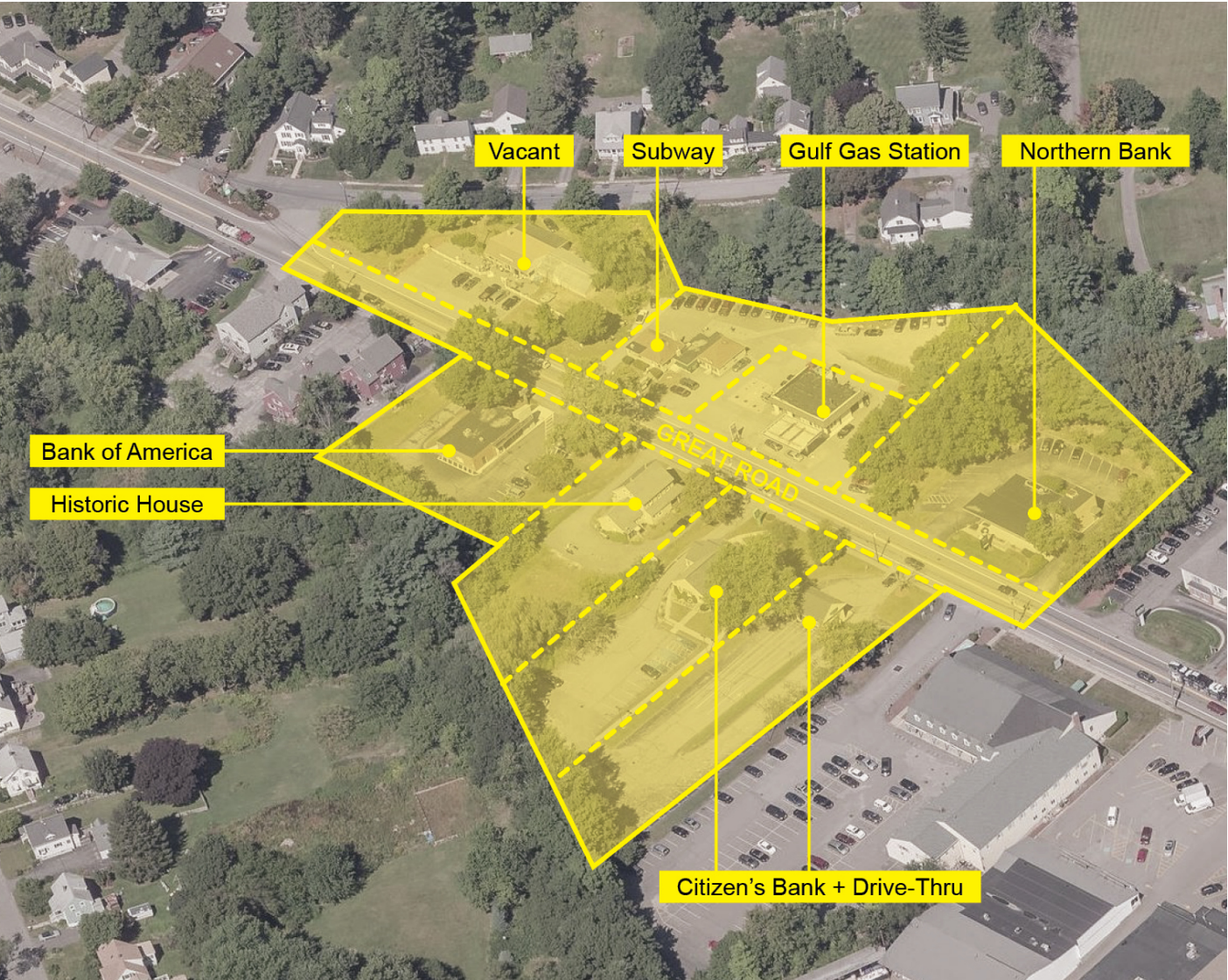
Current conditions reflect existing zoning requirements of a 25' setback from the front of the parcel and a 15' setback from the sides and rear.



In addition to setback minimums, redevelopment constraints under existing zoning include a 50% maximum coverage of impervious surface.



The feasibility test indicates that redevelopment is not likely to contribute to a more walkable or vibrant Common without relief from existing zoning regulations.



CALCULATING QUANTITATIVE AND QUALITATIVE METRICS

The last step involved calculating and illustrating the quantitative and qualitative metrics of the scenarios so that stakeholders could compare and make an informed preference. Quantitative metrics include projected gains in use areas and annual tax revenues, among others. Qualitative metrics include improvements to the public realm and urban environment, among others, as depicted in the scenario visualizations.

To best illustrate these qualitative metrics, a zoomed-in sample area of 8 parcels (along Great Road stretching from Robinson Rd to the end of Northern Bank) were visualized from a bird’s-eye perspective and color-coded

- to represent use types. This particular sample of parcels was selected because:
- They had difficult lot sizes and shapes;
 - The variety of uses were readily translatable to other sites;
 - The lots represented a continuous cluster fronting Great Rd;
 - They represented a grouping of some of the most underutilized parcels; and
 - The lots were situated between small scale buildings to the north and large-scale buildings to the south, representative of a mix of uses within a dense village.

SCENARIO DESCRIPTIONS

While Scenario 01 and 02 do not include proposed zoning changes, Scenario 03 and 04 propose zoning reliefs within a range of categories. As noted earlier, the spirit of these changes is to enhance the public realm, promote walkability, expand business frontage, improve streetscapes, and increase housing density, among other goals.

The existing conditions found on many sites within the Common in fact directly oppose these goals. For instance, many lots front King Street and Great Road not with approachable retail storefronts but with parking lots, drive-thru aisles, setback lawns, obscure building entries, and a lack of sidewalk. An intention to redevelop these lots to support the aforementioned goals will be severely

restricted by existing zoning requirements on impervious surface percentages, parking ratios, and setbacks, among others. Because the limits imposed by zoning are greater than those imposed by septic regulations, zoning reliefs are therefore necessary to begin to address many of the community’s goals and aspirations for the Common.

It is important to note that the visualization accompanying the following scenarios only represents one subsection of the Littleton Common Area of Analysis and also its maximum build-out scenario. In reality, any redevelopment scenario would likely occur over many years, and such redevelopment would occur in a much more scattered manner than depicted. For example, the Northern Bank sites on Great Road may redevelop to new retail and housing uses while the Bank of America across the street may remain as-is for many years.

	SCENARIO 01 & 02	SCENARIO 03	SCENARIO 04
	Existing Zoning With and Without Sewer	Some Zoning Changes With Sewer	More Zoning Changes With Sewer
Height	Up to 3 Stories Allowed	Up to 4 Stories* Allowed (*only if commercial use at ground floor facing street)	Up to 4 Stories Allowed
FAR (Floor Area Ratio)	Up to 0.6 FAR Allowed	Up to 0.9 FAR Allowed	Up to 1.2 FAR Allowed
Setbacks	• 25’ from Street • 15’ from Side / Back	• 10’ from Street • 5’-10’ from Side / Back	• 10’ from Street • 5’-10’ from Side / Back
Parking Requirement Ratios	• 6.67 spaces / 1000 sf of leasable retail • 4.0 spaces / 1000 sf of leasable office • 1.5 spaces / multi-family dwelling unit	• 4.0 spaces / 1000 sf of leasable retail • 3.0 spaces / 1000 sf of leasable office • 1.25 spaces / multi-family dwelling unit	• 2.0 spaces / 1000 sf of leasable retail • 2.0 spaces / 1000 sf of leasable office • 1.0 spaces / multi-family dwelling unit
Parking Placement	Front, Side, and/or Rear	Side and/or Rear Only	Side and/or Rear Only
Impervious Surface	50% - 80% Max	80% Max	80% Max

SCENARIO ZONING CHANGE SUMMARY

SCENARIO 01 – EXISTING ZONING WITHOUT SEWERING



Scenario 01 projects the future of the Littleton Common under existing conditions and without a municipal sewer system. As the board illustrates, existing zoning requirements would likely prolong the status quo, allowing developments that prioritize vehicular travel, parking lots, large building setbacks, and low density, among other characteristics counter to pedestrian walkability and street activation.

Under existing zoning, redevelopment schemes must reserve the majority of the site for parking and can locate the building anywhere within the setback perimeter (25'), further disengaging from the street. Use would likely be limited to retail and potentially office due to caps on density. As evidenced by the lack of new housing developments in the Village Common District, residential use remains unlikely due to limits on height, density, size of parcel, and necessary sprinkler systems for mixed-use buildings.



SCENARIO 02 – EXISTING ZONING WITH SEWERING



As noted above, the addition of municipal sewers has less of an effect on the overall size and scale (“massing”) of redevelopment in the Littleton Common and more of an effect on the variety of use. As such, these conditions also apply to Scenario 02.

For instance, whereas an owner may not be able to host a restaurant in their building due to the existing septic system capacity, this would become possible under Scenario 02 with the addition of a sewer system. However, the building size would remain restricted under existing zoning, which may affect the market viability of certain uses.

It is important to reiterate that existing property owners may upgrade their septic systems to accommodate new uses that imply greater GPD usage (e.g., restaurants, cafes, etc.), but they must bear this upgrade cost themselves.



SCENARIO 03 – SOME ZONING CHANGES WITH SEWERING



Scenario 03 recalibrates zoning regulations and assumes the implementation of a municipal sewer system. The most notable zoning changes are the increase of maximum height for mixed-use buildings with retail on the ground floor, the increase in allowed density via FAR, the reduction of setbacks, the reduction of parking ratios, the prescribed placement of parking lots, and the increase in impervious surface percentages. These regulatory reliefs help to create a more consistent streetscape lined with retail and commercial use, reduced areas for parking now relegated to the sides and rears of lots, added density for potential new multi-family housing, buildings scaled and designed to the context, and a variety of commercial uses.

Scenario 03 represents a potential future for Littleton that realistically accommodates market-viable redevelopment balanced against acceptable trade-offs in increased scale and density. If the Town decides to vote against Form-Based Zoning (see Form-Based Zoning below), is it recommended that the Town considers placing a limit on the number of units or gross area per building, so as to limit the maximum size of any one building, regardless of lot size or FAR limits. For instance, the Town may want four smaller buildings on one large parcel instead of the possibility of one large building on the same parcel.



SCENARIO 04 – GREATER ZONING CHANGES WITH SEWERING



Scenario 04 recalibrates zoning regulations in the same direction as Scenario 03, but to a greater degree. For example, parking ratios are further reduced, height allowances are allowed for any combination of use, and allowed density is increased.

The spirit and goal of these changes remain the same, but the resultant urban form may be larger in scale and the attendant impacts would proportionally increase, such as added density and housing units, more office and retail space, added jobs, and increased tax revenues.



ECONOMIC IMPACT ANALYSIS

An economic analysis was undertaken to determine the benefits and tradeoffs of encouraging mixed use development within Littleton Common (i.e. impacts on taxpayers and Town finances, traffic flow and transportation, etc.). The analysis aimed to suggest the combinations of commercial and residential sites that would provide the greatest benefits to the Town.

For the purposes of this planning process, the analysis was focused on the “test fit” parcels that were chosen to test the desired redevelopment scenario for the Common. The economic analysis was designed to achieve multiple objectives:

- Provide an examination of the environment in which the proposed redevelopment options would take place,
- Evaluate the redevelopment options for their plausibility given what is known about current and future economic and demographic trends, and
- Measure the incremental economic gains that could be realized should the redevelopment scenarios come to pass.

Existing and projected data were used to evaluate the anticipated effects of redevelopment and provide a snapshot of the likely tax revenues, economic activity, and business sectors that could be generated. Findings include measurements of new jobs, wages, business revenues, and taxes that redevelopment/development within the Common would support.

METHODOLOGY

The first use of the economic analysis preceded the creation of the redevelopment scenarios in order to provide context for appropriate levels of redevelopment.

The analysis answered questions such as:

How many people live in Littleton now and will in the future?

What kinds of retail spaces are missing in the Common? What types of housing units should there be?

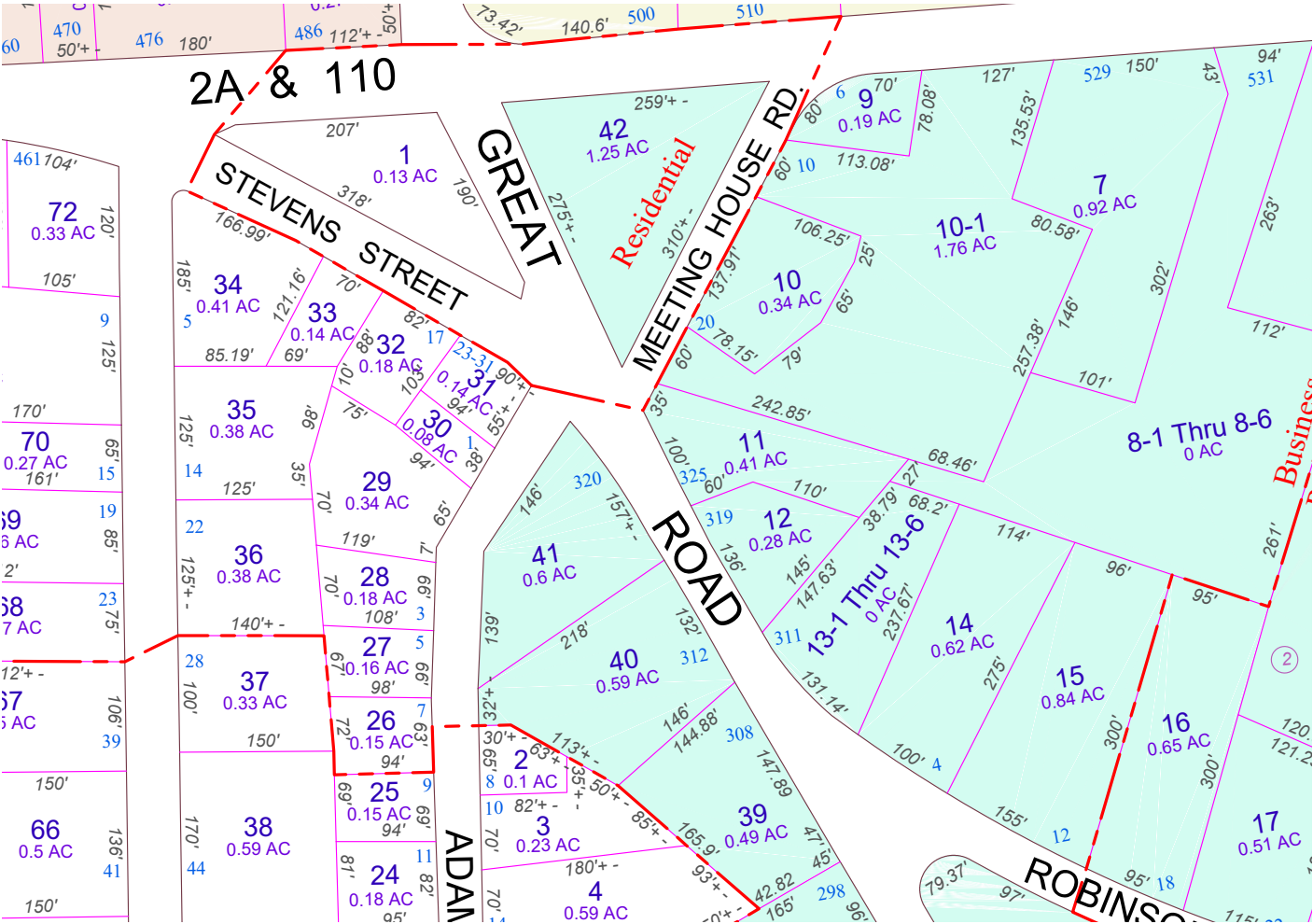
What types of spaces would the commercial sector need?

Using the context provided by the answers to these questions, multiple redevelopment scenarios with increasing levels of density were created.

After the scenarios were refined to fit within the design character of Littleton, further economic analysis evaluated each redevelopment scheme for plausibility within the known market constraints. In this phase, the new residential, retail, and office spaces provided in the scenarios were “filled” with residents and businesses to then compare estimated tenants, clients, etc., to existing knowledge of housing and commercial markets. These comparisons were used to evaluate whether there was sufficient demand to support the envisioned redevelopment.

New jobs, wages, business revenues, and taxes that the Common would support were then measured. Using the detailed designs for each scenario as a guide, the redeveloped parcels were “filled” with either renters, retailers, food services, or office tenants as appropriate.

With knowledge of the typical behavior of the various sectors and uses, the analysis makes it possible to estimate the new economic activity supported by the expansion of businesses in the Common.



Data regarding current and future economic, demographic, and housing patterns in Littleton was collected to determine whether housing, retail, and office spaces proposed within each scenario would realistically meet the needs and interests of the community. This information included:

- Data on household size by the age of head of household and tenure (i.e. rent or own) to understand how changing demographics would impact demand for both the number and type of dwellings;
- A forecast of the Town’s population by age to be used in conjunction with the above household data to determine housing demand;

- An analysis of building permits issued in the past to indicate the ways in which the supply of dwelling types has changed over time;
- Data on the average wages, sales, and space needs per worker for various industry sectors to fill the spaces created in the redevelopment scenarios with economic activity;
- Retail supply and demand data, akin to that used in the planning and leasing data for the Point, to capture the current spending of Littleton residents within and outside of Town and to identify the most successful retail sectors for the Common; and
- Information from Littleton’s assessor to estimate the potential property tax ramifications of replacing some of the current buildings with those envisioned the scenarios.

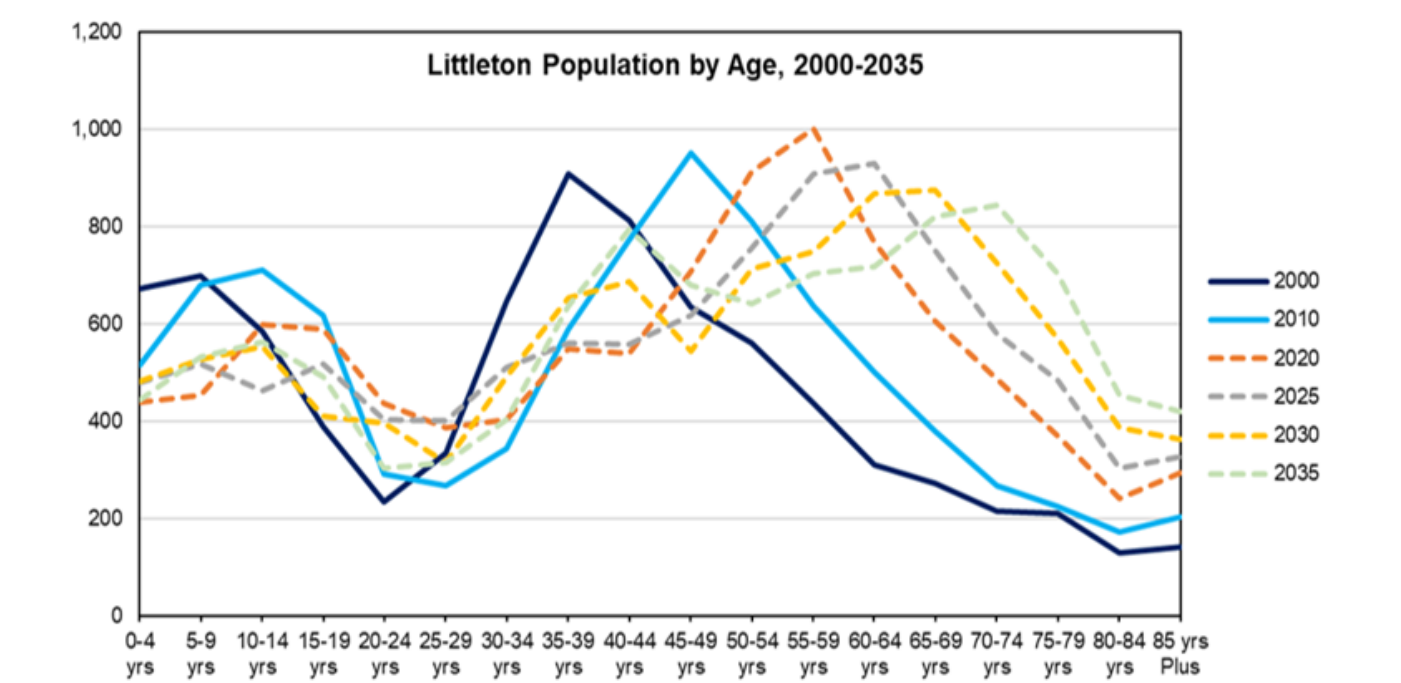
DEMOGRAPHICS

As the demographics of Littleton have changed and population has increased, the Town has made it a stated goal to increase housing diversity across income levels, dwelling types (single, multifamily, or senior housing), and household types (e.g. seniors, young professions, and families).

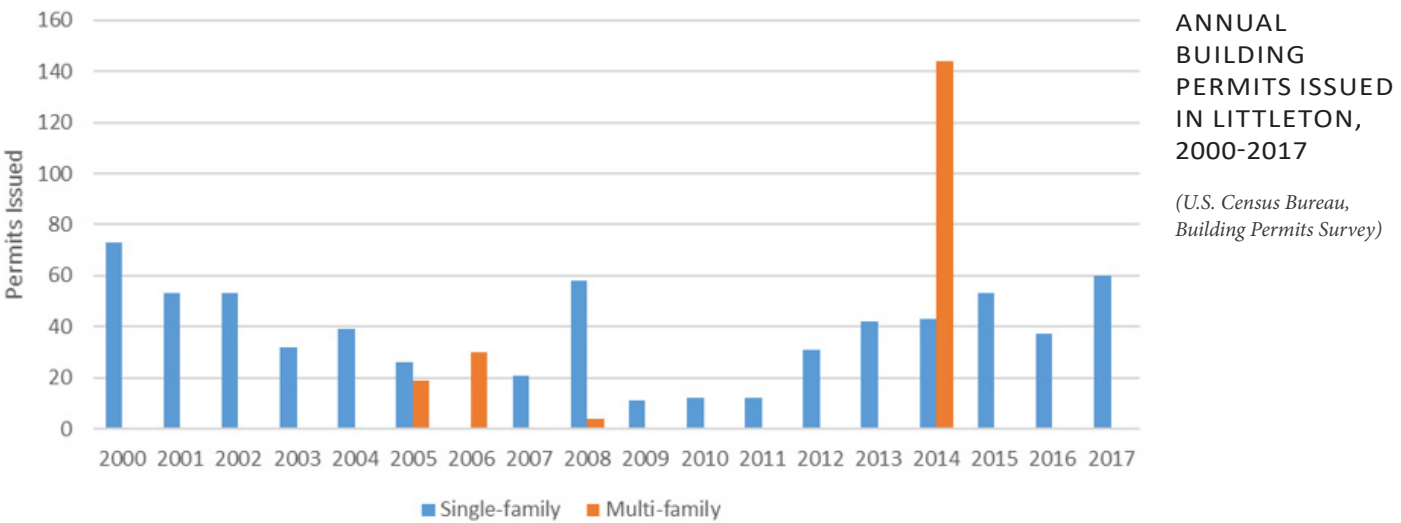
Between 1970 and 2010, the number of Littleton residents increased by nearly 40% from 6,380 people to 8,924, generating a new need for a variety of housing development types. This trend is expected to continue from 2010 to 2035. During these 25 years, the Town is expected to add 1,536 residents, which represents a relatively small number but a notable percentage increase of 15%.

The age composition of this growing population is just as important for residential planning as the actual number of residents. According to MAPC projections, the average age of the New England and Massachusetts populations are expected to increase during the next 50 years, with older residents making up a larger proportion of the population. Overall, Massachusetts has had limited natural growth, relying mostly on migration and immigration for population expansion. Littleton follows these general trends.

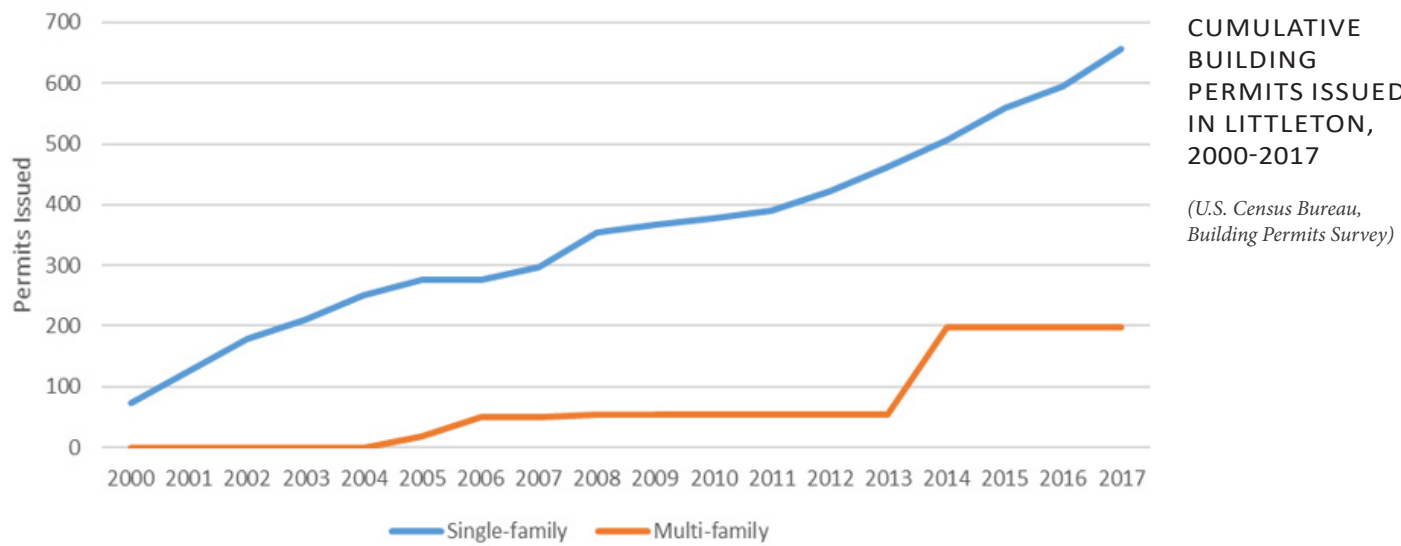
Changes in population correlate with housing demand, but the necessary other side of the coin is housing supply. In the past, Littleton has primarily issued building permits for single-family housing, which has generally served the needs of the community. The notable exception is the permitting of 144 multifamily units in 2014 at 15 Great Road.



A clear peak is seen at 35-39 years in 2000. That peak moves noticeably from left to right in the graph for every future estimate: by 2035, the largest population cohort will be those who are 70-74 years old. The second highest number of people in 2000 is 5-9 year-olds, who age to 40-44 year-olds by 2035. These population changes indicate that now and into the medium-term future, the largest share of population will be seniors and young workers.



ANNUAL BUILDING PERMITS ISSUED IN LITTLETON, 2000-2017
(U.S. Census Bureau, Building Permits Survey)



CUMULATIVE BUILDING PERMITS ISSUED IN LITTLETON, 2000-2017
(U.S. Census Bureau, Building Permits Survey)

In the 18 years examined, Littleton permitted 656 single-family homes against 197 multifamily units. This pattern is consistent with the Town’s historical pattern and those of surrounding communities. When combining the MAGIC region (Littleton’s subgroup within the Metropolitan Area Planning Council) with Littleton’s remaining border towns, the total region shows a housing stock that is approximately 83% single-family. Littleton itself stands at 93%.

The data leads to some key demand factors to guide planning for housing in the Common. First, the only population groups expected to grow between 2010 and 2035 are 20-40 and 55+. By 2035, these two groups will comprise 60% of the population of Littleton, with 55+ accounting for 45% of the overall population. These

groups share certain characteristics, including: increased likelihood of being single-person households, preference for multifamily dwellings, and desire for amenities and activities nearby.

This changing age mix, coupled with historical patterns of the types of housing permits issued and the gradual overall population growth, points to a need to reshuffle the composition of housing stock. Because of the change in age composition leading to smaller household size, it is expected that the number of households will increase at a faster rate than population. The types of housing available within Littleton, as well as their location, will therefore need to shift away from single-family houses accessible by car to smaller units that are located within walking distance of essential businesses.

RETAIL DEMAND

The residents of Littleton made clear in the Master Plan that they desire a more vibrant, lively Common that includes a greater number and variety of stores, restaurants, and cafes. To determine the level of development that the Common could realistically support, a retail gap analysis was conducted and used as a framework for further refinement of the scenarios.

Retail gap analyses use demographic, economic, and business data to estimate the value of retail and food services purchased by residents of an area. This value is then compared to what is sold by businesses in the same area, thereby providing a snapshot of the difference between a community’s supply and demand of certain goods and services. Because of personal mobility and parcel shipping, these values are rarely equal, representing the degree to which residents must leave the community to reach the types of businesses they want. This mismatch is typically greater within smaller geographies, such as towns, which do not offer the quantity or variety of businesses to meet demand.

The analysis for Littleton Common focuses on the sectors that show purchases by residents exceeding local

sales, i.e. the sectors in which retail demand exceeds retail supply. These sectors represent an opportunity to recapture spending that is already part of local household budgets.

While development in the Common is likely to induce additional spending from residents and attract consumers from outside Littleton, by not relying on either new money or new consumers, the retail gap analysis can provide a measurement of the types of businesses that existing residents are leaving town to visit, therefore creating a clearer picture of how the Common could develop to complement, and avoid directly competing with, the Point.

The results of the analysis showed that 29 out of 40 retail sectors in Littleton have a positive demand gap. However, not all of these sectors are prime candidates for a storefront in the revitalized Common. Certain sectors with either a small demand gap or a use that requires unsuitable retail space (e.g. furniture and home furnishings stores) or both were removed, refining the list of sectors down to six that would be a possible match for the Common. These businesses are of a type that would fit into the space and character of the Common, draw foot traffic, and are currently undersupplied in the Town.

RETAIL DEMAND GAP OF SELECTED SECTORS IN LITTLETON, 2016

INDUSTRY GROUP	NAICS	LITTLETON RETAIL SUPPLY GAP	% UNDER RETAILED	AVERAGE SALES / SF (2011)
RESTAURANTS / OTHER EATING PLACES	7225	\$11,631,026	-58%	\$481
CLOTHING STORES	4481	\$8,447,592	-90%	\$352
SPORTING GOODS / HOBBY / MUSICAL STORES	4511	\$5,548,913	-87%	\$292
JEWELRY, LUGGAGE & LEATHER GOODS STORES	4483	\$2,269,538	-100%	\$990
OFFICE SUPPLIES, STATIONARY & GIFT STORES	4532	\$2,415,265	-95%	\$303
DEPARTMENT STORES EXCLUDING LEASED DEPTS.	4521	\$19,912,193	-100%	\$429

(ESRI Retail MarketPlace and Newspaper Association of America/ICSC)

No aspect of this plan will require that new businesses be from the listed sectors: these sectors provide diversity in the factors that drive the economic analysis, providing informative results that may differ from actual development.

ECONOMIC ANALYSIS OF PLANNING SCENARIOS

The redeveloped properties envisioned in the revitalization scenarios will create opportunities for new businesses and residents. In order to estimate how these activities will impact Littleton’s local economy, it was necessary to analyze the economic changes that could occur with a full build-out.

It is important to note that the results that follow will ultimately depend on the choices by private landowners and developers; full redevelopment could take decades to accomplish.

It is also important to note that a sewage system is a prerequisite for the scenarios with denser zoning than today. Although individual owners could update their systems, septic systems would not be suitable for neighborhood-wide redevelopment due to the greater loads expected from residents and businesses, especially any cafes or restaurants.

The work for this analysis included three main components:

- 1. Filling the spaces created in the revitalization scenarios with housing units and businesses and attaching dollar values to the activities taking place in the new spaces;
- 2. Estimating new economic activity; and
- 3. Providing context for the results of the analysis.

Four scenarios with different square footages and uses were created to fill the redeveloped spaces depending on the zoning changes envisioned for each scenario. The total amount of space and the characteristics of each space led to the allocation of the square footage among three different uses: retail, office, and residential.

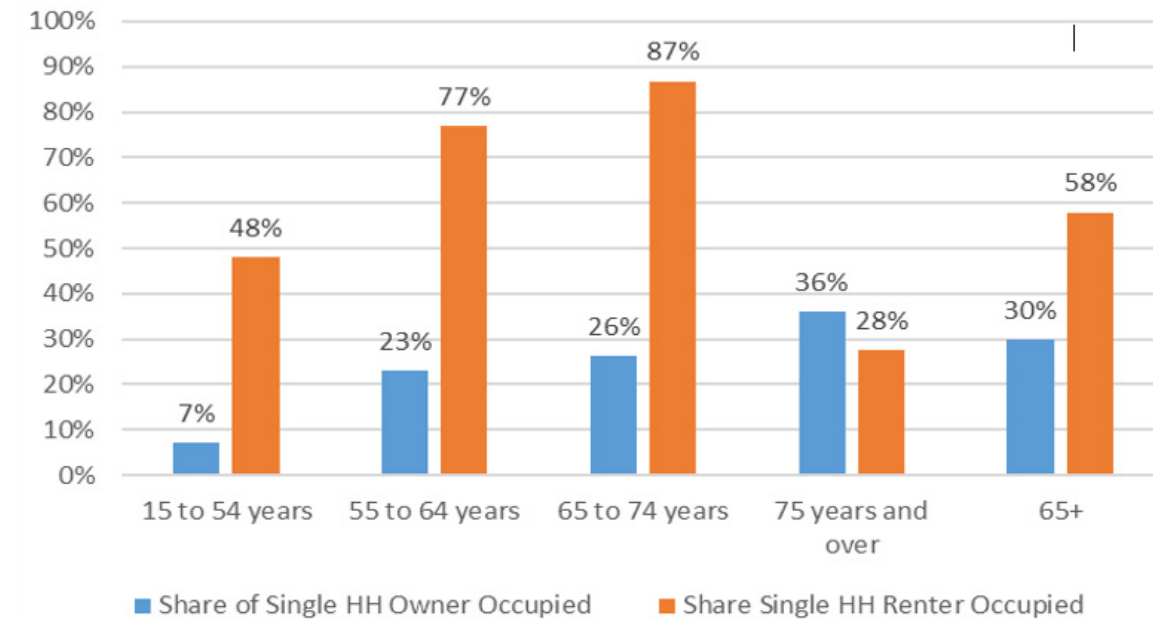
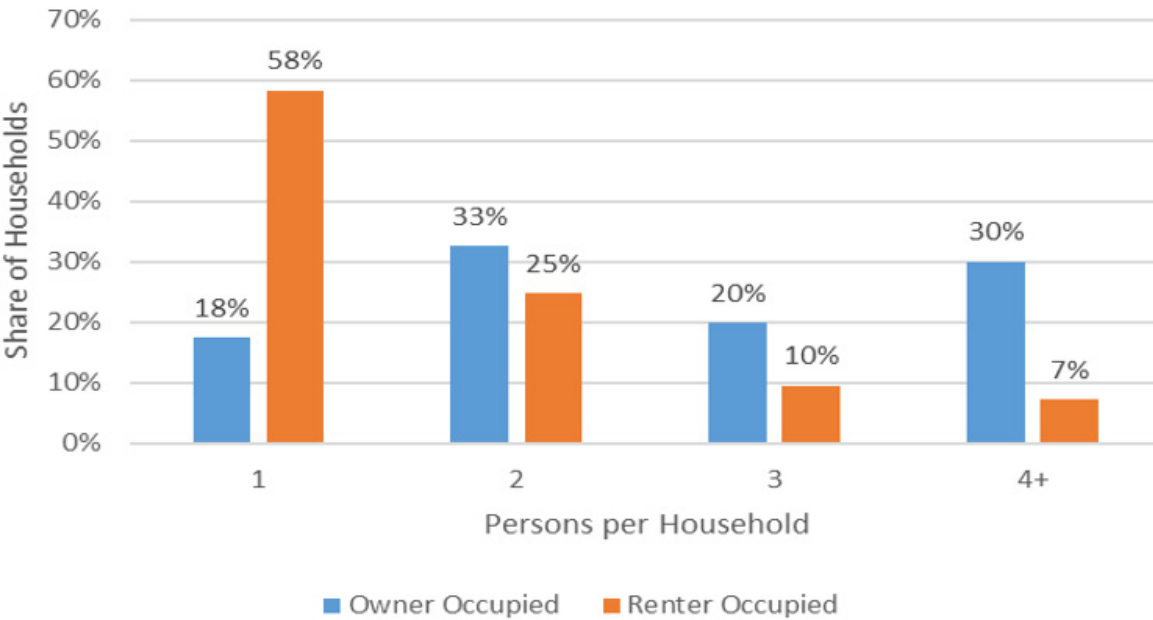
Based on the size of the building and the required square footage for different business types, as well as the average square feet per worker, income per worker, and revenues per worker, the commercial spaces were filled with appropriate business types. For residential properties, average household size by head of household was used for calculations.

Data on household traits were collected to evaluate the demand for housing, particularly the multiunit housing imagined for the Common. Because redeveloped properties are likely to be mixed use, the residential units within them are likely to be rentals. However, data on owner-occupied housing was also collected and analyzed to provide information on the demand for any condominiums that may be built.

Among all factors, household size is a distinguishing feature between renter-occupied and owner-occupied dwellings. More than half of all renter-occupied dwellings are single-person households; 83 percent are two or fewer people. Conversely, half of all owner-occupied dwellings are households with three or more people. The average household size in Littleton is 2.83 for owner-occupied and 1.67 per renter-occupied dwelling, resulting in over one additional person per household between the ownership types.

INDUSTRY	REVENUE	INCOME	SF / WORKER
RETAIL	\$76,415	\$33,749	500
FOOD SERVICES	\$57,968	\$18,286	150
PROFESSIONAL AND TECHNICAL	\$150,371	\$120,241	400

SF PER WORKER BY INDUSTRY
(Revenue from Regional Economic Models, Inc. Income from MA Executive Office of Labor and Workforce Development. Square feet from authors’ research (see methodology))



On average, renter-occupied dwellings have smaller households. That pattern also holds when examined across age. The share of single-person households within each age and tenure category. For example, the figure shows that 87% of households that rent and are headed by someone 65-74 years old are single-person households. Together, the graphs imply that a single person household will likely live in a rented dwelling, which is most likely for residents between the ages of 55

and 74. Other data shows that one-third of households headed by someone over 55 are a single person

The data described in this section provides the necessary information to measure the new economic activity created by the redeveloped scenarios. The table on the following page combines the data with the assessed retail supply gaps and average sales per square foot to show the estimated number of square feet of retail space needed to satisfy Littleton's existing demand gap.

RETAIL DEMAND GAP IN LITTLETON AND ESTIMATED SF TO MEET DEMAND

INDUSTRY GROUP	LITTLETON RETAIL DEMAND GAP (\$M)	AVERAGE SALES / SF (2011)	ESTIMATED SF TO MEET DEMAND
RESTAURANTS / OTHER EATING PLACES	\$11.6	\$481	24,181
CLOTHING STORES	\$8.4	\$352	23,999
SPORTING GOODS / HOBBY / MUSICAL STORES	\$5.5	\$292	18,981
JEWELRY, LUGGAGE & LEATHER GOODS STORES	\$2.3	\$990	2,292
OFFICE SUPPLIES, STATIONARY & GIFT STORES	\$2.4	\$303	7,971
DEPARTMENT STORES EXCLUDING LEASED DEPTS.	\$19.9	\$429	46,415

(ESRI Retail MarketPlace and Newspaper Association of America/ICSC)

Each of the revitalization scenarios includes estimates of new square footage for retail, office, and residential. For the purposes of the economic analysis, the retail space was split in half between retail stores and food services. The retail space was allocated among the sectors shown. Professional, technical, and scientific services were used as the appropriate sectors for office space. Furthermore, the residential square footage was converted to units at an average size of 1,100 sq. ft. per unit. For context, the residential space was evaluated as both renter- and owner-occupied housing.

Using the industry distribution assumed for this study, 123,840 sq. ft. of retail space will be needed to fully close the demand gaps identified in Table 5-6. All

but Scenario 4 propose less net new square footage, indicating that they can draw on a relatively available pool of spending. In order to fully fill the spaces in Scenario 4, the Common will have to induce sufficient new spending among residents and/or new visitation from nonresidents to fill an additional 49,000 sf. The relatively small number of new residents expected in the Common under the revitalization scenarios are too few to meaningfully close this gap.

Just as the net new retail square footage of the revitalization scenarios requires a certain amount of demand to support the space, so too does the new residential square footage.

	SCENARIO 1 & 2	SCENARIO 3	SCENARIO 4
RETAIL NSF	14,265	36,438	86,513
FOOD SERVICES NSF	14,265	36,438	86,513
OFFICE NSF	23,570	47,725	136,800
RESIDENTIAL NSF	0	210,900	411,640
RESIDENTIAL UNITS (NET)	0	193	374
REDEVELOPED PROPERTIES	6	23	28

NET SQUARE FEET BY USE TYPE OF REVITALIZATION SCENARIOS

RETAIL USE MIX OF REDEVELOPED PROPERTIES

INDUSTRY GROUP	SCENARIO 1 & 2	SCENARIO 3	SCENARIO 4	
NET NEW CONSTRUCTION RETAIL NSF	28,530	72,875	173,025	
RESTAURANTS / OTHER EATING PLACES	14,265	24,181	24,181	24,585
CLOTHING STORES	7,133	23,999	23,999	12,300
SPORTING GOODS / HOBBY / MUSICAL STORES	7,133	18,981	18,981	12,300
JEWELRY, LUGGAGE & LEATHER GOODS STORES	-	2,292	2,292	-
OFFICE SUPPLIES, STATIONARY & GIFT STORES	-	3,421	7,971	-
DEPARTMENT STORES EXCLUDING LEASED DEPTS.	-	-	46,415	-

(ESRI Retail MarketPlace and Newspaper Association of America/ICSC)

Using an average of 1,100 sf per unit, the scenarios range from 180 to 374 new units in the Common. The number of people needed to fill the units depends on whether the new multifamily housing is rental or condos. On the low end, only 301 people would be needed, although on the higher end 1,059 people could be required to fill the spaces.

From 2020 onward, Littleton is expected to gain approximately 900 residents over 65 years old and 80 residents between 20 and 40 years old. These cohorts would be the prime candidates for small rental units within walking distance to amenities.

The maximum number of residents needed to fill renter-occupied units will be closer to 625 than 1,059. Therefore, there appears to be sufficient long-term demand for the new spaces.

There are currently no data sets available that measure the unmet demand for office space in a region. Therefore, it cannot definitively be determined whether the new office space envisioned by the scenarios exceeds or falls short of demand for these spaces. Under full build-out, the scenarios will provide space for an additional 59 to 342 office workers.

	SCENARIO 1 & 2	SCENARIO 3	SCENARIO 4
TOTAL RESIDENTIAL UNITS	-	193	374
RENTAL (APARTMENTS)			
AVG. HOUSEHOLD SIZE	1.67	1.67	1.67
IMPLIED POP. GROWTH	-	322	625
% GROWTH	0.0%	3.4%	6.6%
OWN (CONDOS)			
AVG. HOUSEHOLD SIZE	2.83	2.83	2.83
IMPLIED POP. GROWTH	-	546	1,059
% GROWTH	0.0%	5.7%	11.1%

POPULATION GROWTH
IMPLIED BY FULL BUILD
OUT OF REVITALIZATION
SCENARIOS

(U.S. Census American Community Survey
5-year data, 2012-2016)

	SCENARIO 1 & 2	SCENARIO 3	SCENARIO 4
OFFICE NSF	23,570	47,725	136,800
SF / WORKER	400	400	400
# OF WORKERS	59	119	343

NET NEW OFFICE WORKERS
IMPLIED BY FULL BUILD
OUT OF REVITALIZATION
SCENARIOS

However, office space can be considered a broad use. There is no reason that these spaces could not be filled by any manner of non-retail commercial activity. While some number of sole proprietors such as lawyers, accountants, and other professionals could use these spaces for their practices, other uses are also possible especially with the installation of sewerage. Examples of tenant types include medical labs and doctors’ offices; business support services and back office services like IT,

legal, accounting, or customer service; and office space for small businesses like startups and other early phase businesses.

Ultimately, what types of tenants fill these spaces will depend on market demand, the flexibility of building owners in customizing the interiors or allowing leasehold improvements, and finally the Town’s zoning and other bylaws to determine which use types will be allowed in the Common area.

	SCENARIO 1 & 2	SCENARIO 3	SCENARIO 4
WORKERS			
RETAIL	29	73	173
FOOD SERVICES	95	243	577
PROFESSIONAL AND TECHNICAL	59	119	342
TOTAL	183	435	1,092
REVENUES			
RETAIL	\$4.6	\$17.3	\$50.6
FOOD SERVICES	\$6.9	\$11.6	\$23.3
PROFESSIONAL AND TECHNICAL	\$8.9	\$17.9	\$51.4
RESIDENTIAL RENTS	\$0.0	\$0.2	\$0.4
TOTAL	\$20.3	\$46.9	\$125.3
WAGES			
RETAIL	\$1.0	\$2.5	\$5.8
FOOD SERVICES	\$1.7	\$4.4	\$10.5
PROFESSIONAL AND TECHNICAL	\$7.1	\$14.3	\$41.1
TOTAL	\$9.8	\$21.2	\$57.5
EST. MEALS TAX	\$0.05	\$0.09	\$0.17

SUMMARY ECONOMIC
ACTIVITY
When the preceding data on space, sales, and worker-specific metrics are combined, it is possible to estimate the likely annual economic activity that would take place within a fully built out Common under the different revitalization scenarios. Rents were estimated using the system average rents from the Assessor’s Office of \$1,000 per unit.

The new incomes generated in the redeveloped buildings will create higher assessments on the property. These assessments are based on the annual income and expenses report that commercial property owners file with the assessor. It should be noted that in addition to redeveloped buildings, improved infrastructure (i.e. sewer, stormwater) will contribute to higher assessments. As a result, the higher assessments are reactive to market

changes, and are not proactive with improvements in market conditions. In other words, until property owners have the opportunity to realize higher incomes, their assessments will not change. In this case, as elsewhere, full build-out and normal occupation is assumed. Rents, vacancy rates, and expense and reserve ratios were all taken from the Littleton Assessor’s Office assessment tool.

for essential goods and services. Young families may seek housing within the mixed-use Common to be within walking distance to playgrounds and family-based amenities such as groceries and a library. While these preferences may stem from different priorities, the end result is the same: demand for housing within a mixed-use, walkable village.

assumes the most extensive changes in zoning compared to today, the activity in the Common could create up to 1,000 jobs, \$125 million in business revenues, and \$57 million in wages.

New income for property owners also creates income for the Town through property tax assessments. Again, under Scenario 4, the Town could gain \$900,000 in new property tax revenue which would be supplemented by \$170,000 in meals taxes

ESTIMATED INCREMENTAL TAX REVENUES FROM REVITALIZATION

INDUSTRY GROUP	SCENARIO 1 & 2	SCENARIO 3	SCENARIO 4
TOTAL ASSESSMENT ON REDEVELOPED BUILDINGS	\$183,983	\$462,686	\$1,172,758
ASSESSMENT ON EXISTING BUILDINGS	\$39,976	\$183,755	\$269,072
INCREMENTAL TAX REVENUES	\$144,007	\$278,930	\$903,686

(Littleton Assessor’s Office)

CONCLUSIONS

Using the data available, the assessment of the current economic and demographic characteristics of Littleton illuminates population growth and change, the patterns of housing, and retail supply and demand. Using existing conditions as context for what the market will bear, the analysis shows the potential for how the spaces created in the design phase can be filled with businesses and residents.

A variety of retail and food services sectors that are locally undersupplied were coupled with professional and technical services to fill the commercial space. Based on housing stock and demographic trends, the residential square footage for the purpose of this study was converted into average units of 1,100 sq. ft.

The economic analysis shows that in all but Scenario 4, the existing retail demand gap is greater than that needed to fully fill the retail spaces. Sized in this way, the businesses in the Common could thrive by relying only

on Littleton residents relocating some of their existing spending. To fully fill the retail spaces in Scenario 4, the Common area would need to induce new spending by Littleton residents or attract new visitors to the area.

Existing data does not exist to assess the degree of unmet demand for office or professional space in the Common, although feedback from the Town suggested that this use was essential in the revitalization scenarios. Depending on the scenario, the designs create room for 59 to 342 office workers.

As the population of Littleton is expected to gradually grow and age, Littleton’s housing mix will need to change to meet the varying priorities of the new population mix. For instance, young families may be looking for affordable, two- to three-bedroom housing units while seniors may seek studio or one-bedroom units. However, both age groups have explicitly expressed interest in being located near or adjacent to village-style amenities. For example, seniors will be drawn to mixed-use housing adjacent to amenities that will reduce both their need to maintain a large yard and home and drive to destinations

Young professional and seniors will likely want fewer bedrooms while young families will likely need more space. Similarly, young residents (single or families) often prefer renting as they are more likely to move for work or to more spacious housing and do not want the hassle of buying, maintaining, and selling a home. On the other hand, seniors who are downsizing may prefer ownership as it gives them more predictable (though sometimes higher) expenses while living with a fixed income. In general, the lowest risk would be to build primary rental units with some 55+ condo options available.

Furthermore, co-locating residences and businesses in the Common will create a self-reinforcing pattern that will help to reinvigorate the Common. Those living in the Common will provide the critical initial consumer base for the businesses there while more variety among the business will attract more residents and consumers. In this way, both housing and retail are required for successful revitalization. This concentration of multiunit housing and commercial establishments is not dissimilar to the New England village centers of the past which relied on both an internal flow and a connection to the rest of the townspeople.

The new economic activity estimated to occur in each redevelopment scenario will create jobs, revenues, and income in the Common. Under Scenario 4, which

Scenario 3, which better represented the amount of physical change with which residents are comfortable, would generate 435 new jobs, \$47 million in business revenues, and \$21 million in wages. This scenario could likewise contribute an additional annual \$278,930 in property tax revenue and \$90,000 in meals tax, for a total of approximately \$369,000 in annual taxes for the Town.

As previously noted, the economic analysis focused on the test sites representing the highest potential for redevelopment across the Common, not a complete rebuilding of the entire area. The analysis also assumes current rents, vacancy rates, and land values, and therefore denotes a conservative change in tax revenues.

Ultimately, if the Town changes its zoning policies, implements sewerage, and succeeds in revitalizing the Common, the number of parcels that have high potential for redevelopment will grow, leading to impacts that could be higher than those projected here. However, public engagement indicated that character, rather than economic activity, is a stronger factor when deciding upon the preferred scenario. The results of the analysis suggest that, just as stakeholders prefer, mixed-use housing provides both a measure of economic gain and diversification of housing, while the market also has the necessary support for the retail and food and beverage options that are desired within the Common.

REDEVELOPMENT POTENTIAL

The scenario planning process, property owner and key stakeholder feedback, and results of the economic analysis demonstrated that there is both the interest and sufficient economic demand to revitalize Littleton Common. Furthermore, the scale and scope of development within the Common can certainly be achieved via the creation of appropriate design and regulatory tools.

PREFERRED DEVELOPMENT SCENARIO

Although not one development scenario will exactly represent what all community members envision for the Common, selecting a scenario as a model both establishes the upper limit of acceptable change and demonstrates the ways in which existing zoning may be preventing desirable development. This selection thus creates a catalyst for an appropriate range of regulatory changes.

It was determined that Scenario 03 best represents the preferred vision for the Common based on collected stakeholder feedback. This scenario best balances the community’s desire for walkability and new business and housing uses that reflect the Town character with the necessary increases in height and density that would make an owner or developer want to provide these uses.

Unlike Scenario 04, the projected amount of viable redevelopment does not exceed the conservative market demand gaps outlined in the Economic Impact Analysis. In other words, it is estimated that the market would reasonably accommodate future development in Scenario 03.

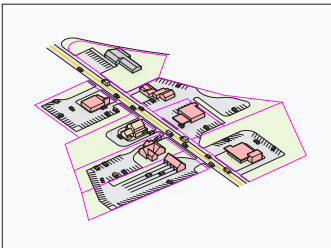
In summary, this Scenario would entail making the following changes to the Town’s base zoning code:

- Decrease in mandatory parking spot requirements;
- Restriction of parking to the rear or side of buildings;
- Increase in allowable building height from three to four stories, where commercial use is located on the ground floor and fronts on the street; and
- Decrease in required building setbacks and establishment of a maximum setback.

Together, these changes alone can create up to a 50% increase in density and require a developer to more thoughtfully place their buildings on the property to enliven the street. Pedestrian scale and mixed uses (housing, restaurants, retail) is prioritized and reinforced. If fully developed, this Scenario has the potential to generate 435 new jobs, \$47 million in business revenues, \$21 million in wages, and a total of approximately \$462,686 in annual meal and property taxes for the Town.

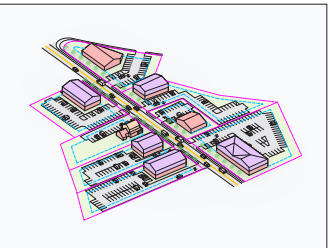
While some residents expressed concern over the scale and height of new developments allowed in Scenario 03, it is important to note that creating a walkable and lively Common requires a critical mass of density, retail frontage, and pedestrian proximity.

It is also important to note that redevelopment may occur over an extended period of time, and that the maximum amount of redevelopment/development illustrated within the preferred scenario illustrates may not occur.



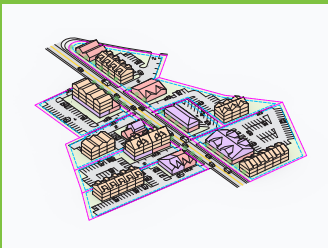
Existing Condition

- Currently:
- Excessive parking areas
 - Lack of mixed-use programs
 - Not enough density to sustain street activity
 - Underutilized parcels (e.g. banks, etc)
 - Vacant parcels and/or buildings
 - No sidewalk at northern side of Great Rd



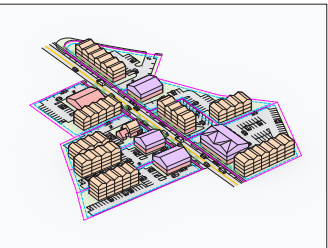
Scenario 01/02

- Existing Zoning
- Scenario 02 (with Sewering) may allow for Higher Diversity of Business Types



Scenario 03 (Selected Scenario)

- Some Increase in:
- Allowed Building Height
 - Allowed Density
- Some Parking Decrease
- Up to **4 Stories** Allowed*
(*4 only if commercial at ground floor)
- Up to **0.9 FAR** Allowed
- Setback Adjustments:
- 10' from Front (15' Max)
 - 5-10' from Side / Rear
- Some Parking Relief:
- 4.0 spaces / 1000 sf of leasable retail
 - 3.0 spaces / 1000 sf of leasable office
 - 1.25 spaces / dwelling unit
- Parking Placement:
- Side and/or Rear Only
- Impervious Surface:
- 80% Max



Scenario 04

- Some Increase in:
- Allowed Building Height
- Additional Increase in:
- Allowed Density
- Additional Parking Decrease
- Up to **4 Stories** Allowed
- Up to **1.2 FAR** Allowed
- Setback Adjustments:
- 10' from Front (15' Max)
 - 5-10' from Side / Rear
- Greater Parking Relief:
- 2.0 spaces / 1000 sf of leasable retail
 - 2.0 spaces / 1000 sf of leasable office
 - 1.0 spaces / dwelling unit
- Parking Placement:
- Side and/or Rear Only
- Impervious Surface:
- 80% Max

SCALE AND DENSITY

The revitalization scenario planning exercise allowed stakeholders to take a deeper dive into the possibilities for redevelopment and evaluate the desired scale and density of new buildings.

Density describes the level and intensity of development, and in addition to signifying a certain level of character change, is an important characteristic in the relationship between land use and transportation. In more urban communities, higher density allows for and supports successful transit service; in a community such as Littleton, increased density effectively decreases the distance between the places where people live, work, eat, and play, making it easier for residents to reach their desired location without a car.

Grounded in the results of the economic analysis, stakeholders were able to select a level of development that they felt was appropriate for a rural-suburban, yet growing, community such as Littleton. The current scale of the Common is auto-dependent, with small-scale buildings separated by parking lots and frequent curb cuts. When combined with the physical condition of the sidewalks linking the businesses, the pedestrian experience is difficult and unpleasant, making walkability all but nonexistent.

The expressed support for Scenario 03 indicates a level of density that creates a walkable town center while respecting and integrating with historic buildings that are not likely to redevelop.

MIXED USES

The type of development desired by the community consists of mixed uses in which housing, office spaces, retail, and restaurants are all offered in close proximity or within the same building.

Mixed-use development is beneficial and attractive to a range of demographics, especially aging populations and young workers who each prefer to live near amenities. Predominantly, the desired development scheme, as shown in the preferred alternative, is a “home above the shop” layout where residential uses support retail and restaurant establishments, and vice-versa.

A compelling argument in favor of mixed-use development is the increase in property tax revenue. According to a study conducted by Smart Growth America, tax revenue can increase up to ten times, on average, with the introduction of mixed-use development to a community.

As a community becomes denser, municipalities gain more tax revenue per acre than before development. Additionally, studies have shown that there is an association between the integration of mixed-age centers and businesses and higher levels of health and well-being for aging populations.

Other benefits relative to the Common include:

- Creation of a sense of community and a sense of place;



Mixed-use buildings can follow traditional New England “home above the shop” models or have a more contemporary form, as illustrated above.



- Protection of outlying rural areas and environmentally sensitive resources by steering development toward established areas;
- Encouragement of pedestrian & bicycle travel versus auto dependency, roadway congestion, and air pollution; and
- Allowance of more housing opportunities and choices.

Mixed uses can be offered as permanent spaces as well as programming within a specific space, so long as zoning and regulation allow for it.

For instance, residents and staff of the Providence Mount St. Vincent home in Seattle, WA share the 300,000 square-foot facility with up to 125 preschool children five days a week during an experimental Intergenerational Learning Center. This type of housing and educational mixed-use is designed to “counterbalance the loneliness and boredom that so often characterizes life in a nursing facility.”

Given Littleton’s expressed desire for a community center, promoting mixed-use buildings in the Common could provide an opportunity to foster an inclusive programmatic meeting space that remains accessible to an aging population.



EXAMPLES OF COMPARABLE SCALE AND DENSITY

HOUSING

The results of the economic impact analysis included a demographics assessment showing a distinct demand in future housing for persons aged 20-40 (single residents and young families), as well as the 55+ age group. The assessment indicated that these populations share a preference for multifamily dwellings and a desire for amenities and activities nearby.

Given that 93% of Littleton’s housing stock is comprised of detached, single-family homes that are largely located in low-density, residential neighborhoods, the future housing stock will need to provide substantially more variety.

A mixed-use development scheme in the Common allows for a degree of flexibility in lot size and layout that meet the Town’s future housing needs. For instance, multi-family units that accommodate young professionals and growing families can be constructed on second levels where multi-story and/or second story living is suitable.

Populations with accessibility concerns could be located within first-floor units located away from the street front, potentially facing out toward landscaped open spaces. For those who desire purely residential buildings such as townhouses, a mixed-use Town center provides proximity to amenities without needing to live in “stacked” residential units above commercial or retail spaces.

With Littleton’s aging population, the data suggests a growing need for one-person rentable housing units.

RETAIL/RESTAURANT

The “stacked” mixed-use development scheme is dependent upon a mix of commercial development that complements the type of residential space developed above.

For instance, where over-55/aging housing is constructed, the type of commercial space provided

on the first floor should accommodate the needs and interests of this population. The most successful commercial establishments accommodating this population are restaurants and cafes, senior/community recreation centers, libraries and/or bookstores, theatres, smaller-scale food markets, and local gift/clothing retail stores. These are businesses in which said population can easily walk to and frequent, since they are associated with the needs of daily living, socialization, and entertainment.

Younger residents and families would support similar establishments as the aging population, yet with a slant towards varied entertainment options such as adjacent playgrounds, dog walks/parks, children’s recreational facilities (e.g., tumbling/gymnastic centers and dance studios), teen centers, and bookstores with children’s rooms. Additionally, restaurants that sell liquor, bars, and wine shops are frequented establishments by younger residents.

OFFICE

The initial scenario planning and economic impact analysis suggested that from a market perspective, the density of Scenario 03 is more likely to attract retail use rather than office space. However, in order to accommodate future market conditions and the expressed desires of Littleton residents, the selected scenario includes approximately 20% retail, 15% office, and 65% residential for analysis. This quantity of office space represents a feasible outcome under current market conditions and is supported by the idea that Littleton professionals who currently rent small office spaces in nearby towns would be willing to relocate if the opportunity arose.

The amount and type of office provided in the scenario is best suited to small businesses or consulting services. A co-working space, in which a company provides a flexible, shared workplace for self-employed, work-at-home, part-time, or remote workers, could be an innovative way to meet both market conditions and the

office space interests of Littleton residents (and those of surrounding towns).

OPEN SPACES

A distinct concern from stakeholders raised during the planning scenario process was that there are not currently enough open or green spaces throughout the Littleton Common area. Although the center of the Common is comprised of two adjacent triangle areas of greenspace, a common statement was that these areas are rarely used due to an inability for pedestrians to safely access them from King Street or Great Road during heavy traffic times.

Further, the Common is currently a place dominated by vehicle traffic, and therefore walking in and around the area is not desired. Family members with children also expressed a need to include both passive and active recreational areas such as parks, playgrounds, and seating areas throughout the area – not just within the Common Green – to bring their children.

The Common Green itself has significant potential for activation in the form of seasonal and reoccurring public events such as agricultural and cultural festivals, arts and crafts fairs, and community events such as outdoor concerts, and plays. Traffic calming measures, street reconfigurations, and event detours will be required to create a safe environment for public enjoyment.



NEWBURYPORT, MASSACHUSETTS



THE PINEHILLS VILLAGE GREEN, PLYMOUTH, MASSACHUSETTS



Green Infrastructure is both:

1. A network of natural lands across the landscape - forests, wetlands, stream corridors, grasslands - that work together as a whole to provide ecological benefits; and

2. Stormwater management systems that are cost-effective, sustainable, environmentally friendly, and maintain the local hydrology.

SUSTAINABILITY AND CLIMATE RESILIENCE

There is exciting potential for the Common to become a vital, sustainable, and climate resilient village area. Recommendations offered in Section 7: Moving from Planning to Action will provide opportunities for redevelopment and new development within the Common to include innovative measures for addressing increased precipitation and flooding, and increased temperatures.

Littleton Common, the Town, and its surrounding neighbors are specifically vulnerable to the factors listed at right.

1. Decreased habitability of key tree species, including:
 - » Red Maple,
 - » Eastern White Pine,
 - » Eastern Hemlock,
 - » Northern Red Oak,
 - » Paper Birch,
 - » Yellow Birch, and
 - » Balsam Fir.
2. Reduced water quantity and degraded water quality resulting in less river / stream will flow and shallow surface waters causing conditions such as oxygen depletion and higher water temperatures that adversely affect aquatic species.
3. Intense rainfall resulting in increased surface water turbidity and a higher concentration of storm water

pollution entering into waterbodies, which will cause eutrophication and fish kills.

4. Net depleted watershed sub-basins indicating that groundwater resources are being withdrawn at a rate faster than water is being replenished, which can result in wells drying, reductions in waterways and water bodies, and deterioration of drinking water quality.
5. Heat island effect (i.e. exceeding the air temperature during a high heat day).

Residents, property owners, and municipal officials from the Town of Littleton participated in the development of the Minuteman Advisory Group on Interlocal Coordination (MAGIC) Climate Change Resilience Plan and offered feedback on what action strategies should be included regionally, and locally.

The primary objectives offered that are relevant to revitalization of the Common include the following:

- Protect and restore natural resources that protect properties from climate impacts (e.g., wetlands, forested and open spaces);
- Use green infrastructure (e.g., natural landscapes and stormwater management) to retain and absorb flood waters;
- Expand access to public transportation options and schedules, as a means to encourage less car use and reduce greenhouse gases; and
- Regulation and zoning reform that takes climate impacts into account (e.g., increased setback areas to protect wetlands).

Specific actions related to achieving these objectives are included in Section 7: Moving from Planning to Action.

MOVING FROM PLANNING TO ACTION

This section of the Road Map lays out a course of action for the Town and stakeholders (property owners, developers, and residents) to ensure that the vision for the Common is fulfilled; a vibrant, walkable, sustainable Common. Strategies included herein aim to strike a balance between protecting the unique character of the Town’s rich history and agricultural status while creating opportunities for expanding public uses and economic growth.

There are five primary categories of actions to implement this Road Map, as follows:

- 1. Transportation: capital investment to support physical improvements to roadways and streetscapes to create a walkable Common area;
- 2. Green Infrastructure: the use of natural landscapes and stormwater management practices that treat polluted rainwater, absorb flood waters, and provide essential green and open spaces;
- 3. Economic Incentives: development of incentives and financial assistance to encourage and stimulate innovative development;
- 4. Zoning and Regulation: adoption of new and/or revised regulatory and policy measures to allow for innovative green infrastructure and development projects; and
- 5. Public Outreach: promotion of the vision for the Common through volunteerism, guided by the MPIC, to advocate implementation of the Road Map after adoption, continued public outreach.

These actions will be best achieved in a collaborative effort between residents, municipal officials, and private/non-profit stakeholders. An explanation of each action category and key recommendations is included below.

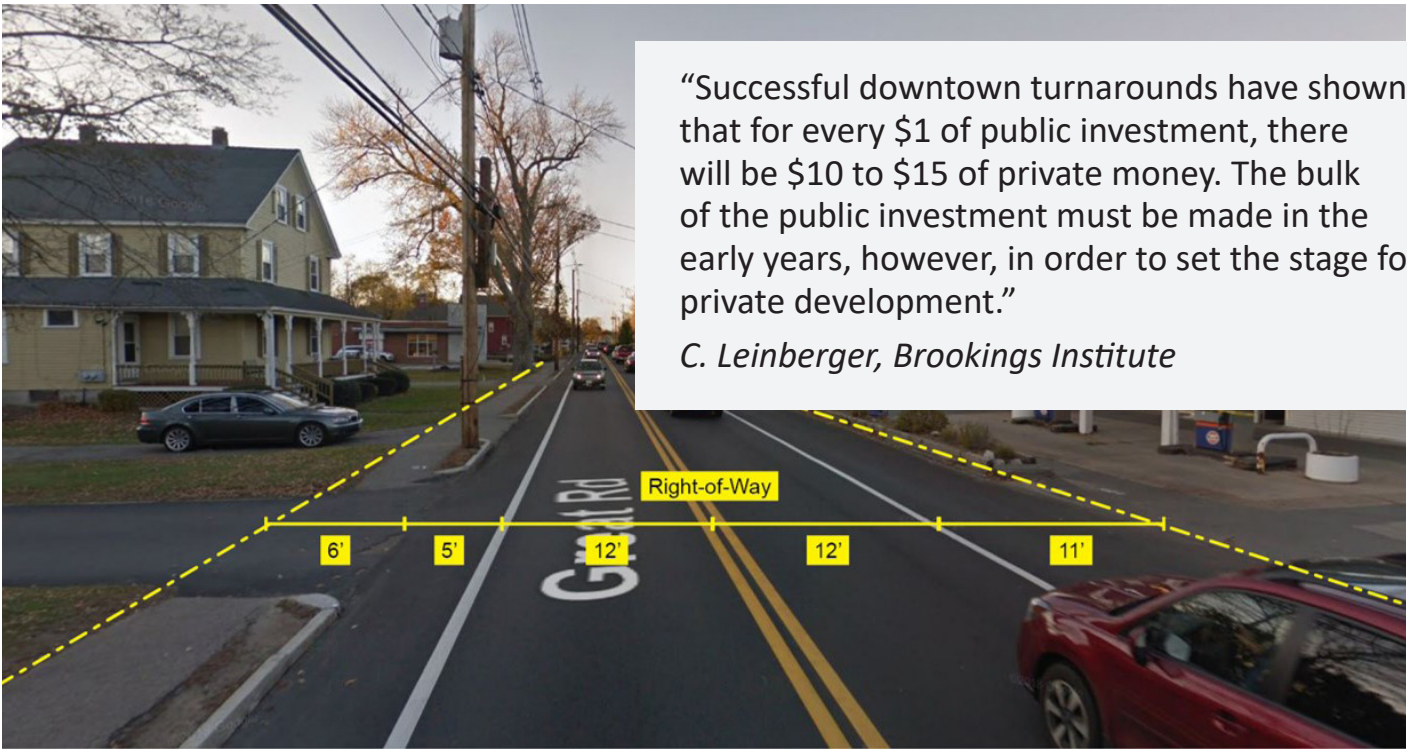
The Action Matrix included in Appendix A provides greater specificity with respect to recommended redevelopment measures and is designed to serve as a stand-alone reference document for the town to track progress.

TRANSPORTATION

There are numerous actions that the Town should implement to create a sustainable, revitalized Village Common through the implementation of key capital investment projects. Improved transportation circulation and upgraded infrastructure will entice developers and encourage private property owners to make their own improvements.

Specifically, it is recommended that the Town change the configuration of connector streets and intersections, and implement traffic calming measures such as crosswalks, street signals and “bump-outs” with landscaping to reduce vehicle speeds and create a proper pedestrian environment.

Additionally, the Town should incorporate a “complete streets” type of streetscape improvements into transportation projects such as the installation of bike lanes, sidewalk improvements, and improved stormwater management.



“Successful downtown turnarounds have shown that for every \$1 of public investment, there will be \$10 to \$15 of private money. The bulk of the public investment must be made in the early years, however, in order to set the stage for private development.”

C. Leinberger, Brookings Institute

INFRASTRUCTURE IMPROVEMENTS / TRAFFIC-CALMING

To fully realize a revitalized Common requires not only investment on private property, but also a new vision for the public realm. To successfully stage a pedestrian-friendly environment within the Common, the Town should consider pursuing infrastructure improvements and implementing a traffic-calming strategy.

Great Road and King Street are designated as state highways, owned and maintained by Mass DOT. Therefore, roadway and right-of-way improvements measures along these roadways will must be addressed via partnerships with Mass DOT, whether public-public (the Town with Mass DOT) or private-public (property owners or developers with Mass DOT).

In this case, streetscape improvements could be achieved on a tiered or phased basis where the Town first peruses funding to implement key improvements such as traffic calming and pedestrian safety measures. Partnerships with private property owners and/or developers could occur secondarily to allow for alternative transportation and green infrastructure. Topics to be addressed include the

following (as described in the Action Matrix):

- Stay ahead of future transportation needs and plan for how to pay for improvements in the face of relatively stagnate state funding apportionments through the development of a Transportation Advisory Council working group to explore modern transportation technologies and implement critical investigations, such as:
 - » Monitor traffic volumes and crash occurrences, and advocate for geometric and signalization improvements to stay ahead of safety and congestion issues;
 - » Gather input from stakeholders (inside and outside of municipal government), and make recommendations publicly available for their comment and feedback;
 - » Work with the Metropolitan Planning Organization and MAPC to study, test, and pilot emerging technologies;
 - » Offer consumer and businesses incentives to use or purchase Electric Vehicles (EVs) and/or install charging stations; and

- » Engage with high school and community college students to get them thinking about potential technology projects.
- Determine Mass DOT’s desire to make changes to the transportation network around the Common on Great Road and King Street, and work together to implement changes (consider assuming ownership and control of sections of Route 2A, Route 119, and Route 110 as a last resort).
- Update the 2009 Littleton Transportation Planning and Traffic Study to include a thorough evaluation of Common area traffic and circulation, particularly known problem areas, and recommend geometric changes and signalization improvements. These recommendations should be included in the updated Study and incorporated into this Road Map for future reference (via an included appendix).
- Establish a system that will “connect the dots” in Town (e.g., the Point, schools, playgrounds and fields, and the commuter rail station) to the Common and ensure a variety of safe and universally accessible choices between these points such as widened/improved sidewalks, bicycle-lanes/trails, and pedestrian trails.
- Create better public transit connections within Littleton, especially to and from the commuter rail station, which is difficult to get to without a personal vehicle.

PEDESTRIAN-FRIENDLY ALTERNATIVES

Encouraging the use of alternatives to single-passenger vehicles results in both traffic reduction and environmental benefits. Throughout the course of the development of this Road Map, many stakeholders expressed great concern regarding extensive traffic on Great Road and King Street in the form of existing high-vehicular use of these roads as “throughways,”

and the potential for additional traffic and congestion if development occurs.

These concerns are valid, yet existing conditions are not permanent, and future development does not equate higher traffic. In fact, studies have shown that revitalized areas have a higher likelihood of resulting in calmed traffic conditions and air quality improvements due to a mix of proper design and implementation and the opportunity for transportation innovations.

Redevelopment of the Common under the preferred development scenario provides the opportunity to reduce parking, resulting in less vehicular use; consolidate parking to reduce vehicle trips and create localized air quality improvements; and provide electric vehicle charging stations to reduce carbon emissions.

Streetscape improvements can allow for the inclusion of bike lanes separating vehicle and bicycle traffic to encourage this transportation alternative, which bears significant importance to the commuter passenger population that bikes from the area to the Littleton MBTA Station. Additionally, development provides the opportunity for public-private partnerships to be established to implement sidewalk improvements and construct pedestrian trails to ensure not just the walkability of the Common area, but connections to and from the common for residents in other areas of the Town.

The preliminary conceptual study of street improvement options examined what the current public right-of-way may afford for an improved streetscape in terms of available space for travel lanes, bike lanes, widened sidewalks, and planting spaces. Data for the public right-of-way were obtained from extant GIS data, which may or may not represent exact street section dimensions otherwise accurately captured only through a site survey. While this data suffices for initial studies, further studies of the following street improvement options probably warrant such a site survey.



PROPOSED CROSSWALK LOCATIONS

PROPOSED CROSSWALKS

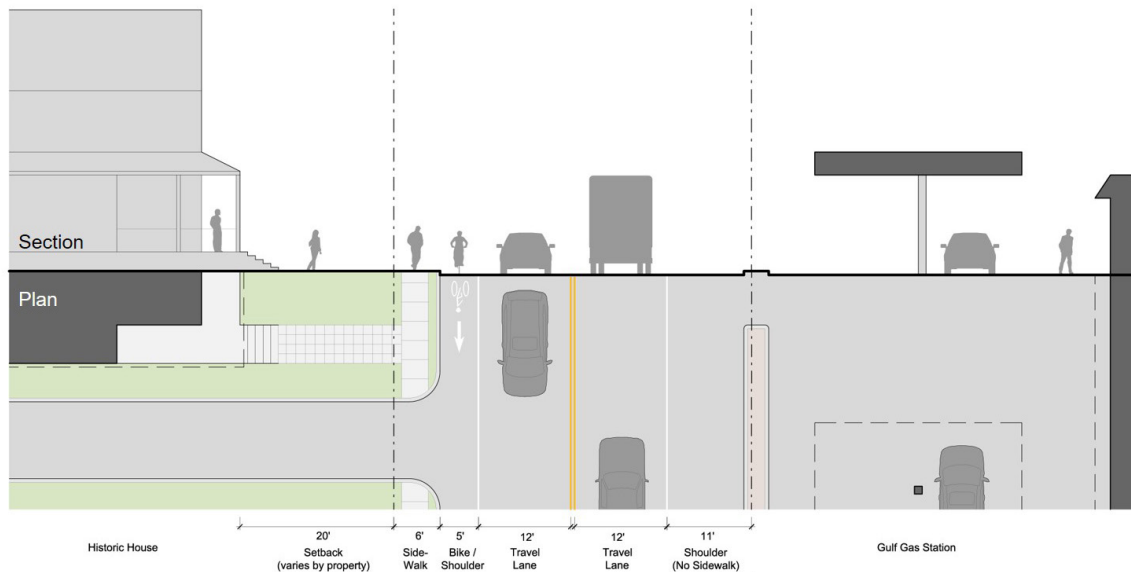
Successful walkable commercial streets are characterized by a streetscape that supports fluid pedestrian movement. One way to facilitate this is to include more frequent crosswalks so that pedestrians may easily access storefronts and commercial buildings in the immediate field of vision.

The lack of appropriately placed crosswalks in the Common was frequently cited by residents as a leading deterrent to walking. Particularly along Great Road, over 2,000 feet separate the crosswalks been the Common Green and the southern end of the Area of Analysis. In contrast, activated commercial streetscapes with more

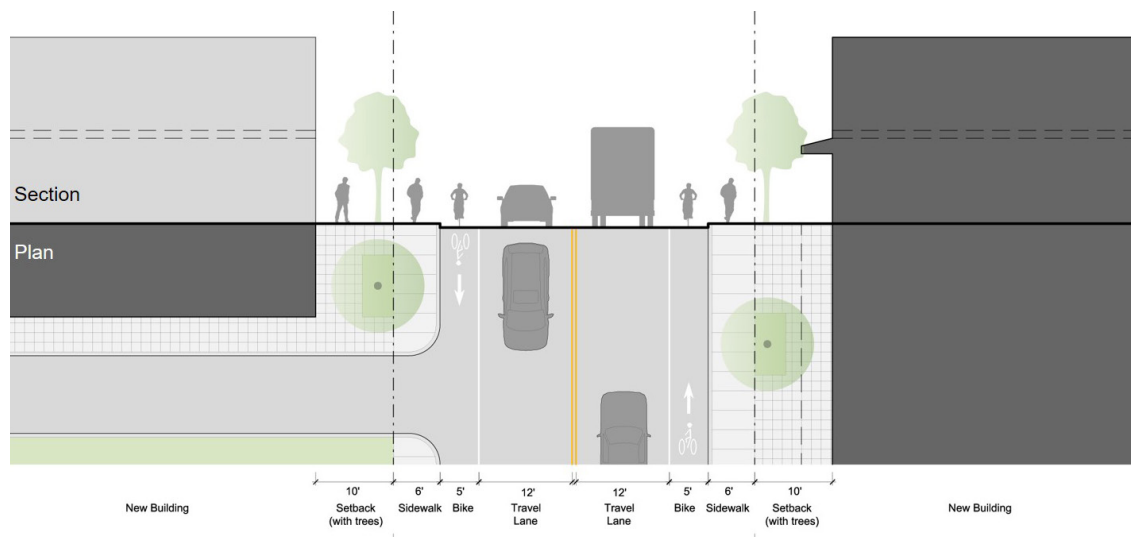
significant foot traffic on nearby main streets have the following crosswalk gaps:

- Ayer: 200’ – 300’
- Groton: 200’ – 450’
- West Concord: 200’ – 400’
- Concord: 150’ – 300’

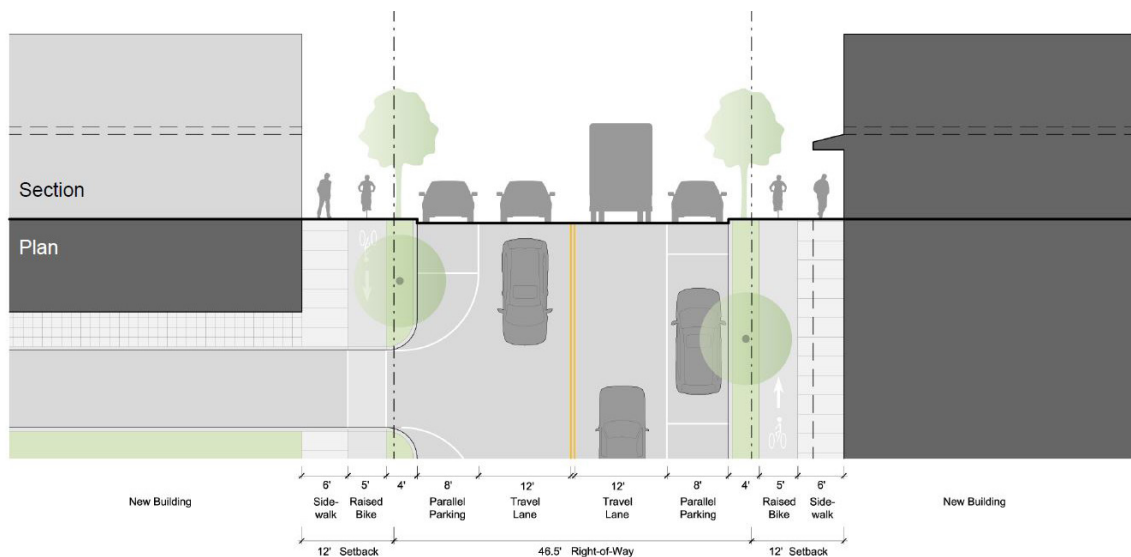
As such, the crosswalks in the Common should be spaced between 200 and 400 feet apart and positioned to align with existing and projected points of interest. Additional crosswalks should be located to facilitate easy access to the triangular Common Green parks.



GREAT ROAD
EXISTING
CONDITIONS



GREAT ROAD
REDEVELOPMENT
OPTION A



GREAT ROAD
REDEVELOPMENT
OPTION B

GREAT ROAD IMPROVEMENTS

Spanning approximately 46.5' in its right-of-way, Great Road currently has two travel lanes (12' each) and is flanked on the south side by a 5' wide bike lane/shoulder and on the north side by an 11' wide shoulder. There are currently no sidewalks to the north and the extant sidewalk to the south is a narrow 5' in width.

The preferred development scenario illustrates two opportunities to make improvements within the existing right-of-way.

The first option explores an added sidewalk and bike lane to the north as well as a 10' setback for expanded sidewalk and planting space. The second option is more ambitious and proposes on-street parallel parking, a 4' planting zone, a 5' raised bike lane, and finally a 6' sidewalk bordering a consistent street wall. This option would provide for convenient retail access and a protected bike lane, but it would require public improvements on private parcels. These improvements can be incentivized through zoning allowances (as included in the Action Matrix).

KING STREET IMPROVEMENTS

King Street has a slightly wider average right-of-way (~55') although this width varies greatly within the Area of Analysis. The illustrated street section is taken between Jennifer Street and White Street.

King Street currently contains two travel lanes (12' each) and is bordered toward the south by a bike lane/shoulder and a raised sidewalk (6') and toward the north by a bike lane (5'), planter area (8'), and an unprotected sidewalk (4'). Buildings on both sides are set back on average between 15' to 30'.

The preferred development scenario introduces parallel parking on both sides, raised bike lanes, and a 6' wide sidewalk. Trees can also be prescribed along this sidewalk. Similar to the second option for Great Road, this street section provides convenient on-street parking together with bike and pedestrian infrastructure.

TRANSPORTATION FINANCING

There are a series of state programs available to assist municipalities in funding infrastructure improvements for the purpose of stimulating economic development, including those listed below.

1. Public Works Economic Development Grant: assists municipalities in funding transportation infrastructure that will stimulate economic development. Applications submitted by municipalities are reviewed by the Office of Commonwealth Development, and funds are allocated based upon the economic development and smart growth merits of the application. Grants can be up to a maximum of \$2 million per municipality per project.
2. The District Improvement Financing Program (DIF): a public financing alternative available to all Commonwealth municipalities for public works, infrastructure, and development projects. Future, incremental tax revenues collected from a predefined district are allocated to pay project costs. It is a locally driven program, approved by Littleton's Economic Development Committee (EDC) and the state's Economic Assistance Coordinating Council. The EDC must define the district and document a development program describing how the DIF will encourage increased residential, commercial and industrial activity within the Common. It must also detail the project improvements, financing plans, and community benefits.

GREEN INFRASTRUCTURE

There are numerous definitions for the term "green infrastructure" used throughout the U.S. ranging from alternative stormwater management techniques to the inclusion of water resource management and natural landscape protection as a whole.

In Massachusetts, the definition of green infrastructure follows the inclusionary approach, as:

“An approach to infrastructure and natural resource management that includes sustainable water infrastructure, preserving and protecting natural or ‘green’ systems, decentralized solutions, or other innovative approaches and technologies that provide multiple benefits.”

These techniques include, but are not limited to: rain gardens, porous pavement, green roofs, water efficient landscaping, infiltration planters, trees and tree boxes, rainwater harvesting systems, and preservation and restoration of natural landscape buffers. Simply put, green infrastructure is a term used to describe non-traditional infrastructure methods for water management and the use of green spaces as protective “infrastructure.” While it’s true that in some cases it will be important to implement both conventional (“grey”) and green infrastructure to protect economic assets, green infrastructure provides multi-functional benefits. The comparison between these techniques is described in the following table.

CLIMATE RESILIENCE AND
STORMWATER MANAGEMENT

There are tremendous efficiencies of scale in implementing green infrastructure for climate change resiliency and stormwater management. Protecting green spaces and natural lands, particularly within floodplain and coastal flood hazard areas, provides multiple benefits for a community such as flood storage and retention and wave energy capture. In addition, green infrastructure brings a host of additional benefits such as cleaner air and water, wildlife habitat, and open spaces for people.

Green infrastructure is a term also used to describe innovative wastewater and stormwater management that mimics natural hydrology. This provides a great benefit in protecting developed areas from floodwaters, as well as complying with new requirements for the National

Pollutant Discharge Elimination System (NPDES) for Municipal Sanitary Storm Sewer Systems (MS4), which requires the use of low impact development and green infrastructure strategies.

The primary innovative green infrastructure systems that reduce water volumes and flood potential include those listed below, which the Town should prioritize in both public infrastructure improvement projects, as well as in reviewing and approving private developments.

- 1. Permeable Pavement: Permeable paving allows rainwater to percolate through the paving and into the ground before it runs off. This approach reduces stormwater runoff volumes and minimizes the pollutants introduced into stormwater runoff from parking areas. All permeable paving systems consist of a durable, load bearing, pervious surface overlying a crushed stone base that stores rainwater before it infiltrates into the underlying soil. Permeable paving techniques include porous asphalt, pervious concrete, paving stones, and manufactured “grass pavers” made of concrete or plastic. Permeable paving may be used for walkways, patios, plazas, driveways, parking stalls, and overflow parking areas.
- 2. “Green” or “Blue” Roofs: Both Green and Blue Roofs have dual purposes when it comes to climate resiliency: reducing rainfall volumes and providing heat absorption. Green roofs are typically vegetated and/or include growing areas for food, which reduce the volume of rainwater runoff by capturing rainfall and infiltrating it, thereby reducing flooding potential in areas adjacent to its use. In addition, the vegetation also serves as a method for absorbing heat and maintaining appropriate temperatures inside the building. Blue roofs are a relatively new concept in Massachusetts, in which non-vegetated controls such as weirs or small check dams can create temporary ponding and gradual release of stormwater. Blue roofs are less costly than green roofs. Coupled with light colored roofing material

they can provide sustainability benefits through rooftop cooling.

- 3. Bioretention: Bioretention is a term for the use of technique that uses soil, plants and microbes to treat stormwater before it is infiltrated or discharged. Bioretention “cells” are shallow depressions filled with sandy soil, topped with a thick layer of mulch, and planted with dense vegetation. Stormwater runoff flows into the cell and slowly percolates through the soil (which acts as a filter) and into the groundwater; some of the water is also taken up by the plants.
- 4. Raingardens: Raingardens are a type of Bioretention Cell that is on a smaller scale. The primary differences are that raingardens are frequently used on residential lots; they generally include simple overland outlets/overflows; and rather than requiring specialized bioretention media, simpler soil amendments for the planting bed are all that’s needed.
- 5. Vegetated Swales: Vegetated swales are used to convey stormwater runoff. These open, shallow

channels slow runoff, filter it, and promote infiltration into the ground; as a result, runoff volumes are smaller, peak discharge rates are lower, and runoff is cleaner. This approach contrasts with conventional stormwater strategies that rely on gutters and pipes that increase the velocity of runoff and do nothing for water quality. Vegetated swales can replace curb and gutter systems as well as storm sewers that convey runoff. However, they are not just ditches under another name—they must be carefully designed and maintained to function properly. The vegetation in swales, usually thick grass, helps to trap pollutants (suspended solids and trace metals), and reduce the velocity of stormwater runoff; stormwater also percolates through the natural substrate.

- 6. Grass Filter Strips: Grass filter strips are low-angle vegetated slopes designed to treat sheet flow runoff from adjacent impervious areas. Filter strips function by slowing runoff velocities, filtering out sediment and other pollutants, and providing some infiltration into underlying soils. They provide good “pretreatment” of stormwater that will then be





IMPLEMENTING THE SMART SEWERING PROGRAM

The Town took a big step in developing and ultimately approving design funding for the Littleton Common Smart Sewer Project, which is intended to provide upgraded wastewater service to 180 or more properties in the Common and nearby surrounding areas. This infrastructure project is an essential prerequisite to several recommendations of this Road Map and implementation of the preferred development scenario.

The sewer project will include the construction of a Community Water and Energy Resource Center (CWERC), which will treat wastewater from Common area properties, within the designated district, to produce a high-quality effluent for return to the environment. The decentralized system will be comprised of small diameter, low pressure wastewater treatment facilities that deliver flows to the CWERC. Designed with grant funding from the Charles River Watershed Association, the CWERC is planned to include resource recovery facilities, including an anaerobic digester, and will produce energy and reuse quality water from the waste treated. Local treatment of sewage and food wastes would maximize environmental technology to provide energy, reduce environmental impact, and generate revenue for the Town.

The CWERC in itself offers development incentive to developers and property owners that wish to take advantage of an extremely efficient, innovative system that provides high-quality wastewater treatment services, as well as opportunities for alternative energy. Additionally, this type of wastewater system allows new uses (such as restaurants) that are presently limited by capacity requirements for existing septic systems. Therefore, we recommend that the Town continue to market the capabilities and benefits of the CWERC to property owners and the New England development community, to ensure that potential developers understand the unique benefits this infrastructure has to offer.

It is strongly recommended that future documentation relating to the smart sewer system is included and/or referred to within this Road Map. For instance, the final sewer district boundaries should be included in map form as an appendix within this document. Additionally, upcoming actions with respect to design and construction of the system should be included within the Road Map Action Matrix, as the implementation of this important project is directly related to potential redevelopment within the Common.

ECONOMIC INCENTIVES

Development incentives include expedited permitting, decreased fees, zoning upgrades, reduced stormwater requirements, and other benefits to developers who plan to use green infrastructure. Development incentives go beyond single-site improvements and can have large-scale impacts.

INCENTIVIZE SUSTAINABLE, ENVIRONMENTALLY-FRIENDLY DEVELOPMENT

While redevelopment's primary focus is encouraging new economic opportunities, projects should be respectful of resource consumption and environmental impacts, particularly due to the sensitive aquifer. Encouraging innovative technologies and creativity within development projects is a critical factor in achieving the vision for the Common, as well as minimizing the environmental impacts of development habitat resources adjacent to the Common. Additionally, attention to the social, economic, and cultural well-being of the Common is very important in ensuring the long-term sustainability of the community. However, implementation of sustainable development incentives is not always easy, as it is not as desirable as offering financial incentives.

Development incentives for energy efficient, green, mixed-use developments must be bold and

routed to another technique such as a bioretention area for water quality treatment. Filter strips differ slightly from buffer strips, which are natural vegetated areas alongside streams and lakes that are left undisturbed for habitat and flood protection. Alternatively, filter strips are altered areas designed primarily for effective and inexpensive stormwater management.

7. Rainwater Harvesting: a specific water capture and reuse term for the collection of rainwater prior to its runoff onto impervious surfaces, for use primarily in irrigation and landscaping. With projected seasonal droughts due to climate change, rainwater reuse will become more and more of a necessity. According to MA DEP, merely 1/4 inch of rainfall on a typical roof will fill an entire residential rain barrel- a full rain barrel will water a 200 square foot garden. Rain water is free from minerals and chemicals such as chlorine, fluoride, and calcium that are often present in municipal water, therefore; rain water is considered ideal for landscaping. Rainwater Harvesting can be achieved in varying scales from a backyard rainbarrel at a residence to a large commercial cistern system.

We encourage the Town to utilize MAPC's Once is Not Enough: A Guide to Water Reuse in Massachusetts to consider implementing water collection and reuse mandates within development and redevelopment

projects. The town should work with MAPC to ensure that water reuse is a feasible, desired option for property owners. Specific policy changes associated with these measures include:

- Expanding the regulatory allowance of water reuse in residential developments, as was done in Portland, ME via the implementation of a Rainwater Harvesting One and Two-Family Dwelling Specialty Code allowing rainwater reuse for these facilities;
- Consideration of establishing a coordinated local stormwater/wastewater planning and management task force to ensure that there is cross-departmental collaboration regarding integrated water resources; and
- Preparation of public education programming regarding the multiple benefits of rainwater harvesting (e.g. cost savings, stormwater reduction, climate resiliency, and water efficiency).

The Town should consider the feasibility of implementing a stormwater funding mechanism (i.e. drainage fee), to help pay for increased costs associated with MS4 compliance, and to fund ongoing water quality/ quantity and resilience projects. A robust stormwater funding program can also include as well as tax credits, stormwater fee credits, and rebates to incentivize this type of green infrastructure implementation on private properties.

straightforward. Recommendations for the Town to consider implementation include density bonuses, streamlined permitting, subsidies, and awards, as described below.

- **Density Bonuses:** Allowing developers to receive bonuses for sustainable, mixed-use development is a very successful revitalization tool. Developers are generally open to including sustainable design components or achieving certain green building ratings in exchange for increased Floor Area Ratio or square footage, and reduced landscaping requirements and/or alternatives (e.g., green roof space as open space).
- **Streamlined Permitting:** The permitting and approval process for projects deemed sustainable - according to the town's development guidelines (or Form-Based Code) - can be employed to save both the Town and developers money. This strategy typically involves reorganization of planning department procedures and training. It is recommended that planning staff (or Board Members) become well-versed in green rating systems (e.g., LEED). Eventually, the Town will experience increased revenues, as projects that move more quickly to completion provide increased tax revenues earlier for the community.
- **Subsidies/Grants:** The Town can offer grants to private-property owners and community groups for green infrastructure practices or promote them indirectly through low-impact development competitions, outreach, and other avenues. For instance, the Green Improvement Fund in Onondaga County, N.Y., provides grant funding to commercial properties that install green infrastructure practices in specific sewer districts. Engineering firms can implement their choice of green infrastructure techniques, but grants are determined by the amount of stormwater captured.
- **Awards and Recognition Programs:** These types of incentives reward design innovation and increase

awareness of sustainable development projects by decision-makers. The motivation for property owners and developers comes in the form of increased property values. According to the Council of Tree and Landscape Appraisers, each mature tree can add from \$1,000 to \$10,000 to property values.

INCREASE HOUSING AVAILABILITY

As noted in the economics analysis, the number of Littleton residents overall increased by nearly 40% between 1970 and 2010, generating a new need for a variety of housing development types. This trend is expected to continue. Therefore, the inclusion of a mix of housing types is absolutely necessary to be included within redevelopment project proposals within the Common. Additionally, proposed housing units must include a variety of layouts, bedrooms, and affordability in order to address the needs of a multitude of populations including young families, seniors, and workforce housing.

The allowance of accessory housing within the Village Common Business District is a step in the right direction to provide innovative, varied housing types within a dense area. Additionally, the recent amendment of the Town's Senior Residential Development Bylaw to provide for a variety of housing types, sizes, settings, residential services, and price points to meet the needs of people as they age, and with disabilities, was critical to accommodate these housing needs. The amended Bylaw also encourages siting of these types of housing within the Village Common Business District in order to support senior health, mobility, independence and participation in the community.

While the aforementioned bylaw changes are essential first steps in providing required housing within the Common, there is a chance that alternative locations are chosen due to typical site design practices (i.e. allowing for a large single building and site layout with parking versus location within a denser area). Policies need to ensure that the “mission middle” – a range of multi-



unit or clustered housing types compatible in scale with single-family homes that help meet the growing demand for a walkable community – is accomplished within the Common. Therefore, development review and site plan policy changes, in addition to zoning, need to allow for smaller parcel sizes, support condominium and cooperative ownership structures, and streamline the

approval process for infill development. Additionally, a marketing campaign with respect to housing within the Common should explain how this type of housing will minimize residents' transportation costs (i.e., vehicle expenses and parking fees) and provide more affordable transportation options that increase economic security (e.g., in times of vehicle or job loss).

FINANCING AND ECONOMIC DEVELOPMENT ASSISTANCE

While philanthropic, federal, and state funding is important to communities of all sizes, it is particularly helpful to smaller communities that have limited resources to address challenges such as out-of-date infrastructure, vacant properties, and relatively few amenities to attract new residents and businesses. Even a small amount of outside money applied strategically to support the vision for the Common can help increase local interest and commitment in the area, and spur private investment.

Littleton can also create its own financial incentive programs. Small public investments can be narrowly targeted to encourage private property owners within the Common to contribute to their own resources, creating a cumulative effect that is greater than the sum of its parts. For example, Douglas, Georgia, helped renovate 40 façades through a streetscape project funded by a federal Transportation Enhancements grant. In Roanoke, Virginia, municipal government created an Enterprise Zone, where new or expanding businesses in that area

became eligible for incentives including façade grants, tax exemptions, and fee waivers.

Revolving loan funds can assist smaller investors and existing businesses that often don't have a large amount of funds on hand to address the cost of property rehabilitation and renovation. Revolving loan funds provide capital for a property or business owner, who pays back the loan over time to replenish the funds, which can then be lent to others who are working on another building or commercial space.

Initial funding, or capitalization, of a revolving loan fund usually comes from a combination of public sources, such as the local, state, and federal governments, and private ones like financial institutions and philanthropic organizations. Funding acquired for capitalization is usually the equivalent of a grant – it does not need to be paid back. Most revolving loan funds have at least one local public source for capitalization combined with other sources. If capitalization is exclusively local, the fund may have greater flexibility in lending, as state and federal involvement tend to include restrictions that may not fit local business needs.



MASSACHUSETTS-BASED ASSISTANCE PROGRAMS

There are a number of economic and financial assistance programs offered by the Commonwealth that could help the Town attract redevelopment and new development by existing property owners and developers. The Massachusetts Economic Development Incentive Program (EDIP) is a tax incentive program designed to foster full-time job creation and stimulate business growth.

Participating companies may receive state and local tax incentives in exchange for full-time job creation and private investment commitments, including:

- Refundable Investment Tax Credit of up to \$1,000 per job created for projects resulting in the creation of at least 100 jobs;
- Massachusetts Life Sciences Initiative: Offers incentives to companies engaged in life sciences research and development (R&D) including a 10% credit on depreciable property, a special sales tax exemption, and a construction sales tax exemption;
- Life Science Company Jobs Credit: A business in the life sciences industry that creates at least 50 new jobs may be eligible for a corporate income tax credit; and
- Research and Development Tax Credit - separated into two categories: a 10% credit designed for qualified expenses, and a 15% credit available to basic research payments (donations and contributions made to research organizations like hospitals and universities).

In Massachusetts there are also a series of tax credits and exemptions to entice innovative business development such as:

- Sales & Use Tax Exemptions for machinery, replacement parts, and materials used by manufacturing and R&D corporations in research and development; and
- Massachusetts Investment Tax Credit: 3% credit for qualifying businesses for Massachusetts corporate excise tax used during the purchase or lease of a property.

ZONING AND REGULATION

As noted in previous sections, there are numerous changes that need to be made to the zoning code and a set of relative regulations in order to properly implement the vision for the Common and allow for the preferred development scenario to come to fruition. Changes to relevant policies and regulations are outlined in the following sections.

SUSTAINABLE/RESILIENT DEVELOPMENT POLICIES

Although there are a number of regulatory-based changes that can address climate resiliency and sustainability within the Common, as described in following sections, overarching policy changes and changes in practice must occur. First, the Town should review upcoming initiatives, programs, and planning and design projects for opportunities to integrate climate mitigation and adaptation strategies. This review should be followed by discussions about how and where to make changes in the municipal budget for climate resilience actions. In doing so, the Town can be well prepared to identify potential sources of outside funding to support these actions, such as the Commonwealth’s Municipal Vulnerability Preparedness program.

Other policy and practice changes that should be required on both public and private properties to ensure the longevity of redevelopment within the Common include the following:

- Water conservation to retain drinking water capacity:
 - » Explore and enact year-round watering restrictions such as irrigation limits to two days per week outside the hours of 9 am to 5 pm, and clear guidelines for restriction mandates or tiers such as “no sprinklers” and “total ban.”

- » Explore new financial structures for water use such as seasonal rate structures that charge higher unit costs during peak demand periods, and higher water rates for outdoor meters to send an appropriate conservation signal to consumers.
- » Provide educational templates such as flyers, press releases, notifications to be added to water bills, website postings, and board postings that describe the critical importance of conservation for climate resiliency.

- Resilient landscaping:
 - » Explore the potential for the introduction of species that may be better suited to grow under predicted future climate conditions.
 - » Redesign and/or remove impediments to flow, sediment supply, and habitat migration potential such as dams and undersized culverts (i.e. using the Massachusetts Stream Crossing Handbook).
 - » Require an increase in the percentage of tree cover in all new developments, especially within and adjacent to parking lots and roadways to attenuate heat effect and assist with stormwater management.

- Maintain municipal Green Community designation:
 - » Support the uptake of renewable technologies including renewable thermal technologies, microgrids, district energy, and battery storage.
 - » Enhance green building standards and energy use reductions within the Common, including the consideration of sustainable building requirements for new construction, and the promotion of energy audits and retrofits for existing buildings.
 - » Provide information on municipal building department websites that promotes climate resilient designs (e.g. City of Boston’s Article 37 Green Building).

- » Consider a Net Zero bylaw (e.g. Net Zero Ordinance, City of Cambridge).

ZONING FOR REVITALIZATION

An initial approach first outlined by the Town was to carry out a critical review and assessment of the existing Zoning Bylaw, including Site Plan Requirements and the Village Common District Article, to determine limiting effects on achieving the goals described in the 2017 Littleton Master Plan for revitalization of the Common. In doing so, it became evident that current zoning, as it relates to the Common, was inadequate to foster mixed-use redevelopment.

While amendments that the Town made over the past several years to the base zoning code do encourage revitalization within the Common, there still are some deficiencies within the code that may dissuade redevelopment interests.

Despite the Town’s effort to encourage mixed-use development via a Mixed-Use Article and Littleton Village Overlay District, these zoning provisions are confusing and, in some cases, forbearing, which may be a factor for the lack of redevelopment within the area.

First, the addition of both a mixed-use article and the Littleton Village Overlay article results in some confusion with respect to what provisions a development proposal must comply with. If a developer proposes a mixed-use redevelopment on their existing parcel within the Common, must the designer follow the few standards within the Mixed-Use article regarding design and scale, or the more prescriptive design standards within the Littleton Village article?

Adding to this ambiguity is the Conflict Provisions of the Littleton Overlay article, which gives developers an “out” through the provision that: “any owner who elects to

utilize the existing underlying zoning district regulations to develop or redevelop land” can do so. If this is allowed, many developers and property owners may choose this option, therefore; abandoning the purpose and intent of the Littleton Village Overlay with respect to revitalization.

Second, there is a lack of flexibility with respect to site planning that is required to accommodate mixed uses within existing parcels. For instance, many parcels abutting the Common or Great Road are narrow and are still difficult to redevelop within the confines of allowed site configuration.

A zoning diagnostic of other sections of the Town’s zoning articles revealed that alterations to the base zoning code are required to allow redevelopment to occur within the Common as envisaged, including, but not limited to the suggested changes below.

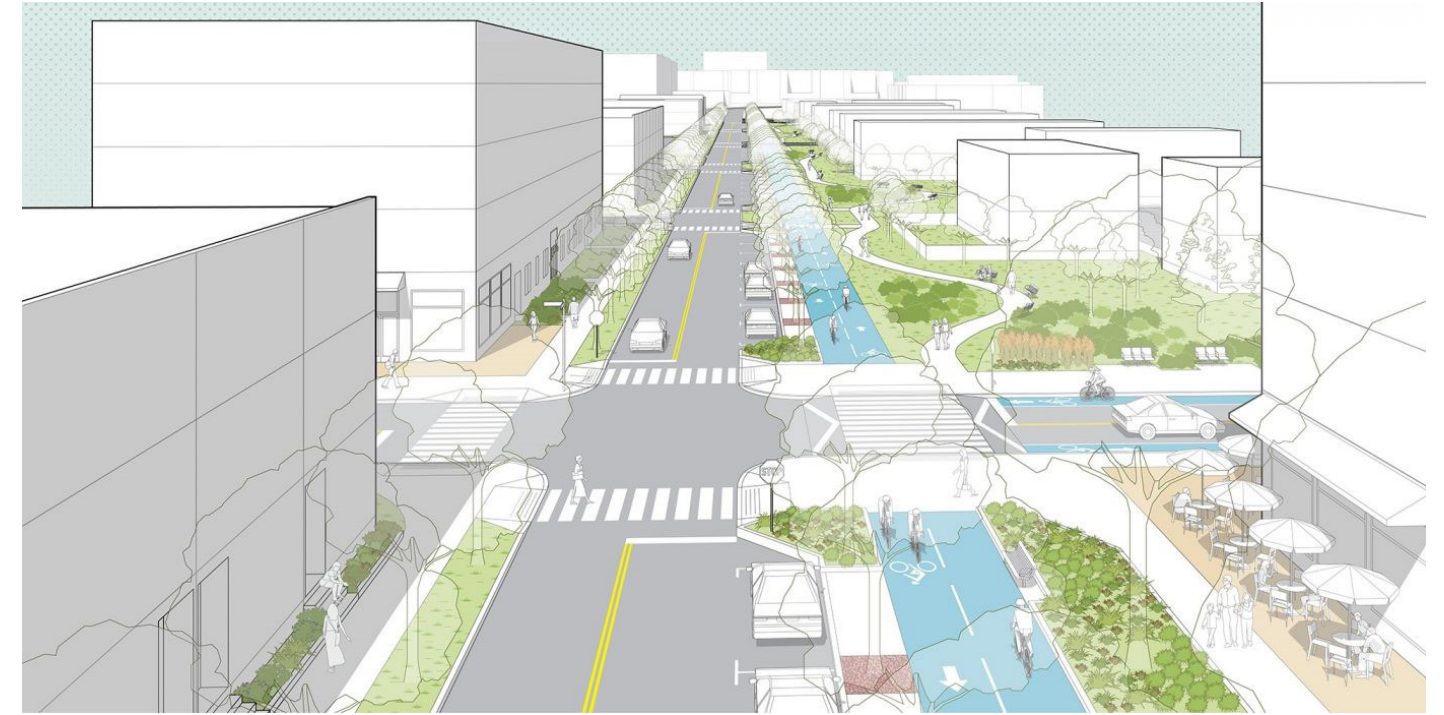
- Relax standards for pre-existing, non-conforming lots to allow for lot reconfiguration that would result in the type of infill redevelopment shown in the preferred planning scenario. Additionally, these changes would eliminate the need for developers to undergo time consuming and costly zoning variances.
- Reduce parking standards for development and redevelopment projects to reverse the land consumptive nature of parking in an auto-dominated environment, allow for more dense development as shown in the preferred scenario, and create a pedestrian-friendly and environmentally sound neighborhood. Shared and/or “stacked” parking should also be included as alternatives to standard surface parking.
- Create redevelopment performance standards specific to infill development and redeveloped parcels to ensure that the scale, design, and character portrayed in the preferred scenario is achieved.



BEFORE: TYPICAL CONDITIONS PRODUCED BY CONVENTIONAL ZONING



FORM-BASED CODE: NEW STANDARDS FOR THE PUBLIC REALM AND PRIVATE DEVELOPMENT



Form-Based Codes promote a public realm that emphasizes pedestrian-friendly spaces and scales.

The Revitalization Project, by which this Road Map was established, required the planning team to create a revised base zoning code for the Town to address these general limitations. Results of the public engagement program, discussions with stakeholders, and the initial zoning analysis all pointed toward the use of Form-Based Code to best ensure that the vision for the Common was truly fulfilled.

A Form-Based Code (FBC) would foster predictable built results and a high-quality public realm plan by using physical form as the organizing principle, versus separation of uses, as the current zoning code does. Regulations that accompany this new FBC will be developed in both words and clearly drawn diagrams to designate the appropriate form and scale (and therefore, character) of development. The proposed FBC would include the elements listed below.

1. Form-Based Zoning Code: a separate Zoning Division (Article) to be incorporated into the existing Littleton Zoning Code, which would

include the following key sections:

- a. Overview: including the FBC purpose, intent, definitions, principles, and a user-friendly description of accompanying regulations; and
 - b. Administration: describing FBC implementation and enforcement.
2. Regulating Plan: a district-specific plan (in map form) that illustrates the types of mixed-uses that were envisioned for the Common and establishes the zoning district in which the FBC refers to (i.e. the Area of Analysis for this Revitalization Road Map).
 3. Regulations: guidance accompanying the FBC with respect to key actions required to achieve the vision for the Common, which include building design and streetscape standards, including:
 - a. Building design standards governing building form, placement, and fundamental elements to

ensure that all buildings are compatible with the surrounding neighborhood and the street; and

- b. Streetscape standards to balance the needs of motorists, pedestrians, bicyclists, and transit riders while promoting a vibrant public realm (see example graphics that would be included).

General recommendations to be addressed within the form-based code include, but are not limited to, the following:

- Allowance of, and incentives for, innovative green infrastructure systems within setback areas and buffers such as bioretention areas, rain gardens, filter strips, swales, and constructed wetlands;
- Allowance of green infrastructure measures to count toward fulfillment of site landscaping/open space requirements;
- Minimized setback distances to increase flexibility with regard to building locations;
- Reduction in required lot/building frontage (and corresponding road length/paved area);
- Permitted and incentives for use of permeable

paving for parking stalls and spillover parking areas;

- Maximum of three (3) off-street parking spaces per 1,000 square feet of gross floor area in mixed-use developments with office uses;
- Maximum of 4.5 off-street parking spaces per 1,000 square feet gross floor area for retail uses;
- Established formulas for the utilization of shared parking for uses with different peak demand periods, and the reduction of parking requirements if shared parking is proposed;
- Maximum parking stall width of 9' x 18' for standard parking spaces;
- Smaller stalls for compact cars (approx. 30% of total number of parking spaces);
- Established landscaping requirements for parking areas (e.g. vegetated islands with bioretention functions); and
- Allowance for the discharge of uncontaminated rooftop runoff to lawn areas and buffers, with level spreader or other velocity reduction mechanism.

REGULATION CHANGES

In addition to ensuring that zoning and accompanying guidelines are appropriate for revitalization purposes, it is important to ensure that local regulations allow for the preferred development scenario to be achieved and facilitate the construction of green and sustainable building projects. An initial review of the Town’s regulations revealed a series of recommended regulatory additions and changes to existing regulations as listed below.

LOW IMPACT DEVELOPMENT / STORMWATER REGULATIONS

An essential element of successful redevelopment throughout the Common is that it results in minimal impacts to both the environment and the community at large. A critical factor in minimizing impacts is to maintain the natural hydrologic cycle of the location in which development occurs. Properly managing rainfall that runs off hardened (impervious) surfaces helps to ensure development does not result in flooding or polluted water. This Low Impact Development (LID) concept includes landscaping and design techniques that attempt to maintain the natural, pre-developed ability of a site to manage rainfall.

Currently, the Town relies upon its Stormwater Management and Erosion Control regulation to affect the Stormwater By-Law included in the Zoning Code. However, the Bylaw and Regulation do not provide enough guidance and specificity regarding the desired water quality and quantity controls for the Town. Further, these laws and regulations do not encourage, and sometimes do not allow for, green infrastructure innovations to minimize impacts or achieve the community’s vision for the Common.

The Town has additionally committed to implementing its Complete Streets Policy across all public and private projects, which is designed to create a road network that meets the needs of individuals utilizing a variety of transportation modes. However, this policy does not

currently correspond or include stormwater management within or adjacent to roadways.

Therefore, it is recommended that the Town:

- 1. Generate a Low Impact Development/Stormwater Management regulation, based upon the Commonwealth’s model Low Impact Development/ Stormwater Management Regulation. Creating this regulation would also ensure that the Town fully complies with the new National Pollutant Discharge Elimination System’s Municipal Separate Storm Sewer System (the “MS4”) 2016 Permit.
- 2. Fully participate in the MAGIC Stormwater Partnership to increase the capacity of the Town with respect to these issues. Additionally, the LID/ Stormwater Regulation should be referenced in the Complete Streets Policy, as well as additional language to include stormwater management as a component of a “complete street.”

It is also critical for the Town to prepare itself for higher costs associated with implementing a robust stormwater management program, particularly in the face of increased precipitation and flooding associated with climate change. The Town should build from MAGIC Stormwater Collaborative interactions to explore establishment of a local (or regional) stormwater utility.



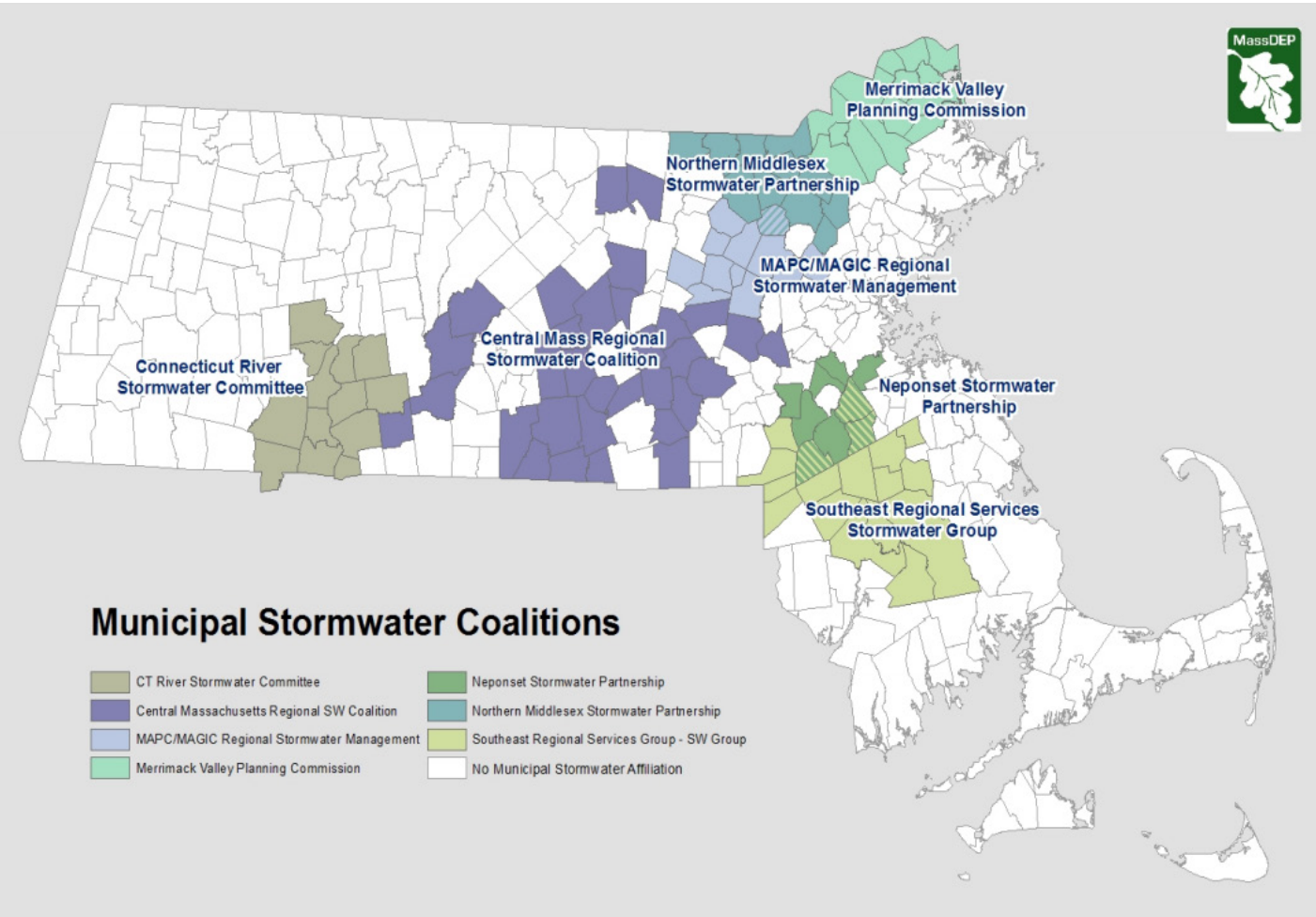
SITE PLAN RULES

Following the establishment of the recommended LID/ Stormwater regulations, the Planning Board should create mechanisms for enforcement of maintenance agreements and establish regulations/fines for property owners who fail to maintain stormwater facilities.

WETLANDS REGULATIONS

The Town should be commended for creating its own Wetland Protection Rules and Regulations, as many towns and cities throughout the Commonwealth rely upon the State Wetland Regulations, which may not apply to specific local conditions. However, the

Littleton wetland regulations are lacking in the way of performance standards that would support LID and green infrastructure within the Common. Specifically, it is recommended that performance standards are established with respect to Bordering Land Subject to Flooding, Isolated Land Subject to Flooding, and Riverfront area to ensure development compatibility adjacent to these flood-prone areas. Additionally, it is recommended that the Littleton Wetland Regulations cross-reference the suggested LID/Stormwater Regulations to ensure that the use of innovative green infrastructure is primarily considered adjacent or within these critical buffer zones.



The MAPC/MAGIC Regional Stormwater Partnership consists of Acton, Bedford, Bolton, Boxborough, Carlisle, Concord, Hudson, Lexington, Lincoln, Littleton, Maynard, Stow, and Sudbury.

PUBLIC OUTREACH

Redevelopment is not just constructing buildings; it ensures that residents of a community are empowered to improve their quality of life and environment as a result of sound planning practices. Redevelopment is typically perceived as the physical placement and regulation of land uses and structures. However, redevelopment goals should also incorporate other aspects of community development such as design, preservation of historic assets, public spaces, promotion of environmental justice, environmental remediation and even issues that enhance the level of social services provided to neighborhood residents.

ENGAGEMENT AND MARKETING

Community identity and pride are critical components to ensuring the successful implementation of this Road Map. Future redevelopment projects provide an opportunity to re-engage citizens and renew a sense of pride in the Common.

Stakeholders expressed a clear mandate that they wish for the Common to be redeveloped as a modern, inclusive village area that welcomes innovation, while also being respectful of the past. Therefore, it is recommended that the Town continue to involve the public in a series of revitalization-related activities to ensure that the Road Map is implemented, such as:

- Develop and adopt more rigorous project noticing policies specific to the Common redevelopment area.
- Ensure that redevelopment plans address the needs of the existing population to address gentrification concerns.
- Establish a “community meeting” requirement for the initial planning stage of redevelopment projects within the Common, in addition to the public meeting requirement. This will not only ensure

that stakeholders become involved early in the development review process, but it also provides developers with an opportunity to gain feedback before project plans have been moved forward.

- Build momentum for change via ongoing programming, which can help test new ideas and ground-truth community vision, such as:
 - » Creating a public artwork competition for residents and local school children to create art displays (statues, posters, displays) illustrating what they would like to see in the Common,
 - » Establishing a springtime nature-based event in which local landscapers can demonstrate their designs and ideas for greenspaces throughout the Common area,
 - » Scheduling summertime art and craft fairs inclusive of local agricultural products, and
 - » Creating temporary structures and rehabbing building façades to enable new uses, forge an Common identity, and attract additional investment.

These initiatives lay the groundwork for more long-term actions that will transform the Common into a denser, environmentally-sensitive, and pedestrian-friendly economic catalyst for the Town.

Long-term actions will require partnerships amongst local governments and private property owners and developers to create zoning and regulatory changes, infrastructure improvements, and projects and programs for development incentives.

BUSINESS INCUBATORS

Littleton Common is a ripe location for business start-ups and co-working spaces, as they are flexible uses that do not require whole-sale retrofits at the start.



Concurrent, small scale events can occur to make a more lively and larger-scale event such as concerts, food truck gatherings, or wine/beer tastings, and craft fairs.

Coworking spaces can be well-suited for older buildings and are similar to incubators in that they lower the space rental and overhead expenses for these small businesses.

These type of “spark-plug” uses can become permanent rent-paying occupants in the Common if they are successful. Additionally, fostering incubator businesses and spaces for co-working opportunities brings an air of innovation to the Common that could lead to permanent redevelopment.

Working with community organizations such as the Littleton Business Association, the Town can work with property owners to accommodate these startups. The Town and/or private investors can also help subsidize or facilitate co-working spaces, just as they do retail incubators.

POP-UP AND TEMPORARY BUSINESSES

In many small towns, after years of low vacancy rates, village districts can end up with a reputation for being stagnant, which is something that can be reversed with the facilitation of vibrant events and temporary uses. For instance, blocking off Stevens Street within the Common to host an event and/or allow for a temporary use by a “pop-up” business (e.g. café, bakery, or even retail) for the week can help market the area for development.

Municipal staff, civic groups, and community volunteers can work with property owners to accommodate these

pop-up businesses, which might serve as startups or secondary locations of existing businesses. These businesses can also occupy empty commercial spaces and vacant lots during “happy hour” times, weekends, or holidays to attract area residents and visitors.

Remaining empty spaces can feature passive attractions by local artists or student projects from nearby schools for a longer timeframe until redevelopment occurs. While some existing businesses may feel uneasy at first about perceived competition, the increased activity will benefit all, and hopefully lead to new private investment and new longer-term tenants.

ACTION MATRIX

An action matrix detailing the recommendations described above is included in Appendix A. The matrix aims to provide a proper timeframe for implementation that is both appropriate in reference to the Town’s resource capacity, as well as appropriately responsive to changing climate and economic conditions. The matrix is designed as a stand-alone document that stakeholders and Town officials can use as a work-plan for implementation. Progress meetings should be organized by the MPIC on a quarterly basis to discuss status and make updates, which should also be communicated directly to partnering boards and committees. This matrix should be reviewed on an annual basis across municipal boards for refinement.

ACTION MATRIX

Littleton Common Revitalization Plan

Actions	Responsible Entity	Potential Partners	Term*	Priority**	Est. Cost	Est. Cost	Per (metric)	Notes/Resources	Potential Funding		Status
	(Board/Group)	(Org.)	(Short, Mid, Long)	(Low, Med., High)					(\$)	(\$\$)	
TRANSPORTATION											
Infrastructure Improvements / Traffic Calming											
Monitor traffic volumes and crash occurrences	Department of Public Works (DPW)	MPO, Volpe Center	Short-term	Low	\$5,000	\$5,000	5000		Grant	N	
Create working group re: new technologies & pilot projects	DPW	Transportation Advisory Council (TAC), MPO, Volpe Center	Short-term	Low	\$3,000	\$3,000	year		Operating Budget	N	
Conduct Traffic study	DPW	MPO/MAPC	Short-term	High	\$200,000	\$200,000	study	Could also be completed as an add-on to Revitalization Planning Project	Grant or MAPC	N	
Establish electric vehicle incentive program/charging stations	DPW/Electric Light Department	MAPC	Mid-term	High	\$2,300	\$6,000	EV port	https://www.mapc.org/our-work/expertise/clean-energy/clean-vehicle-projects/	MAPC Tech. Assistance	N	
Develop student-based transportation projects	TAC	School Committee, Minuteman Community College	Mid-term	Low	\$6,000	\$6,000	year		Grant	N	
Discuss transportation network changes with Mass DOT	DPW, Mass DOT	MPO/MAPC	Long-term	High	\$0	\$1,000			Operating Budget	N	
Complete connection services to MBTA Station and key locations w/in the Common	DPW	CrossTown, MTA	Long-term	Med.	\$40,000	\$100,000	shuttle	Depends upon shuttle capacity and equipment	Grant	N	
Pedestrian-Friendly Alternatives											
Secure Funding	Selectmen		Short-term	High	\$0	\$1,000		Prepare proposal for 2020 Town Meeting	Ch 90, FTA, Mass DOT	N	
New crosswalks	Selectmen	MPO, Mass DOT	Long-term	High	\$6,000	\$6,000	crosswalk		Ch 90, FTA, Mass DOT	N	
Bike Lanes	Selectmen	MPO, Mass DOT	Long-term	High	\$500,000	\$500,000	mile		Ch 90, FTA, Mass DOT	N	
GREEN INFRASTRUCTURE											
Climate Resilience and Stormwater Management											
Prioritize green infrastructure techniques in public and private projects that reduce water volumes and flood potential	DPW, Planning Board	MAPC	Short-term	Low	\$1,000	\$3,000		Internal and site plan policy changes	Operating Budget	N	
Implement water collection and reuse mandates	DPW, Planning Board	MAPC	Short-term	Low	\$1,000	\$3,000			Operating Budget	N	
Consider implementing a drainage fee to pay for increased costs associated with MS4 compliance	DPW, Planning Board	MAPC	Mid-term	High	\$5,000	\$10,000		Depending upon extent of assessment to implementation	Grant	N	
Implement the Smart Sewering Program											
Market the capabilities and benefits of the CWERC to property owners and development community	Sewer Committee	MPIC	Short-term	High	\$1,000	\$3,000		Depending upon publication costs	Operating Budget	N	
Revise Road Map and Matrix to include future documentation relating the smart sewer system	Sewer Committee	MPIC	Long-term	Low	\$0	\$1,000			Operating Budget	N	
ECONOMIC INCENTIVES											
Sustainable, Environmentally-Friendly Development											
Create and adopt density bonuses	Planning Board		Short-term	High	\$1,000	\$3,000		Could be accomplished w/in FBC (see Regulations)	Operating Budget	N	
Establish streamlined permitting	Planning Board, Selectmen		Short-term	High	\$1,000	\$3,000		Could be accomplished w/in FBC (see Regulations)	Operating Budget	N	
Create subsidies and grants for use of green infrastructure	Planning Board, Selectmen	MassDOT, Conservation Commission	Mid-term	High	\$50,000	\$100,000	project	Depends upon funding source availability (e.g., SW utility versus general fund)	Town Meeting Appropriation	N	
Create awards and recognition programs	Planning Board	MassDOT, Conservation Commission	Mid-term	Med.	\$1,000	\$4,000	award	Depends upon whether award is cash or credit based	Town Meeting Appropriation	N	

ACTION MATRIX

Littleton Common Revitalization Plan

Actions		Responsible Entity (Board/Group)	Potential Partners (Org.)	Term* (Short, Mid, Long)	Priority** (Low, Med., High)	(\$)	Est. Cost (\$\$)	Per (metric)	Notes/Resources	Potential Funding Source	Secured?	Status
b)	Financing and Economic Development											
i	Participate in the MA Econ. Development (tax) Incentive Program	Selectmen	EDC	Mid-term	Med.	\$0	\$1,000		Planning, grantwriting	Town Meeting Appropriation	N	
ii	Establish mechanism for public investments	Selectmen		Long-term	High.	\$1,000	\$4,000		Planning, coordination, marketing	Town Meeting Appropriation	N	
iii	Establish municipal-sponsored revolving loan funding program	Selectmen		Long-term	High.	\$500,000	\$1,000,000	year		Bond, Loan	N	
4	ZONING AND REGULATION											
a)	Zoning for Revitalization											
i	Create Form-Based Code (Regulations and Plan)	MPIC		Short-term	High	\$42,000	\$42,000			Town Meeting Appropriation	Y	
b)	Regulation Changes											
i	Create/Update Low Impact Development/Stormwater Regulations	DPW		Short-term	High	\$30,000	\$30,000		Could be completed as an add-on to Revitalization Planning Project	Town Meeting Appropriation	N	
ii	Change Site Plan Rules	DPW		Short-term	Med.	\$3,000	\$3,000			Internal Budget	Y	
ii	Revise Wetlands Regulations	Conservation Commission		Mid-term	Med.	\$3,000	\$3,000			Internal Budget	Y	
c)	Expand upon the current market and economic impacts analysis to understand real estate marketing potential, and implement targeted marketing actions.											
i	Secure Project Funding	MPIC, Selectmen	Finance Committee	Short-term	Med.	\$0	\$0		Could be completed as an add-on to Revitalization Planning Project	N/A	N/A	
ii	Issue RFP, Hire Contractor	Planning Board, MPIC		Mid-term	Med.	\$0	\$0			N/A	N/A	
iii	Complete Analysis	Planning Board, MPIC		Mid-term	Med.	\$35,000	\$35,000			Town Meeting Appropriation	N	
iv	Integrate w/Revitalization Plan	Planning Board, MPIC		Mid-term	Med.	\$5,000	\$5,000			Town Meeting Appropriation	N	
5	PUBLIC OUTREACH											
a)	Engagement and Marketing											
i	Ongoing (seasonal) public programming	Parks & Rec.		Short-term	Low	\$3,000	\$5,000	year	Parks & Rec is also a community outreach entity in which their services could be solicited to coincide with other Town-wide events	Town Meeting Appropriation	N	
ii	Develop project noticing policies	Planning Board	Town Clerk, Counsel	Short-term	Med.	\$1,000	\$3,000		Could be accomplished w/in FBC (see Regulations)	Operating Budget	N	
iii	Establish new community meeting requirements prior to project proposals	Planning Board	Town Clerk, Counsel	Short-term	Med.	\$1,000	\$3,000		Could be accomplished w/in FBC (see Regulations)	Operating Budget	N	
iv	Ensure that development plans address the needs of all populations	Planning Board	Affordable Housing Trust	Short- to mid-term	High	\$0	\$1,000		Typically accomplished through a regulatory requirement and/or review process	Operating Budget	N	
b)	Business Incubators and Co-Working Spaces											
i	Assist start-up businesses	Economic Development Committee (EDC)	Littleton Business Assoc.		Med.	\$2,000	\$5,000	business		Town Meeting Appropriation	N	
ii	Subsidize and/or facilitate co-working spaces	EDC	Private investors		Med.	\$6,000	\$10,000	office		Town Meeting Appropriation	N	
c)	Pop-up and Temporary Businesses											
i	Event Planning	MPIC	Parks & Rec.	Short-term	Low	\$0	\$1,000		Depends upon size of event	Operating Budget	N	
ii	Establish temporary art displays	MPIC	Parks & Rec.	Short-term	Low.	\$1,000	\$5,000	"gallery"		Town Meeting Appropriation	N	
iii	Establish pop-up businesses	MPIC	Littleton Business Assoc.	Mid-term	Med.	\$1,000	\$5,000	shop		Town Meeting Appropriation	N	

* Term durations were estimated based upon a sequence of events required for subsequent actions and/or level of effort needed to begin and start the action using currently available resources.
** Priorities were estimated based upon discussions with town officials and stakeholders during the course of the Revitalization Project. These priorities should be reviewed and revised, as needed by each lead board representative.

