

**VISIONING PHASE REPORT FOR THE
CANAL DISTRICT MASTER PLAN**

TURNERS FALLS, MA

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1.0 ACKNOWLEDGMENTS

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2.0 PROJECT SUMMARY

2.1 Introduction

The Canal District of Turners Falls, Massachusetts is a narrow island between the Connecticut River and a hydro-power bypass canal. Since the 19th century, the island has been home to various mill buildings such as a cutlery company, paper company, and a coal-fired, co-generation power plant. For decades the town's economy has been shifting away from heavy industry to a service economy, leaving many of the buildings and surrounding site underutilized, vacant, or deteriorating. Several catastrophic mill fires, canal bridge closures, and failed land development have led to large portions of the Canal District degrading into a blighted state. In recent years, the Town has systematically acquired buildings and land within the Canal District so that a community-supported master plan can be developed and implemented.

The former paper mill, 36 Canal Road, is a privately owned mill within the Canal District and is currently being rehabilitated. It is the first new private investment in the district for decades. Furthermore, two major investments have been planned that directly benefit the district: MassDOT's replacement of three aged bridges serving the district, and FirstLight's recreational investments at the riverfront. The Canal District presents an opportunity for reactivation of the historic riverfront, potentially benefiting the adjacent downtown area of Turners Falls.

Through guidance by MassDevelopment, a design team including Dietz and Company Architects, Place Alliance, SLR Consulting, and Camoin Associates was assembled to explore future use options for the district through this master planning study. See [Image 2.1A](#) for Study Area Map.

2.2 Methodology and Process

The primary purpose of the Master Plan Study is to survey, evaluate, and provide short-term and long-term recommendations for the Canal

District. The study was performed in two-phases: the Investigation Phase and Visioning Phase.

Investigation Phase

The Investigation Phase provided a summary of the existing conditions of the Canal District. Elements evaluated during the Investigation Phase include:

- Utilities and Infrastructure
- Property and Easements
- Surrounding Environment
- Building Assessments
- Primary and Secondary Markets

The information collected was consolidated, summarized, and evaluated in an Investigation Phase Memorandum. The findings within the memorandum assisted the team in developing a list of opportunities and constraints for the site which would inform the Visioning Phase. For more detailed information regarding site history, existing conditions, and the opportunities and constraints of the Canal District, refer to [Appendix E - Investigation Phase Memorandum dated 7/21/2022](#).

Community Engagement

The Canal District has been a major component of the identity of Turners Falls, so it was critical to provide opportunities for active community participation concerning its future. The Master Plan implemented an iterative process that prioritized the development of the design team's plan and collecting feedback from the public. This strategy was achieved with a series of robust public meetings that took place on 5/24/2022, 7/26/2022, and 10/27/2022. See [Image 2.2A](#).

This approach of sharing timely information encouraged community engagement and gave the public time to react to the design team's ideas before they were included in the redevelopment plan. It is believed that the community meetings were successful in informing the residents to a degree that



2.1A Study Area Map

created a more informed understanding of the decisions that led to the final Master Plan for the district.

Prior to the completion of the Visioning Phase Report, the team presented its redevelopment plan to the Town of Montague. A Matrix was created to track community comments and team response from this meeting. See [Appendix D - Public Meeting Decision Matrix](#).

Visioning Phase

The Visioning Phase built on the findings from the Investigation Phase to develop a master plan for the Canal District. Description of the redevelopment plan is organized in the following sections:

- **Guiding Principles and Characteristics:** Used to determine design strategies for the various properties within the work area.
- **Existing Conditions and Zone Designations:** A summary of the Investigation Phase that aided team in decision-making process for the proposed redevelopment plan.
- **Design Intent Narratives:** Description of the design intent for the various work zones.
- **Feasibility and Constructibility Overview:** A review of the constructibility of the site development plan.
- **Implementation Plan:** Description of strategies for a successful implementation of the site development plan.
- **Redevelopment Scenarios:** A discussion of the mix of potential uses for each concept and relative proportion of their use of the land.

2.3 Executive Summary

The description of the proposed redevelopment plan is broken down into two sections. In [Section 3 – Visioning](#), the redevelopment of the district is described by each zone that were designated in the Investigation Phase. Section 3 also reiterates some of the key findings from the Investigation Phase and their impact on the final redevelopment plan.

The team identified major limitations on the development opportunities in the Canal District. These include:

- Extremely limited vehicular access to the site and water fronts
- Dilapidated building and utilities infrastructure resulting in mill buildings that are not feasible for reuse
- Overgrown, steeply sloping topography and river frontage

It was determined that uses requiring built forms are likely not feasible throughout most of the district. This condition may change and so the team proposes a plan that would prepare the site for a safe, passive use until development can be achieved in the future. The strategy proposed in the Master Plan includes:

- Performing selective demolition work to remove unstable and unsafe buildings, infrastructure, and construction debris
- Preparing the site to promote attractiveness for future development
- Preparing the district to benefit from and coordinate with the implementation of the new Turners Falls bridge across the power canal and river
- Reintroducing native vegetations species with minimal maintenance needs
- Providing routes throughout the site that are walkable and accessible for all users
- Implementing an interpretive walking path at the location of the former Strathmore Mill Complex (20 Canal Road) that depicts the district's industrial history
- Providing space for remembrance and historic interpretation
- Implementing an overlook within the old coal plant
- Preparing the coal silo for a high visibility public art project

Note, it is critical to provide a plan to demolish the existing infrastructure in the district as soon as possible. Structural failures of the existing buildings pose life safety risks and could negatively affect the Connecticut River ecosystem. This Master Plan comes at a specific

moment in time with the major investments by MassDOT and FirstLight, alongside the ever-growing passion of the Montague residents, it is critical to begin the implementation of these recommendations as soon as possible.

Section 4 – Final Recommendations expands on the redevelopment plan and provides long-, medium-, and short-term recommendations for the district’s success. Included in this section is phasing considerations that must take place before future demolition and construction work, as well as an evaluation of financial feasibility for some of the zones and a list of potential funding sources.



2.2A Image of Public Meeting Taken Place on 10/27/2022

3.0 VISIONING

3.1 Guiding Principles and Characteristics

At the beginning of the study, it was important for the team to establish goals for the redevelopment of the district. The revitalization of this site would acknowledge the various industrial and cultural histories associated with Turners Falls while simultaneously setting a framework for future growth in the town. The principles established were:

- To engage and energize the Turners Falls community
- To transform the Canal District in a way that would most benefit the town
- To attract public and private investment

Characteristics

A number of desired site characteristics were identified as a strategy for achieving the guiding principles. The characteristics include:

Circulation: Provide a safe and comfortable circulation network throughout the various zones within the site including walking, biking, and driving (for maintenance or emergency).

Welcoming Environment: Create a space that links the waterfronts with a mix of complementary uses, offering options for recreation, community gathering, public art, and reflection.

Nature and Views: Remove non-native plants and restore the district's vegetation to increase biodiversity, provide year-round visual interest, improve perceived safety by reducing understory growth, and ensure views to the river and downtown Turners Falls.

Industrial and Cultural Histories: Provide spaces and art for reflection and interpretation of the various industrial and cultural histories related to the site.

River Access: Provide a master plan that offers

a variety of access options to the Connecticut River for various users including visual, recreational, residential, commercial access.

3.2 Existing Conditions and Zone Designations

Existing Conditions

There were several existing characteristics of the Canal District that led to the proposed redevelopment plan. The primary drivers that were established during the Investigation Phase included access limitations, buildings and utilities conditions, and the natural context. For additional information regarding existing conditions of the Canal District, refer to [Appendix E – Investigation Phase Memorandum](#).

Access: Most of the existing bridges (pedestrian and vehicular) that connect to downtown Turners Falls are permanently closed or have qualities that severely limit their use. The only remaining pedestrian bridge is located at the northern portion of the site, 8 Canal Road. Additionally, there is an easement along most of the canal edge that limits pedestrian access to the sites.

Building and Utility Infrastructure: Existing building and utility infrastructure within the work area is generally in a state of advanced disrepair. All existing site utilities within the study area require extensive evaluation and testing to support reuse in future development and ensure capacity and building code requirements. Additionally, the Strathmore Mill, located at 20 Canal Road, has been evaluated to be in severe distress and blighted. The series of ten, brick masonry buildings have been unoccupied for years, and consequently have not been maintained. Typical problems include extensive mortar decay in brickwork, cracks and openings within floor and roof assemblies, failed window arches, large amounts of water damage, and critical building envelope and structure failures. Due to the state of advanced deterioration of the mill, the team proposes a strategy for demolition that should be

performed as soon as possible.

Natural Context: Much of the vegetation has become overgrown with non-native species. The existing vegetation interrupts routes and blocks views to and from the island. Additionally, topography from the river to downtown Turners Falls has an average grade change of approximately forty feet which would have a great impact on any future site development relating to accessibility. The natural and ecological contexts of the island were heavily considered to ensure safe and accessible walking paths in addition to the improved visibility.

Zone Designations

The study area is organized into five zones. The characteristics described previously, along with the use options provided in the market analysis aided in revealing potential uses. These zones are described in [Table 3.2A](#). Refer

to [Image 3.2B](#) for Zone Key Plan. For further information regarding existing conditions and zone designations, refer to [Appendix E – Investigation Phase Memorandum](#).

It is important to note that there are three properties within the Canal District that are not included within the designated zones as they are privately owned. These properties include:

- 36 Canal Road – Owned by Milton Hilton, LLC. This property is currently being rehabilitated and a portion of the property is planned for a cannabis growing facility. There is more opportunity for uses within the remaining space.
- 42 Canal Road – Owned by Great Falls Realty Trust. Remains as a privately held parcel.
- 15 Power Street – Owned by Power Street, LLC. Remains as a privately held parcel. It is understood that this property is currently being planned for redevelopment.

Zone	Description	Use Opportunities
Zone 1 : Northern-most point of 8 Canal Road	Direct access to riverfront.	Activated recreational zone.
Zone 2 : Southern portion of 8 Canal Road	Vacant lot with vegetation and remaining foundations with very restricted access.	Use as a naturalized zone. Potential for a quiet reflection space and place to display public art.
Zone 3 : 20 Canal Road, Most of Strathmore Mill Complex	Former mill facility with limited access. Buildings in distress.	Former mill with limited access. In need of <i>immediate</i> demolition and stabilization. Potential to do partial demolition and have a space for historic interpretation.
Zone 4 : Building 11 of 20 Canal Road	Most feasible building for reuse/ re-purposing.	Could be used as an industrial or storage use.
Zone 5 : 11 Power Street	Most options for access (vehicular and public).	Space allocated for affordable housing / residential use.

3.2A Key Findings Table



3.2B Zone Key Plan

Overall Master Plan Strategy

Zone 1- Northern Portion of 3: The primary goal of the proposed redevelopment of the Canal District is to stabilize the site as a safe and accessible space for pedestrians to use passively. Due to the findings and limitations previously mentioned, uses that involve occupied buildings are not seen as viable (excluding Zone 5) and too costly, excluding privately owned properties that contain buildings. It was determined that Zone 1 through a portion of 3 would take on a passive use. Taking a passive approach for these zones provide a greater opportunity for reflection and historic interpretation. By decommissioning the site, demolishing and stabilizing old infrastructure, and revitalizing the natural environment, the island will be in a condition to welcome users as it is, while maintaining a framework for future development of the site. The result is a proposed post-industrial, passive open space for most of Zones 1 through 3.

Southern Portion of Zone 3 - 4: The southern portion of Zone 3, following the natural separation created by the tailrace of the hydro plant at 16 Canal Road, will be fenced off, cleaned, and reserved for industrial, commercial, or storage use. The remaining building in Zone 4 can likely be further developed, but it is critical that the Town of Montague address critical infrastructure issues of the site as soon as possible. Both of these zones will not be accessible to the public.

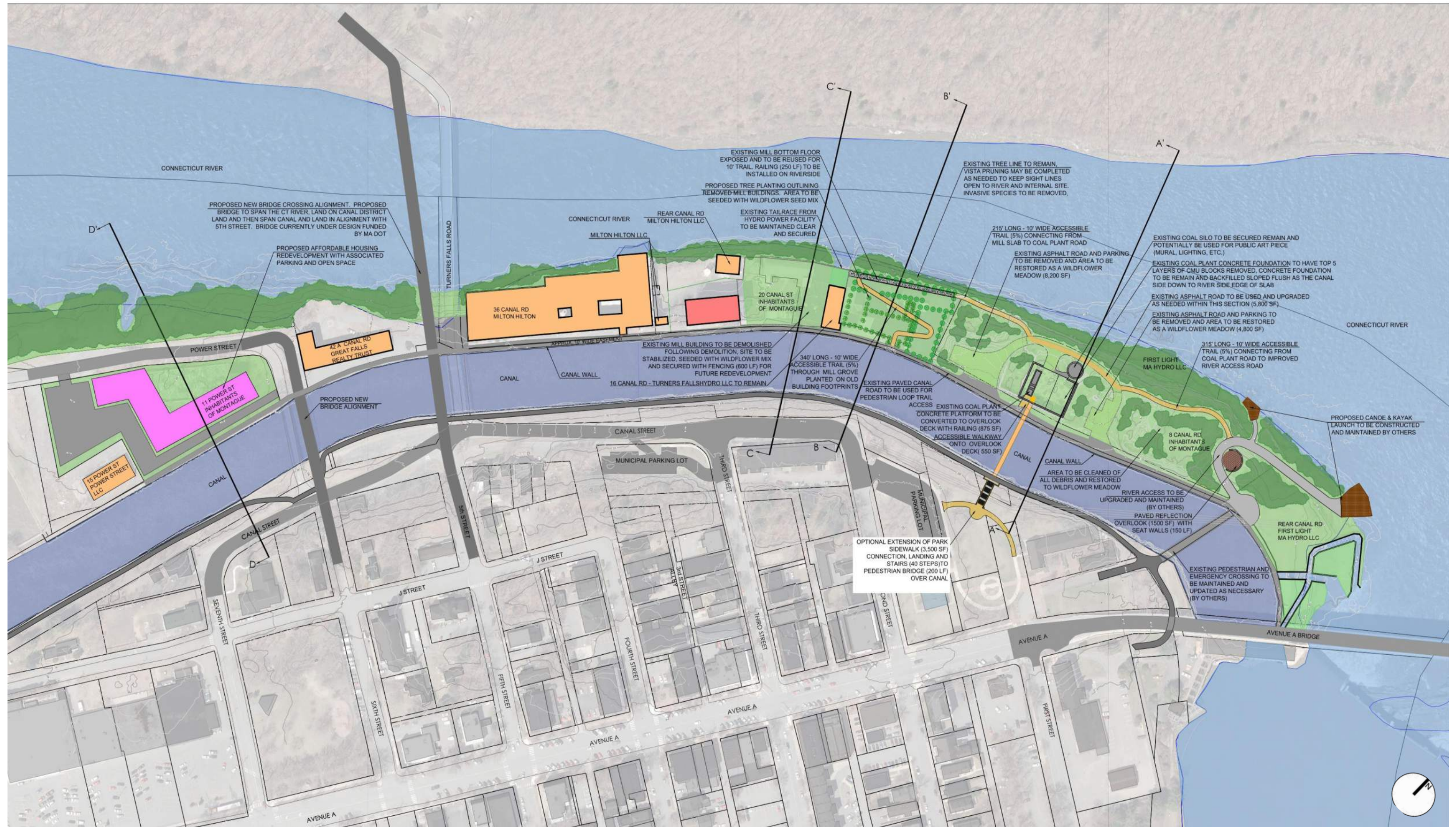
Natural Environment: Management of the existing vegetation is proposed throughout the site to improve openness, provide visual connectivity, and promote native species. This process will include the removal and mitigation of non-native species, trimming trees to remove dead or view-obstructing branches, and seeding the area with a native pollinator-friendly wildflower mix. Mature trees within the district will be managed to enhance visual connections. Overall vegetation improvements will help stabilize the site, increase biodiversity, offer native sources of food and habitat, and give visual interest throughout the year. No

severe intervention with the native species and trees is planned that would disturb local wildlife patterns. This landscape management and planting regime will be applied to Zones 1 through 3 and portions of Zone 4. This approach is affordable to implement, requires limited annual maintenance, and does not restrict opportunities for future site development, if desired.

Art: Each zone has unique characteristics and its own site-specific history in which art and signage can help convey, accentuate, and appreciate those qualities. The art community within the Town of Montague is thriving and offers a great opportunity to curate local art installations throughout the site including kinetic or stationary sculptures, reclaimed items found during deconstruction and demolition of the historic mill structures, informative and interpretive signage, murals, botanical exhibitions, or lighting displays. Narratives created through art installations can offer an enhanced experience, a unique sense of place, and play a role in storytelling.

Zone 5: As noted in the Investigation Phase Memorandum, Zone 5 poses the greatest opportunity for redevelopment into an occupiable building use. The property, which formerly contained the former Griswold Cotton Mill, was cleaned by EPA in 2021. Directly adjacent to the site is 6th Street Bridge which is slated to be replaced by MassDOT in 2027 and provides direct access to 11 Power Street. This new bridge would have capabilities of bringing new water and sewer services to the site. Easements that would make public access limited do not extend to this portion of the island. Additionally, based on the market analysis, providing housing is the greatest need for the Turners Falls area. Due to its availability for public access, the ease of providing new utility systems, and the fact that the site has already been cleared, Zone 5 is recommended to be developed into multi-family, affordable housing.

Locations of the proposed redevelopment descriptions can be viewed on [Image 3.2C](#).

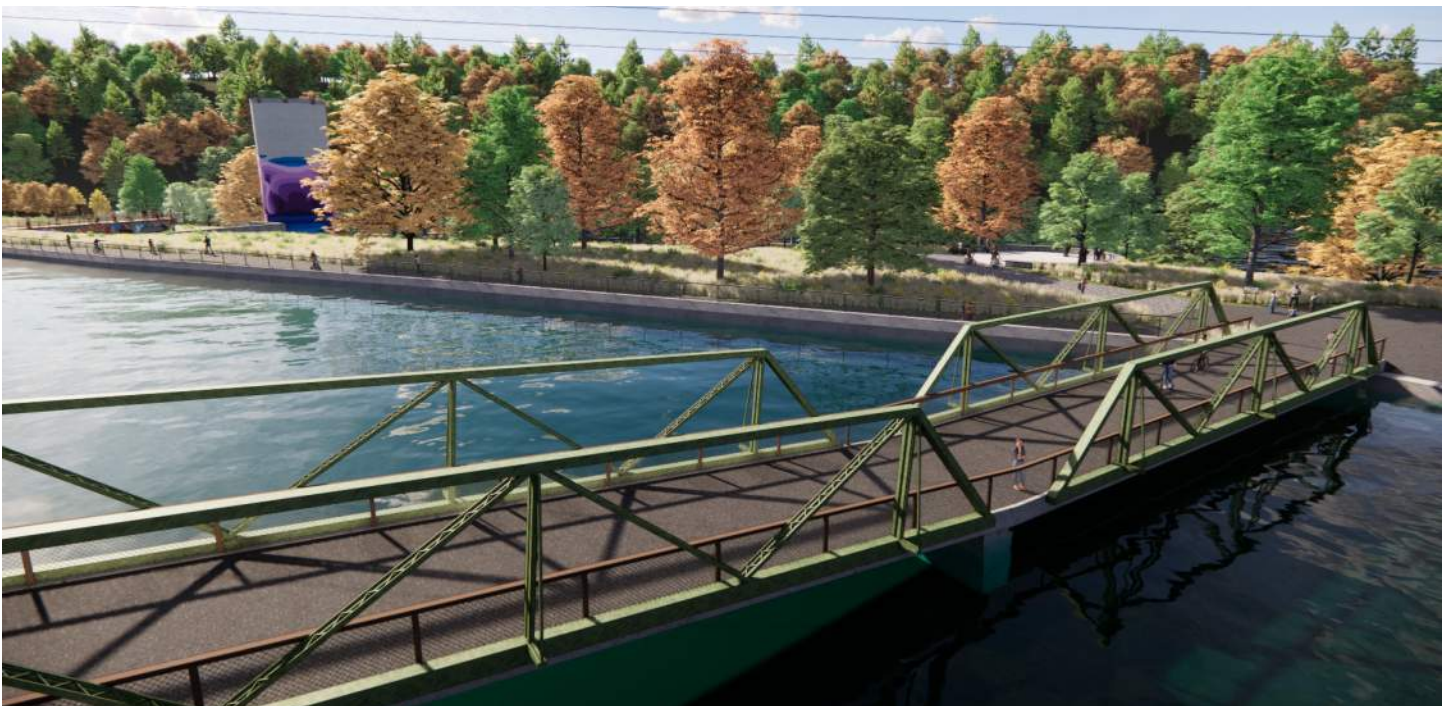


3.2C Canal District Proposed Redevelopment Plan

3.3 Zone 1: Northern Portion of 8 Canal Road

Zone 1 is the northern-most site and contains a portion of 8 Canal Road. It is proposed to have an activated recreational use. Zone 1 provides the only existing pedestrian access point into the Canal District, a FirstLight-owned bridge that crosses over the canal from the Canalside Rail Trail. This connection is proposed to remain and act as the primary pedestrian access point for the Canal District. Repair and maintenance of the bridge is recommended to improve safety and accessibility along with verification of capacity for continued use. [See Image 3.3A.](#) As pedestrians reach the end of the bridge at the island side, there will be a paved plaza lined with trees that will act as a terminus for Canal Road, doubling as a vehicular turnaround for service and emergency vehicles. It is anticipated that the existing river access within this zone will be improved with an accessible surface that leads to the river and will end at two new canoe/kayak launches. These launches will be constructed and installed by FirstLight as a part of their FERC relicensing agreement. [See](#)

[Image 3.3B.](#) Before reaching the launches, as the access road wraps around towards the river, there will be a circular hardscaped terrace with a seating wall. This location will create a small gathering area. [See Image 3.3C.](#) This space is a vital aspect of the master plan as it is intended to provide an area for remembrance and reflection. In addition to the industrial history that is still visibly present throughout the study area, the site holds strong ties to local Indigenous histories and ceremonies. This reflection space will provide opportunities for the local Indigenous community to interact with the site in a way that has previously been limited. In this space, visitors can either enjoy passively or can be programmed by groups as a way to engage with the site and river, utilizing the reclaimed space. Note, that this design acts as a place holder as the final design should be decided by working with local Indigenous representatives. [See Image 3.3D.](#) The approach to the remaining site is similar to Zones 2 and 3. Excluding the planned paths, reflection space, and launches, the area will be cleaned of all remaining mill debris, removed of all invasive species, and restored as a wildflower meadow.



3.3A Pedestrian Bridge at Zone 1





3.3B Canoe Launch



3.3C Remembrance Space



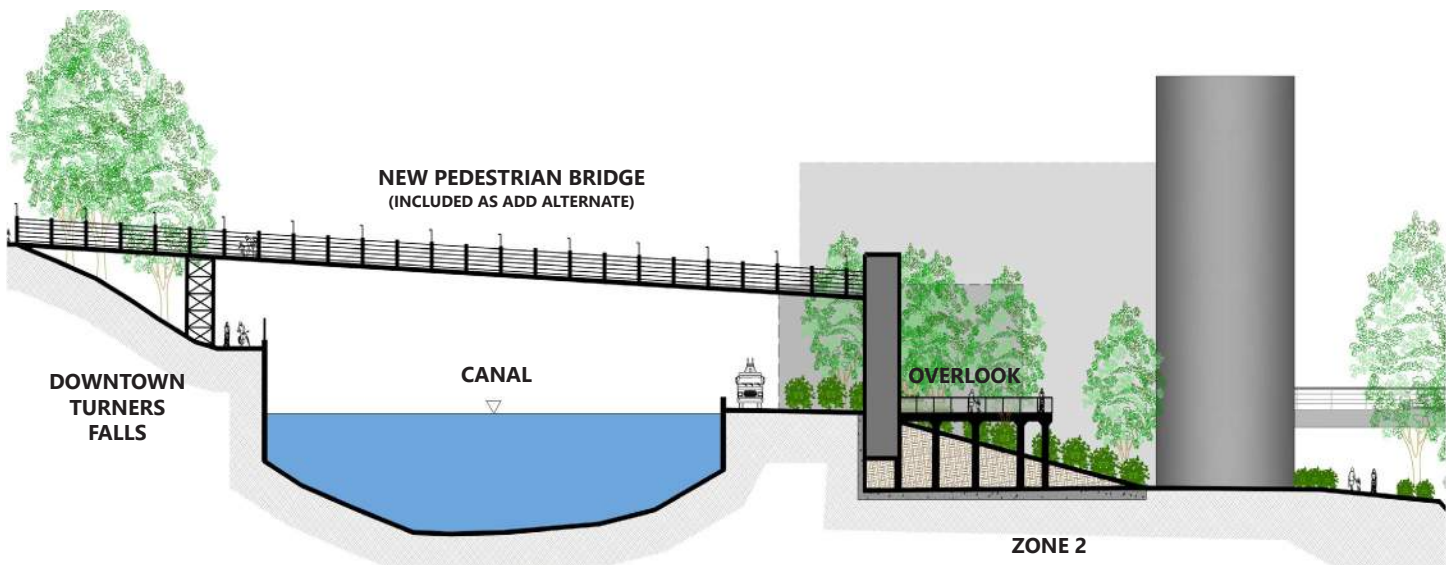
3.3D Remembrance Space

3.4 Zone 2: Southern Portion of 8 Canal Road

The majority of Zone 2 is currently a vacant lot with a few remaining elements of a co-generation coal power plant and silo. The remnants of the structure and foundation is currently surrounded by paved access roads and vegetation. The primary goal for this zone is to partially demolish structures and debris that are no longer viable and pose safety concerns. The portion of Canal Road surrounding the coal plant site will be demolished and the area north of the access road will be leveled. Once staging is complete, this site may initially be used for staging for the demolition of the adjacent property and structures at 20 Canal Road. Following the site being cleared, it will be ready to transition to a passive overlook that provides views to most of the industrial island and the Connecticut River below. See Image 3.4B and 3.4D. This overlook would reutilize the free-standing structure within the former coal plant. By removing the first few feet of the surrounding foundation walls, the top of the free-standing structure can be accessed from the path at the canal side, allowing users to 'enter' the former plant at a heightened viewpoint. With the addition of the boardwalk

platform, informational signage, benches, and guardrails, this platform will provide a 360-degree view of the surrounding area and become a major destination spot along the canal district walking path. The lower portion of the coal plant will be filled in with soil and ground up brick from demolished buildings, creating a more consistent slope within the area. See Image 3.4A. The site will then be seeded with a native wildflower mix. Canal Road and a lower route at the riverside (See Image 3.4C) will bookend this zone with paths, however there will be no connector trails within this zone between the canal and the river but there will be some nearby in Zones 1 and 3.

Additionally, the coal silo is one of the most prominent industrial features of the Canal District due to its vertical nature and the absence of surrounding structures. It can be seen from both bridges that enter the Village across the Connecticut River and from portions of downtown and, therefore, is a prime location for artwork or recreational uses. See Image 3.4D. Options include wrapping it with a mural, adding lighting, projected art, or a rock-climbing apparatus. This would be a great opportunity to re-brand the industrial island and use art to help introduce a new identity.



3.4A Section at Zone 2 Overlook with Optional Bridge Connection





3.4B Overlook at Zone 2



3.4C Tree-lined Path at Riverside in Zone 2



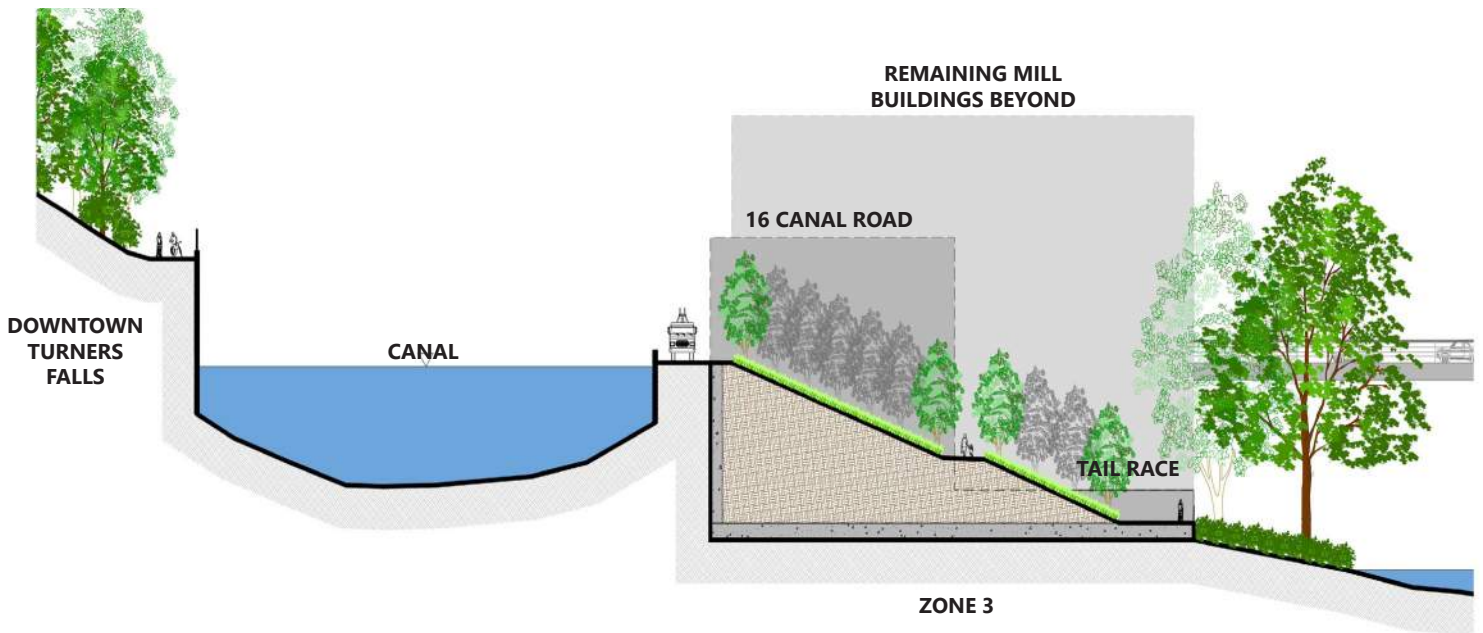
3.4D Overlook with view of Coal Silo

3.5 Zone 3: 20 Canal Road

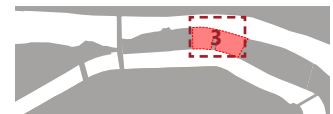
Zone 3 encompasses the majority of 20 Canal Road, also known as the former Strathmore Mill/ Keith Paper Mill complex. As determined in the Investigation Phase, the mill is structurally compromised, posing a safety hazard which requires large portions to be demolished with the remaining ruins to be stabilized. The primary use of the site is proposed to become the primary destination for a post-industrial, passive open space. During demolition of the site, portions of the building walls, foundations, and basement slab will be preserved as ruins to convey the site’s former use as a paper mill and offer interpretive interest for visitors. The viability of which portions can be preserved will be revealed as demolition work begins when the structural integrity is better analyzed and understood. After regrading the site, a meandering, accessible path will weave its way down from the Canal Road towards the river with linear tree plantings outlining the former mill walls and highlighting the remaining mill structures or reclaimed mill equipment. See Image 3.5B and 3.5C. The pathway takes a zig-zag approach throughout the site to maintain an accessible route through the sloping site for

all users and creates a closed loop with paths in Zones 1 and 2. See Image 3.5C. There is minimal existing vegetation within this zone since it has historically serviced industrial uses. Similar to Zones 1 and 2, the ground will be planted with a native wildflower meadow mix, including the portion of the site west of 16 Canal Road. Throughout the path, benches and interpretive signage will be incorporated creating a place of rest and learning.

Additionally, 16 Canal Road (Building 9 within the complex) shares three walls with the other buildings of the mill complex. It is a separate and privately owned hydro plant that is required to remain. It is critical during the process of demolition to safely work with the ownership of 16 Canal Road to ensure the stability of the building and tailrace. See Image 3.5C. With the 16 Canal Road building remaining, it will function as a terminus for the pedestrian-accessible, post-industrial, passive open space that is composed of Zones 1,2, and a portion of 3. The remainder of Zone 3 is proposed to be graded similarly and fenced off to prohibit pedestrians from access to the rest of the site, which will likely continue as an industrial use.



3.5A Section at Zone 2 Overlook with Optional Bridge Connection





3.5B Walking Path at Former Strathmore Mill with Remaining Building Facade, Foundations, and Interpretive Art



3.5C Walking Path within Zone 3, 16 Canal Building and Tailrace at far Right

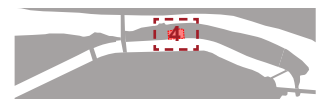
3.6 Zone 4: Building 11 of 20 Canal Road

Zone 4 contains Building 11 of the Strathmore Mill complex. This building has been physically severed from the rest of the complex due to Building 10 burning down in 2007. During the Investigation Phase, it was determined that Building 11 appears to be in the best position for renovation and reuse as its envelope exhibits better structural integrity than the other nine buildings. See Image 3.6A. Note that Building 11 will still require significant work before occupancy which includes: addressing fire damage, envelope issues, upgrades to comply with building and accessibility code, and utilities. Before any major demolition work happens on the island, it is recommended that the Town divide the property from the rest of the Strathmore Mill Complex (20 Canal Road) and send out an RFP for the property to see if there is any interest in redevelopment. If not, the building should be included as part of the demolition plans for the mill complex.

Note, the building is currently adorned with an art installation on the canal side façade and that could remain or replaced with a similar new installation. The existing installation is a series of mirrors set on the windows. Each window has panes that spin with the wind creating movement and reflections. Members of the Town of Montague have expressed their adoration of this installation, and saving this piece is highly recommended.



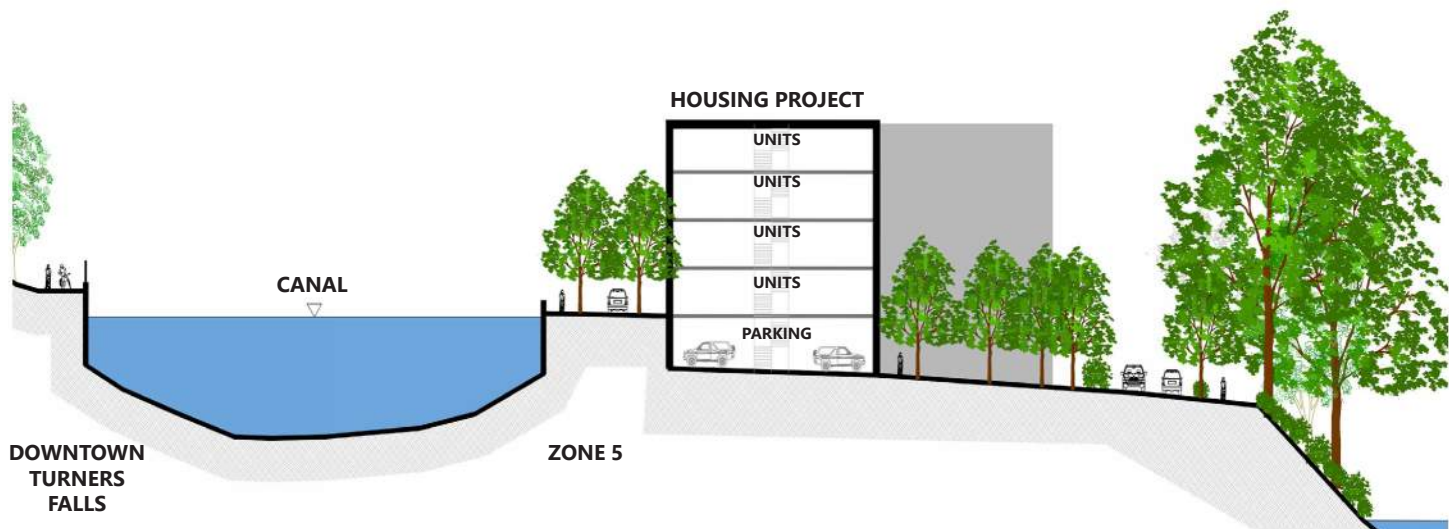
3.6A Proposed Building 11 to Remain (36 Canal Road in Foreground, 16 Canal Road Beyond)



3.7 Zone 5: 11 Power Street

Zone 5 is located at 11 Power Street. It is the site of the former Griswold Cotton Mill that was destroyed by fire. This location has considerably more use options than other areas of the Master Plan as it still has utility infrastructure and vehicle/pedestrian access through a bridge. During the market analysis performed in the Investigation Phase, housing was determined to be the greatest need within the Town of Montague. Zone 5 is proposed to be redeveloped for residential use as multi-family, affordable housing. See Image 3.7B. The building would be a five-story, podium structure (4+1), and would encompass amenities and under-structure parking on the first floor with the remaining upper floors for housing units. See Image 3.7A and 3.7C.

With a mix of one-, two-, and three-bedroom units and space for surface parking on the site, the building has an estimated gross floor area of 155,000 square feet. Note that this design scheme maximizes the building footprint for estimating purposes. It may be required to reduce the building size to bring costs down. The site currently has limited vegetation due to its former use and the demolition that has taken place to remove the former mill. There are some trees along the canal side of the property that could remain pending an assessment from a certified arborist and depending on any possible plans to improve the former railroad alignment between the proposed building and the canal. See Image 3.7D.



3.7A Section at Zone 5 Through Proposed Housing Project





3.7B Overview of Zone 5 and Housing Project, Remaining Mill Buildings and Turners Falls Bridge Beyond



3.7C Housing Project at Parking Lot Looking at Entry



3.7D Proposed Housing Project from New Bridge

4.0 FINAL RECOMMENDATIONS

4.1 Feasibility and Constructibility Overview

The existing mill buildings at the Strathmore Mill Facility (Zone 3 and 4) are considered unreinforced masonry bearing walls with flexible diaphragms. Most of the buildings share common walls with adjacent areas, and therefore, separation of the buildings is not possible without removing entire portions of buildings. The site complex is vacant except for a hydro plant at 16 Canal Road, which is sealed from the public. A comprehensive structural analysis will be required to determine the best approach for stabilizing 16 Canal Road while removing portions of the surrounding Strathmore Mill. Asbestos containing building materials, lead paint chips, and other material hazards have been identified on site. Additionally, the existing buildings are considered blighted and are in poor condition due to time, weather, and neglect. Most of the buildings are considered hazardous to enter. Amending the existing June 2019 Tighe & Bond Strathmore Mill Complex Abatement and Demolition Plan based on the outcome of this report is recommended to be performed and executed as soon as possible.

In addition, the existing utilities need to be considered as part of future work. Although no longer operative, there are four oil boilers fed by a 10,000-gallon oil tank located on site. Throughout the facility, there is a steam distribution piping system which has been out of use for an unknown time. There have been upgrades to the fire protection system on site, notably in 2003, five buildings were updated with sprinklers. The system is served by two 8" water lines. One water line is connected over the pedestrian bridge and was recorded as in poor condition. It is shut off on the Canal Road side. Plumbing is not functioning as it is also fed from the 8" pipe on the pedestrian bridge. The other pipe runs below the right of way on the canal side of the buildings and feeds both fire protection and the 16 Canal Road domestic supply, it is unclear if the pipe is currently active.

Sanitary discharge pipes go over the pedestrian bridge in a sewer line in poor condition. Both 20 Canal Road and the 16 Canal Road hydro plant are served by 13.8 Kw overhead wires that travel over the hydro plant. The primary switch for service is in the 16 Canal Road plant. Most of the buildings have been stripped of copper wiring, but there is localized wiring around 16 Canal Road to supply the fire suppression system with electricity. In total, the pedestrian bridge carries an 8" water main, sewer main, steam line and two lines from the water treatment plant all of which are inactive. At 42 Canal Road, utilities from the Power Street corridor include water, sanitary sewer, gas, and overhead electricity. At 16 Canal Road, water, sanitary sewer, gas, and overhead power are connected from Turners Falls Road. During site development, the demolition of existing utilities will be required, and the removal of inactive storage and piping will assist in reducing the number of hazards at the 20 Canal Road complex.

20 Canal Road has two notable features of underground water systems. Located in the building complex, is a weir box which is part of the canal seepage system. It is believed the seepage system runs into the river. Additionally, the hydro plant at 16 Canal Road has a raceway which is used as the outlet for the power generation. At 8 Canal Road, ground penetrating radar was used in 2013 and determined that there are likely utility corridors with larger diameter conduits located 3-4 feet below grade in the Northeast corner of the site and a second utility corridor running towards the Connecticut river. This may indicate parts of the canal seepage system. Additionally, an underground storage tank in the northeast section of the site was found. Any site development must continue to help and support the canal drainage system to ensure continued stability of the island. In 2018, a condition of no significant risk was determined at the 8 Canal Road site. This report included a geophysical survey, test pits, soil borings, and samples. Evaluation of the canal system must take priority during future work.

Most existing buildings in the project are located at 20 Canal Road. It is probable that the

weight of the masonry walls and structure of the foundation is providing lateral support for the canal and redevelopment must take canal stability into account in planning.

4.2 Phasing Considerations

The redevelopment of the Turners Falls Canal District is divided into two separate phases. Phase I consists of demolition and site preparation. Phase II includes site improvements after demolition and removal of existing structures.

Phase I

Prior to the implementation of Phase I, elements such as site access, wetlands protection, canal wall stability, and retaining the hydro plant facility must be considered with demolition and construction activities.

Site Access: Existing vehicular access to the site is from the Fifth Street bridge via the Canal Road right of way. The total width to clear the roadway is less than 15 feet with a 10-foot-wide pinch point. Additionally, there is limited area for large vehicles to turn around on-site. Large vehicles can either trespass on the abutted property, reverse through Canal Road, or would have to turn around at the northern portion of the site where there is land owned by the Town. There is another access route which utilizes the bridge located to the north-east of 20 Canal Road, however the bridge needs to be analyzed to determine the loading capacity it can handle. Additionally, there is a 12-foot-wide easement in a tunnel through the basement of the building at 36 Canal Road which can be used. Site access via the canal or river has additional complications due to the location of the dam being close to the site and the velocity of the water. To bring demolition machinery in, it is likely a built-in-place crane will be utilized. At 20 Canal Road, the 2007 fire and subsequent removal of debris created a courtyard where a crane could be staged. A crane can also be staged at the former power plant at the north end of the site. In addition,

smaller machinery will be needed to transport rubble for processing and relocation off site.

Massachusetts Wetlands Protection Act: The project site runs along the easterly bank of the Connecticut River and therefore, virtually the entire project area is within the Massachusetts Wetlands Protection Act (WPA) 200-foot Riverfront Protection area. As such, any future development of the site would necessitate regulatory review under WPA pursuant to 310 CMR 10.00. Based on MassGIS data layer information, the westerly fringes of the project area are within mapped Natural Heritage and Endangered Species Program (NHESP) Priority Habitats of Rare Species and Estimated Habitats of Rare Wildlife. Future development of the site will require NHESP review for potential impacts of rare species and wildlife.

Canal Wall Stability: Based on previous feasibility studies, the project area is comprised of man-made fill. Additionally, the canal exerts a significant hydrostatic force to the adjacent infrastructure of the mill complex. Based on historical records, there were several instances where the walls collapsed into the canal. Most notably, in 1915, there was a collapse large enough where they had to completely drain the canal. With the condition of the canal seepage system unknown, a contingency plan must be considered in case of such a collapse. Additionally, the removal of masonry foundations will require a thorough structural analysis to ensure the stability of the canal.

Hydropower Plant Facility: The Hydropower Plant was added to the 20 Canal Road Mill complex in 1907 and was the last building in the complex to be built. The current address for the plant is 16 Canal Road. Based on the sequence of previous mill development, it is likely that the building area shares walls with the surrounding buildings. A structural analysis is required with a shoring and stabilization plan to ensure stability of the hydropower infrastructure.

Construction and Demolition: Temporary pads will be necessary to support both the crane and the machinery used for processing the demolished brick into landscape fill.

Additionally, construction fencing, and sediment and erosion controls will be imperative to secure the site and to protect adjacent resource areas. Demolition is anticipated 20 Canal Road and 8 Canal Road. During demolition, hazardous material abatement will be prioritized as necessary to protect the site, construction personnel, and adjacent areas. Additionally, there is equipment inside the mill buildings which should be removed and either disposed of or salvaged off-site during demolition if it is to be used for display later. The later stage of Phase I includes using the processed brick fill and imported fill to completely cover the demolition site. The fill will be covered with loam and seed mix to create an earthen and natural landscape. It is likely that during site filling the area will be graded to comply with the expectations for Phase II.

Phase II

Phase II consists of site improvements as presented in the Canal District redevelopment plan. This includes additional sediment and erosion controls, construction fencing, earthwork, paving for accessible trails, various overlooks, and landscaping to enhance the site. After the completion of Phase II, it is anticipated that the site will be accessible and open to the public. Note that wetlands permitting, civil engineering design, and landscape design are necessary in support of the preparation of construction documents for Phase II improvements.

11 Power Street: Following the clearing of remaining foundation and non-native vegetation in Phase I, Zone 5 (11 Power Street) requires additional work to provide a site ready for a new housing development. The site should be maintained to prevent overgrowth of trees, shrubs, and other vegetation to help preserve future building potential. In addition, it is recommended that the Town build a sewer pump station prior to development of housing to make the site more viable and attractive to developers. Ideally, this system would service 11 Power Street, 15 Power Street, and 42 Canal Road.

Turners Falls Road Bridge: The Massachusetts Department of Transportation has planned for the replacement of the Turners Falls Road Bridge within the next four to five years. It is anticipated that the development plans that will be used for bidding will be completed in 2026, with the expectation that the project will go to bid in 2027. This bridge will cross the bypass canal and the Connecticut River with a potential stop on the island. It is important to note that demolition recommendations for the Canal District redevelopment are suggested to be completed before construction of the new bridge.

4.3 Opinion of Cost

The cost estimate for Phase I and Phase II are based on limited knowledge of existing building infrastructure. The itemized **Opinion of Cost can be found on Pages 22-24**. The estimate included herein is based on historical information, previous studies, and visual observations. Therefore, the basis of this estimate is an order of magnitude which is expected to be within -30 to + 50 percent of the actual project cost. The estimate is split into the two phases of construction, demolition, and site improvements.

Phase I is estimated to cost \$11,300,000, the bulk of the price of this project. The cost estimate is split between the three locations of focus: 11 Power Street, 8, and 20 Canal Road.

20 Canal Road: The total cost of 20 Canal Road is just over \$7,800,000 and is the bulk of the cost for this project. The mill complex is made up of eleven different interlocking mill structures which total over two million cubic feet of area. Buildings have been added to the site at various times and all are in poor condition. To estimate the size of this complex, a technical review of historical documents and past studies was completed to develop an understanding of building height, length, and width. Next, a chronological history was developed to determine when each building was added and how the new building connected to the buildings around it. See [Appendix F - Building](#)

Chronology Plan. This led to an extensive analysis to determine the number of stories, size, material, and expected condition of each building in the mill complex. Demolition totals at \$1,808,000. This estimate is in line with a previous demolition estimate from the 2005 Strathmore Mill Feasibility Study. Demolition is not the only cost utilized in the estimate. After demolition, the bricks will be sent to processing on site to be turned into filling material. The material will then fill in the cavities left by the removed buildings. There is an estimated 8,000 tons of fill being re-used on site. For things that cannot be turned into fill, there is a high cost of building debris disposal due to site constraints. The building debris estimate comes from a 10% assumption of total building volume being removed. Examples of items for removal include bricks that have been used in smokestacks or flooring. There is an estimated thirteen thousand tons of building debris. Existing large mill equipment will need to be removed as indicated by historical documents. It is unknown the extent of the machinery left behind, an estimated \$100,000 is being applied to assist in the removal of equipment. Note that a portion of this equipment may be salvaged and saved for future development in Phase II at 20 Canal Road.

Although most of 20 Canal Road is being demolished, the current Hydropower Plant at 16 Canal Road needs to remain. 16 Canal Road was the last building to be built into this mill complex and therefore it is likely that the stability of the hydro plant comes from the surrounding buildings which are set to be demolished. A previous study by Tighe & Bond estimated the cost of shoring and stabilization, which was then updated for inflation, to total \$1,200,000. Finally, the building complex has a record of hazardous material in and around the development project. Tighe & Bond estimated the cost, which was then updated for inflation, to total \$1,900,000. Due to the scale and limitations of the site, a contingency of twenty percent has been added to ensure that the cost estimation will encompass the complete expected cost.

8 Canal Road: The total cost of 8 Canal Road is \$300,000. Most of the estimated cost for 8 Canal comes from the demolition of the existing building structure and the filling of the cavity left by the demolition. Additionally, there is significant existing pavement which requires removal for grading and landscaping to prepare for Phase II. There is a 15% contingency on this building due to the age and hazard level of the building. Phase I has additional costs of \$1,800,000 dollars for mobilization and \$800,000 for engineering and permits. These values are determined by a typical factor found in industry.

11 Power: The total cost of 11 Power is estimated to be \$518,800. The bulk of which comes from the earthwork needed to make the site appropriate for Phase II construction. The remnants of 11 Power are primarily below ground level. To prepare the site, an excavation of four feet and the removal of brick and foundation walls is expected. Additionally, the surrounding utility and drainage structures need to be removed. The removal of the items and the earthwork accounts for 3/5 of the expected cost. Additionally, an added 15% contingency has been included due to the dilapidated and unknown condition of 11 Power Street.

Additional Phase II Information: Phase II improvements are based on concepts prepared by Place Alliance. The estimate includes added trails and expected earthwork. The contingency of this phase is 15%. Two alternates are included depending on the future needs and available future funding for Phase II. Without the additions, the total cost of Phase II is just over \$400,000. This estimate is based on current unit prices from previous projects, including MassDOT weighted unit price data, and the most recent development concept for Phase II.

Canal District Master Plan - Order of Magnitude Cost Estimate

Turners Falls Massachusetts

Prepared for: Town of Montague

SLR #15898.00026

October 14, 2022



	ITEM/DESCRIPTION	UNIT	QTY	UNIT PRICE	AMOUNT
PHASE I - DEMOLITION AND SITE PREPARATION					
11 POWER STREET					
	CLEAR AND GRUB VEGETATION	LS	1	\$ 2,000.00	\$ 2,000.00
	SEDIMENT AND EROSION CONTROLS	LF	1,465	\$ 7.00	\$ 10,260.00
	TEMPORARY CONSTRUCTION FENCE	LF	1,110	\$ 12.00	\$ 13,320.00
	CONSTRUCTION ENTRANCE	EA	1	\$ 3,000.00	\$ 3,000.00
	EARTHWORK (EXCAVATION, GRADING)	CY	3,665	\$ 60.00	\$ 219,900.00
	DEMOLITION OF EXISTING MASONRY	CY	211	\$ 300.00	\$ 63,340.00
	PROCESS CONCRETE MASONRY FOR FILL	TON	800	\$ 20.00	\$ 15,990.00
	REMOVAL OF UTILITY AND DRAINAGE STRUCTURES	EA	10	\$ 800.00	\$ 8,000.00
	LOAM BORROW	CY	1,830	\$ 45.00	\$ 82,350.00
	POLLINATOR SEED MIX	SY	10,990	\$ 3.00	\$ 32,970.00
	SUBTOTAL- 11 POWER STREET				\$ 451,130.00
	<i>CONTINGENCY (15%)</i>				<i>\$ 67,670.00</i>
	TOTAL- 11 POWER STREET				\$ 518,800.00
20 CANAL STREET					
	CLEAR AND GRUB VEGETATION	LS	1	\$ 5,000.00	\$ 5,000.00
	SEDIMENT AND EROSION CONTROLS	LF	1,400	\$ 7.00	\$ 9,800.00
	CONSTRUCTION ENTRANCE	EA	1	\$ 3,000.00	\$ 3,000.00
	TEMPORARY CONSTRUCTION FENCE	LF	800	\$ 12.00	\$ 9,600.00
	GRAVEL BORROW	CY	9,470	\$ 80.00	\$ 757,620.00
	LOAM BORROW	CY	600	\$ 45.00	\$ 27,000.00
	POLLINATOR SEED MIX	SY	2,800	\$ 3.00	\$ 8,400.00
	BUILDING DEMOLITION	CF	2,260,435	\$ 0.80	\$ 1,808,000.00
	BRIDGE DEMOLITION (UTILITY BRIDGE)	SF	2,440	\$ 30.00	\$ 73,200.00
	SHORING AND STABELIZATION (16 CANAL)	LS	1	\$ 1,200,000.00	\$ 1,200,000.00
	DEMOLITION OF EXISTING MASONRY	CY	230	\$ 300.00	\$ 69,000.00
	PROCESS CONCRETE MASONRY FOR FILL	TON	8,340	\$ 20.00	\$ 166,810.00
	DISPOSAL OF BUILDING DEBRIS	TON	8,477	\$ 50.00	\$ 423,840.00
	INTERIOR EQUIPMENT REMOVAL	LS	1	\$ 100,000.00	\$ 100,000.00
	HAZARDOUS MATERIAL ABATEMENT	LS	1	\$ 1,900,000.00	\$ 1,900,000.00
	SUBTOTAL- 20 CANAL				\$ 6,561,270.00
	<i>CONTINGENCY (20%)</i>				<i>\$ 1,312,260.00</i>
	TOTAL- 20 CANAL STREET				\$ 7,873,530.00

8 CANAL STREET					
	CLEAR AND GRUB VEGETATION	LS	1	\$ 5,000.00	\$ 5,000.00
	TEMPORARY CONSTRUCTION FENCE	LF	1,000	\$ 12.00	\$ 12,000.00
	SEDIMENT AND EROSION CONTROLS	LF	1,925	\$ 7.00	\$ 13,480.00
	DEMOLITION OF EXISTING MASONRY	CY	260	\$ 300.00	\$ 78,000.00
	PROCESS CONCRETE MASONRY FOR FILL	TON	20	\$ 20.00	\$ 410.00
	REMOVAL OF EXISTING PAVEMENT	SY	2,080	\$ 15.00	\$ 31,200.00
	GRAVEL BORROW	CY	961	\$ 80.00	\$ 76,850.00
	LOAM BORROW	CY	1,220	\$ 45.00	\$ 54,900.00
	POLLINATOR SEED MIX	SY	7,320	\$ 3.00	\$ 21,960.00
SUBTOTAL-8 CANAL					\$ 293,800.00
<i>CONTINGENCY (15%)</i>					<i>\$ 3,300.00</i>
TOTAL-8 CANAL STREET					\$ 297,100.00
PHASE I SUBTOTAL					\$ 8,689,430.00
	MOBILIZATION	LS	1	\$ 1,737,886.00	\$ 1,737,890.00
	ENGINEERING AND PERMITS	LS	1	\$ 868,943.00	\$ 868,950.00
TOTAL PHASE I ORDER OF MAGNITUDE COST (rounded)					\$ 11,300,000.00

Canal District Master Plan - Order of Magnitude Cost Estimate

Turners Falls Massachusetts

Prepared for: Town of Montague

SLR #15898.00026

October 4, 2022



	ITEM/DESCRIPTION	UNIT	QTY	UNIT PRICE	AMOUNT
PHASE II - CANAL DISTRICT MASTER PLAN SITE IMPROVEMENTS					
	CLEAR AND GRUB VEGETATION	LS	1	\$ 5,000.00	\$ 5,000.00
	SEDIMENT AND EROSION CONTROLS	LF	3,080	\$ 7.00	\$ 21,560.00
	CONSTRUCTION ENTRANCE	EA	1	\$ 3,000.00	\$ 3,000.00
	TEMPORARY CONSTRUCTION FENCE	LF	1,510	\$ 12.00	\$ 18,120.00
	EARTHWORK (EXCAVATION, GRADING)	CY	475	\$ 60.00	\$ 28,500.00
	HMA PAVED ACCESSIBLE TRAIL	TON	240	\$ 200.00	\$ 48,000.00
	GRAVEL BORROW	CY	315	\$ 80.00	\$ 25,200.00
	ORNAMENTAL TREE	EA	97	\$ 1,200.00	\$ 116,400.00
	VISTA PRUNING	LS	1	\$ 25,000.00	\$ 25,000.00
	SUBTOTAL				\$ 290,780.00
	MOBILIZATION	LS	1	\$ 58,156.00	\$ 58,160.00
	ENGINEERING AND PERMITS	LS	1	\$ 29,078.00	\$ 29,080.00
	<i>SUBTOTAL</i>				\$ 378,020.00
	<i>CONTINGENCY (15%)</i>				\$ 56,710.00
	PHASE II ORDER OF MAGNITUDE BASE COST (rounded)				\$ 435,000.00
ADD ALTERNATES					
	PEDESTRIAN BRIDGE	LS	1	\$ 1,200,000.00	\$ 1,200,000.00
	11 POWER STREET WATER MAIN AND BRIDGE CROSSING	LS	1	\$ 92,000.00	\$ 92,000.00
	11 POWER STREET SANITARY SEWER AND BRIDGE CROSSING	LS	1	\$ 337,000.00	\$ 337,000.00
	TOTAL PHASE II ORDER OF MAGNITUDE (rounded)				\$ 2,060,000.00

Notes:

- The estimate for Phase I demolition is based on limited knowledge of existing building infrastructure that considers, record information, information from previous studies and visual observations during various site visits conducted by SLR and the project team.
- Phase II improvements are based on concept drawings prepared by Place Alliance Northeast.
- This is an order of magnitude cost estimate, as defined by the American Association of Cost Engineers, that is expected to be within -30 to +50 percent of the actual project cost. SLR has no control over the cost of labor, materials, equipment, or services furnished by others or market conditions. SLR's opinion of probable Total Project Costs and Construction Cost are made based on SLR's experience and qualifications and represent SLR's best judgment as an experienced and qualified professional engineer, familiar with the construction industry. SLR cannot and does not guarantee that proposals, bids or actual Total Project or Construction Costs will not vary from opinions of probable cost prepared by SLR.

4.4 Financial Feasibility Analysis - Housing

The market analysis identified rental housing as the most appropriate use for the 11 Power Street site. A development concept was subsequently prepared that maximizes build out on the site given physical constraints. The concept consists of a 108-unit residential apartment building with a mix of one-, two-, and three-bedroom units. The ground floor accommodates structured parking and amenities, while the dwelling units are located on floors 2-5.

The next task was to evaluate the financial feasibility of the concept in consideration of construction costs, achievable lease rates, operating expenses, and access to financing. The concept was tested both as a 100% market-rate project and as a 100% affordable housing project that takes advantage of the Low-Income Housing Tax Credit (LIHTC) program.

Scenario 1: Market-Rate Housing

The development program and applicable rents for the market-rate scenario is illustrated in the table below. Given that there are no close comparables for new construction market-rate projects of this scale in the vicinity of Turners Falls, market rents were assumed to be rates that would be affordable to median-income households in Franklin County (i.e., 100% AMI). A one-bedroom unit would rent at \$1,589 per month, a two-bedroom at \$1,907, and a three-bedroom at \$2,203. See Table 4.4A. These are likely near-maximum rates for new rental units in Turners Falls. For comparison, new one-

bedroom units in Amherst (likely the nearest location of any comparable projects) have asking rents in the \$2,000 to \$2,400 range.

Applying achievable rents to the unit mix equates to a blended average monthly rent of \$1,923 per unit, or \$2.41 per rentable square foot (equivalent to \$28.91 per rentable square foot annually).

Development costs provided to Camoin Associates estimate construction costs at between \$525 and \$650 per gross square foot, for a total cost range of \$81,375,000 to \$100,750,000. For the purposes of this analysis, we use the low estimate of construction costs. SLR estimates Phase 1 demolition and site preparation costs for the 11 Power Street site at \$518,800. We assume additional costs required to extend water and sanitary sewer to the site would not be borne by a private developer. It is assumed that the land would be granted to the developer by the Town at no cost. The total assumed development cost of \$81,893,800 is equivalent to approximately \$750,000 per dwelling unit.

Other assumptions used in the financial modeling are summarized in the Table 4.4B.

The extremely high development costs associated with construction result in a project with a negative return on investment. The market value of the project upon stabilization is estimated at \$17.6 million, much less than the development cost of \$81.8 million. The funding gap of \$67 million represents 82% of the total development cost. See Table 4.4C.

Development Program: 11 Power Street - Market-Rate Apartments						
Unit Type	Units	Size (SF)	Rentable Area	Rent	Monthly Rent PSF	Annual Rent PSF
1BR	28	600	16,800	\$ 1,589	\$ 2.65	\$ 31.78
2BR	44	800	35,200	\$ 1,907	\$ 2.38	\$ 28.60
3BR	36	950	34,200	\$ 2,203	\$ 2.32	\$ 27.83
Total	108	798	86,200	\$ 1,923	\$ 2.41	\$ 28.91

4.4A Table

Assumptions: 11 Power Street - Market-Rate Apartments			
Project Information		Annual Expenses	
Total Rentable Square Feet	86,200 Dietz	Property Tax Rate	1.93% 2022 Actual
Total Gross Square Feet	155,000 Dietz	OpEx (Excl Prop Tax)	25% Camoin
Construction Cost per SF	\$525 Dietz	Financing	
Total Construction Cost	\$81,375,000 Calculation	Equity Contribution (%)	30% Camoin
Site Work	\$518,800 SLR	Equity Contribution (\$)	\$24,568,140 Camoin
Total Development Cost	\$81,893,800 Calculation	Max Loan to Value	70% Camoin
Revenue and Performance		Loan Amount	\$12,302,587 Calculation
Rental Rate (per RSF/Year)	\$28.91 CoStar	Loan Interest Rate	5.68% Realty Rates
Vacancy and Credit Loss	5.0% Camoin	Annual Debt Service	\$863,383 Calculation
		Capitalization Rate	8.0% Realty Rates

4.4B Table

Feasibility Assessment: 11 Power Street - Market-Rate Apartments			
Pro-Forma (first stabilized year)		Return on Investment (ROI) Analysis	
Revenue		Annual ROI	
Revenue Potential	\$2,492,404	Equity Investment	\$24,568,140
Vacancy and Credit Loss	(\$124,620)	Annual Cash Flow After Financing	\$573,782
Net Rental Income	\$2,367,784	D. (Annual) Equity Dividend Rate	2.3%
Expenses		Overall ROI	
Real Estate Taxes	(\$338,673)	Full Market Value When Complete	\$17,575,125
Other Operating Expenses	(\$591,946)	Total Construction Cost	\$81,893,800
Total Expenses	(\$930,619)	E. Return on Investment	-78.5%
A. Net Operating Income (NOI)		Feasibility Assessment	
	\$1,437,165	Return on Investment Threshold	20.0%
Debt Service Payment	(\$863,383)	Is Project a Viable Investment?	No
B. Annual Cash Flow After Financing	\$573,782	F. Gap Funding/Subsidy Needed	\$67,247,863
Full Market Value When Complete	\$17,575,125	Debt Service Coverage Ratio Threshold	1.25
Total Construction Cost	\$81,893,800	G. Actual Debt Service Coverage Ratio	1.66
C. Appraisal Gap	\$64,318,675	Is Underwriting Threshold Met?	Yes

4.4C Table

Scenario 2: Affordable Housing

The second scenario treats the development concept as a low-income housing tax credit (LIHTC) project, which would make the project eligible to receive equity investment in the form of tax credits. In Massachusetts, there are

both federal and state LIHTC credits available, which are administered by the Department of Housing and Community Development (DHCD). Development projects are awarded tax credits based on a competitive scoring process, as detailed in DHCD's annual Qualified Allocation Plan (QAP). Per the 2022-2023 QAP, there are

five priority categories for funding. Applications for funding awards will be required to fit within one or more of these categories:

1. Housing for extremely low-income (ELI) individuals, families, and seniors earning less than 30% of area median income (AMI). Projects must include at least 20% ELI units.
2. Investment in distressed and at-risk neighborhoods
3. Preservation of existing affordable housing
4. Family housing production in neighborhood communities that provide access to jobs, transportation, and education and public amenities. At least 65% of units must include 2+ bedrooms and at least 10% must include 3+ bedrooms.
5. Family or senior housing production in communities in which the affordable housing stock, as defined by the state Subsidized Housing Inventory (SHI) is lower than 12%. (Per the most recent inventory published, the Town of Montague has an SHI of 9.6%).

A LIHTC application for a project on the study site can be made most competitive by satisfying criteria for priority categories 1, 4, and 5. Category 2 does not apply as the site does not fall within a Qualified Census Tract or a Gateway City, and category 3 does not apply because this project would be new-build and

not preservation of existing housing.

Rent Limits:

Rent limits by AMI level for each unit type were determined from published income limits by family size from HUD. Monthly rents were calculated assuming no more than 30% of income is spent on housing costs, and assuming that rent accounts for 90% of housing costs. Rents for units of each bedroom count were calculated assuming 1.5 occupants per bedroom, per LIHTC guidance. See Table 4.4D and 4.4E. Rent limits for a one-bedroom unit range from \$477 for households at 30% AMI and \$1,271 for households at 80% AMI. Two-bedrooms range from \$573 to \$1,526 monthly, and three-bedrooms range from \$683 to \$1,762 monthly.

Development Program:

A development program of 20% of units at 20% AMI and 80% of units at 80% at AMI was selected to achieve two objectives: (1) allow the project to meet the first DHCD criterion requiring at least 20% ELI units and (2) maximize the net operating income generated by the remaining units. This results in 22 units at 20% AMI and 86 units at 80% AMI, with the unit mix shown below. Note that this mix also meets the LIHTC requirement of having at least 20% of units below 50% AMI. See Table 4.4F.

FY 2022 Income Limits by Family Size, Franklin County HUD Metro Area								
	1	2	3	4	5	6	7	8
30% AMI	\$ 19,800	\$ 22,600	\$ 25,450	\$ 28,250	\$ 32,470	\$ 37,190	\$ 41,910	\$ 46,630
50% AMI	\$ 32,950	\$ 37,650	\$ 42,350	\$ 47,050	\$ 50,850	\$ 54,600	\$ 58,350	\$ 62,150
60% AMI	\$ 39,600	\$ 45,200	\$ 50,900	\$ 56,500	\$ 64,940	\$ 74,380	\$ 83,820	\$ 93,260
80% AMI	\$ 52,750	\$ 60,250	\$ 67,800	\$ 75,300	\$ 81,350	\$ 87,350	\$ 93,400	\$ 99,400

4.4D Table

Rent Limits by Bedroom Count, Franklin County HUD Metro Area			
Bedrooms	1	2	3
Occupants	1.5	3	4.5
30% AMI	\$ 477	\$ 573	\$ 683
50% AMI	\$ 794	\$ 953	\$ 1,101
60% AMI	\$ 954	\$ 1,145	\$ 1,366
80% AMI	\$ 1,271	\$ 1,526	\$ 1,762

4.4E Table

Note: Assumes 30% of income is spent on housing costs, 1.5 occupants per bedroom (per LIHTC guidance), and utilities account for 10% of monthly housing costs
Source: HUD; Camoin calculation

Units by Type: 20% at 20% AMI / 80% at 80% AMI					
	1 BR	2 BR	3 BR	Total	Share
30% AMI	7	8	7	22	20%
50% AMI	0	0	0	0	0%
60% AMI	0	0	0	0	0%
80% AMI	21	36	29	86	80%
Total	28	44	36	108	100%
Share	26%	41%	33%	100%	

Note: Development program meets 20/50 test

4.4F Table

Funding:

The federal LIHTC program offers both 9% and 4% tax credits. This analysis shows the impact of the more valuable 9% credits to illustrate the maximum amount of funding that could be expected. Because 9% credits are limited however, DHCD encourages developers to strongly consider tax-exempt bond financing and 4% credits instead of 9% credits. Additional credits are available through the Massachusetts State Housing Tax Credit, though it should be noted that the state credit typically will be allocated in lieu of a portion of federal credit which the project might otherwise receive. In other words, the state credit makes available additional funding so that more projects can be funded but does not increase the total amount of credits an individual project would receive.

The recommended limit for total development costs for each unit is \$319,000 for a suburban/rural area outside metro Boston with a significant two- and three-bedroom component. Additionally, even if an application is accepted for review with costs higher than the recommended limits, DHCD will typically cap the allowable eligible basis at \$200,000 per unit for projects outside metro Boston. DHCD typically also caps state LIHTC requests at \$1.5 million for projects over 100 units and federal 9% credits at \$1 million per project.

After imposing these caps, the project would likely receive no more than \$10.5M in tax credit equity over 10 years (in present value terms). This is equivalent to only 13% of total development costs, whereas the intention of the 9% credits is to provide approximately 70% of total costs. See Table 4.4G.

LIHTC Equity		
	Project Total	Per Unit
Development Cost (low estimate)		
Structure	\$ 81,375,000	\$ 753,472
Sitework	\$ 518,800	\$ 4,804
Land	\$ -	\$ -
Total Development Cost (1)	\$ 81,893,800	\$ 758,276
Eligible Basis	\$ 81,893,800	\$ 758,276
Maximum Eligible Basis (2)	\$ 21,600,000	\$ 200,000
Affordable Unit Share	100%	100%
Qualified Basis	\$ 21,600,000	\$ 200,000
Tax Credit Rate	9%	9%
Annual Tax Credits	\$ 1,944,000	\$ 18,000
Maximum Project Allocation (3)	\$ 1,500,000	\$ 13,889
Period (Years)	10	10
Credits over 10 Years	\$ 15,000,000	\$ 138,889
Tax Credit Factor (4)	\$ 0.90	\$ 0.90
Total Equity over 10 years	\$ 13,500,000	\$ 125,000
Federal Discount Rate (5)	4.80%	4.80%
PV of Credits	\$ 10,526,336	\$ 97,466

4.4G Table

Federal Discount Rate (5)	4.80%	4.80%
PV of Credits	\$ 10,526,336	\$ 97,466

- (1): Per 2022-2023 QAP guidance, DHCD recommends a limit of \$319,000 in total development costs per unit for suburban/rural areas outside metro Boston with a significant share of multi-bedroom units
- (2): DHCD typically caps the eligible basis for projects outside the Boston metro area at \$200,000 per unit
- (3): DHCD typically caps state LIHTC requests at \$1.5 million for projects over 100 units and federal 9% credits at \$1 million per project.

In addition to equity raised from LIHTC credits, the project could be partially funded with a loan. The projected net operating income (NOI) for the project at stabilization would allow for a maximum loan of about \$9.9 million, assuming a debt coverage ratio of 1.25. See Table 4.4H.

Together, the loan proceeds and LIHTC equity account for 25% of the project's capital stack, leaving a funding gap of 75%. See Table 4.4I.

Discussion

The current inflationary environment has resulted in extreme spikes in construction costs, resulting in very large funding gaps in both the market-rate and affordable scenarios.

To reduce the funding gap, construction costs per unit would need to be significantly reduced and/or the maximum per unit imposed by DHCD would need to be increased considerably. Reducing the number of units in the projects would also allow for a higher LIHTC subsidy per unit given caps on total credit allocations per project.

Maximum Loan Proceeds		
	Project Total	Per Unit
Potential Rental Income	\$ 1,745,076	\$ 16,158
Vacancy	5%	5%
Effective Rental Income	\$ 1,657,822	\$ 15,350
Expenses	40%	40%
Net Operating Income (NOI)	\$ 994,693	\$ 9,210
Debt Service Coverage Ratio (DSCR)	1.25	1.25
Maximum Debt Service	\$ 795,755	\$ 7,368
Interest Rate	7.00%	7.00%
Maximum Loan Proceeds	\$9,874,553	\$ 91,431

4.4H Table

Capital Stack and Funding Gap			
Funding Source	Project Total	Per Unit	Share
Loan Proceeds	\$ 9,874,553	\$ 91,431	12%
LIHTC Equity	\$ 10,526,336	\$ 97,466	13%
Funding Gap	\$ 61,492,911	\$ 569,379	75%
Total Development Cost	\$ 81,893,800	\$ 758,276	100%

4.4I Table

4.5 Implementation Plan

Realizing the vision for the Canal District will require a focused effort on a few primary fronts:

- Phase I Implementation
- Setting the stage for housing development
- Continued focus on revitalizing the downtown district through supportive economic development planning
- Ensure stabilization of remaining buildings and debris
- Prepare site to ensure smooth execution of new Turners Falls Bridge
- Provide accessible space for users to interpret various histories of site

The following sections offer recommendations to the Town on implementation of these efforts. Partners to implementation will include: Planning and Conservation Department, Montague Economic Development Industrial Corporation, Department of Public Works, Parks & Recreation, Selectboard, Franklin Regional Council of Governments, Franklin Regional Planning Board, Franklin Regional Housing and Redevelopment Authority, and others engaged in economic and community development activities. These recommendations are based on conversations with key stakeholders, understanding of the current market demands and opportunities, review of previous materials, and prior experience working on similar projects.

Phase I Implementation

It is recommended that the work required for Phase I should be addressed as soon as possible to ensure that it is complete before the new Turners Falls bridge work is started. Delaying Phase I would likely mean that it would be postponed until the completion of the bridge. Due to the failing infrastructure within the Canal District, it is not recommended to prolong the stabilization of these sites as they pose a risk to surrounding natural resources and life safety.

Ideally, Phase I of the Canal District Master Plan would be complete before the implementation

of the bridge. Phase II would proceed after funding is obtained. An outline of recommended actions and associated timelines is included in [Table 4.5A](#).

Year	Scope and Action Items
2023	<ol style="list-style-type: none"> 1. Seek funding for demolition of Strathmore Mill / Phase I 2. Split Building 11 from 20 Canal Road. Develop and issue RFP for redevelopment. 3. Conduct feasibility study for Building 11. Refine demolition and restoration plans, and conduct permitting.
2024	<ol style="list-style-type: none"> 1. Develop and issue RFP for demolition of Strathmore Mill / Phase I. Issue invitations for bids. 2. Develop design standards for housing (Community Engagement Required)
2024-2025	<ol style="list-style-type: none"> 1. Phase I Work 2. Maintain work completed in Phase I until Phase II and housing project can proceed after construction is complete of new bridge.
2026-2027	<ol style="list-style-type: none"> 1. Phase II (Community Engagement Required) if Phase I is started immediately. 2. Bridge planning and construction
2028	<ol style="list-style-type: none"> 1. Phase II (Community Engagement Required) if Phase I is delayed.

4.5A Timeline and Action Items

Housing Development Implementation

Housing has been identified as the priority opportunity for the Canal District on the Griswold Site (within Zone 5) in the southern portion of the property. To realize housing on the Griswold Site will require a series of steps to make the site more attractive to investment, including approaches that will reduce the upfront cost burden on a potential developer and make the process as predicable and streamlined as possible. The following steps are outlined in order of execution, although some may happen concurrently.

Immediate: Continue to maintain the site, invest in critical infrastructure, and site preparations

as much as possible to create predictability and less upfront costs for the developer, including any needed infrastructure and access improvements. Site maintenance and upkeep will make the site more attractive to a developer and shorten the process to construction.

Immediate: Build community support for the idea, including coordinating with key agencies and organizations about the project. Working through this process in advance will reduce the risk that the developer will enter a project facing community opposition.

- Prepare a one-page infographic that describes the Canal District Master Plan to share with key organizations.
- Discuss the project with community partners such as Franklin Regional Council of Governments, Franklin County Comprehensive Economic Development Strategy Committee, Franklin County Chamber of Commerce, Franklin County Regional Housing and Redevelopment Authority, neighboring towns, economic development professionals, and others to ensure widespread awareness of the proposed project and vision for the site.

6-12 months: Work locally to identify permits and prepare as many permits as possible in advance to help streamline the process.

12-15 months: Conduct outreach to potential funders and financiers to better understand the available programs and be prepared to speak with developers about the opportunities. Most developers will be well versed in the various programs that they would apply for, but it will be valuable for the Town to have introduced the project to the various agencies in advance.

12-15 months: Prepare and implement a marketing plan in advance of issuing the developer RFP including the following tasks:

- Prepare an online presence for the Canal District that provides renderings, background information, community vision, and project contact information. Use materials and

content generated from the master planning process. Highlight stories of the history of the District, community members talking about their passion for the future, and highlighting other regional assets for those who may not be familiar.

- Establish a list of developers who have played a role in similar projects in the region and around the country and make direct contact with them to share the marketing materials. Conduct both social media (LinkedIn), phone, and email outreach. Conduct this work in-house or hire an engagement center to assist.
- Invite the developers to the site to do a walking tour to understand the size and potential of the property. Have representatives of different funding sources on hand to provide information and guidance.

15 months: Prepare and issue a developer RFP and conduct targeted and direct outreach to local/regional developers with experience in similar types of projects – low-income housing on a downtown brownfield site.

15-18 months: Review RFPs and assess which are most likely to align with community values and be financially viable.

18 months: Create a strong working relationship with the selected developer to assist with permitting and other regulations to allow for a streamlined process that allows for construction to begin as soon as possible.

Phase II Implementation

18-24 months: Initiate a community visioning process to finalize design for the recreation components of Phase II implementation. Develop individual implementation plans for each of the accepted component pieces, including funding and materials/supplies needed. Begin process to identify suppliers of the various component pieces as well as Inventory potential funding sources.

24-30 months: Begin application process for funding to implement components of the

community vision for the site.

Year 3+: Begin implementation of the various components as funding and supplies becomes available.

Note this outline for Phase II is based on the recommendation that Phase I work from the Master Plan for the Canal District be completed before the construction of the new Turners Falls Road bridge. If delays for implementing Phase I occur, Phase II would likely take place following the new bridge.

General Economic Development Environment Recommendations

While reuse opportunities for the Canal District parcels are limited, Turners Falls is in a great position to continue to enhance the downtown environment and support business creation and growth. The municipality and local businesspeople have done a lot of work recently to create a vibrant downtown area, including completing a Rapid Recovery Plan to respond to the impact of the COVID-19 pandemic. At the same time, opportunities remain which can further strengthen the local economy, enhance the area's appeal as a destination for visitors, and improve the quality of life for residents. With great assets like the bike trail, waterfront views, downtown core infrastructure, and proximity to major transportation networks, Turners Falls has the potential to continue to grow as a destination in New England. Camoin Associates recommends the following measures in order to further strengthening the overall economy for the community. These recommendations are not in order of execution, but rather concept ideas to be pursued as funding and resources exist.

Downtown Business Collaborative: Initiate conversations with downtown business owners about whether they would be interested in coordinating a regular (example: quarterly) meeting to discuss challenges, ideas, opportunities for partnering, and generally strengthening their relationships. By encouraging communication there will be a

greater chance to help problem solve and build the success of the downtown. This organization could also serve as an information resource to share with other/new business owners about the various programs that they might benefit from. Consider needs of New Americans and non-English speakers and how to support minority business owners in Turners Falls.

District Increment Financing (DIF): Conduct a feasibility analysis to determine the potential opportunities associated with creation of a DIF for downtown. The DIF would create a designated zone, within which any new property tax revenue from new investment would be directed towards a specific fund, used specifically to catalyze further economic development. An example might be using the DIF funds to create a downtown management organization, some kind of needed infrastructure, or other public project that would benefit the local community.

Small Business Assistance: Not all business owners are aware of the various programs currently available to assist with both funding and training opportunities. For example, during the interviews it was mentioned that the Franklin County Community Development Corporation offers several business assistance and training opportunities, but some business owners that could benefit from these programs may not be aware of them.

Expand support services and assistance as appropriate, including creation of a downtown revolving loan fund or facade program to improve businesses within the commercial core.

Digital Footprint and Marketing: Developing a digital presence to complement physical wayfinding efforts will build a cohesive marketing message highlighting the many reasons to visit Turners Falls. Currently, an internet search for Turners Falls does not adequately showcase the community's assets. Consider creating a separate website/webpage that would emphasize the area's attractiveness, how to spend an afternoon, where to stay, and other important information that visitors might be looking for.

Streetscape Improvements and Public Art:

Work with local artists to commission public pieces that can be displayed throughout downtown Turners Falls to showcase their skills and create a unique experience for visitors. Consider large, unique, unexpected art pieces that would be a draw from within the region and create additional reasons for people to visit Turners Falls throughout the year. Coordinate with the Sawmill River Art Gallery, the Great Falls Discovery Center, and other unique attractions in Turners Falls to curate the public art exhibit.

Tactical Urbanism: Even starting small will yield big impacts in building momentum for this effort. Repainting crosswalks (consider vibrant and unexpected colors), small murals highlighting the history of the space, pop up community events, and other relatively low-cost efforts build excitement and help catalyze further investment. Known as tactical urbanism, the Town of Montague could fund small projects that would create buzz, bring people downtown, and get them talking in a way that builds a sense of community and hope for the future of the area.

Small-Scale Production: Throughout the interview and market analysis process, a series of ideas came up a number of times for downtown, small-scale production uses that would draw people to the space – both to see these activities and also to provide retail and sales opportunities. These uses would build on the aesthetic and history of Turners Falls and be a great fit to bring life and unique vibrancy to the downtown. Some ideas include:

- Open space for artists to make, display, and sell their works, especially for types of art that can't be created in an apartment or house (large scale, loud, messy, smelly, etc.).
- Space for musicians to practice and perform
- Value added food and drink processing incubator and retail operation

Outdoor Recreation: Building on its existing assets, including access to the river, the bike trail, proximity to hiking, and currently active organizations and advocacy groups, Turners

Falls should lean into its role as a center for outdoor recreation. This could include expanding wayfinding/signage, partnering with other communities to create connections and advertise opportunities, attracting an outdoor-retailers with rental options, investing in additional assets, and generally building out the outdoor recreation lifestyle.

Address Big Picture Economic Development Challenges:

There are issues that many businesses are facing that are beyond an implementation plan such as this – such as lack of adequate housing and the related impacts on the workforce. Businesses are challenged with finding adequate and qualified staff and that is having a negative impact on their ability to remain open and expand. Addressing these larger regional (and even national) challenges in Turners Falls may require a more comprehensive economic development strategy that considers issues such as transportation, childcare, housing, and workforce development.

Funding Opportunities

The following page lists potential funding sources for the recommendations listed in this implementation plan.

Conclusion

Implementation of these recommendations will require a joint effort between multiple organizations, public and private partnerships, community involvement, and the continued tenacity of local officials. Focusing first on taking whatever steps are possible to set the stage for Phase I and the housing development will be worth the effort, as it will make the projects more attractive to a developer. The success of Turners Falls in becoming a more well-known and vibrant destination for businesses, residents, and visitors will provide positive impacts on the local economy and cause ripple effects throughout multiple industries. Starting with some of the easier recommendations outlined here and in the Rapid Recovery plan will yield big impacts, making some of the larger ideas more feasible.

Funding Source	Description
Opportunity Zone (Federal)	The Canal District property is located in a federally designed Opportunity Zone (#25011040701). The Opportunity Zone program is an economic development program that provides tax benefits to investors for investing in distressed areas. According to OpportunityDB there are ten funds that identify Massachusetts as a target market, including several that identify affordable housing as a focus.
MassHousing	MassHousing is an independent, quasi-public agency created in 1966 and charged with providing financing for affordable housing in Massachusetts. The Agency can assist with financing and other support.
Massachusetts Housing Partnership	A statewide, nonprofit quasi-public organization that helps communities build affordable housing. MHP can provide assistance with RFP development, low interest loans, and other financing support.
Federal Rehabilitation Investment Tax Credits and MA Historic Rehabilitation Tax Credit Program	Tax credits are available for eligible historic commercial buildings, meaning income producing buildings, listed on the National Register of Historic Places. The Canal District is within the Turners Falls Historic District, which is listed on the National Register of Historic Place. Rehabilitation of these properties would potentially provide up to 40% (20% federal credits and 20% state credits) income tax credit to the developer (equal to 40% of the qualifying expenses of rehabilitation).
New Markets Tax Credits (Federal)	Through the NMTC Program, the Community Development Financial Institutions (CDFI) Fund allocates tax credit authority to Community Development Entities (CDEs) through a competitive application process. CDEs are financial intermediaries through which private capital flows from an investor to a qualified business located in an eligible community. CDEs use their authority to offer tax credits to investors in exchange for equity in the CDE. Using the capital from these equity investments, CDEs can make loans and investments to businesses operating in low-income communities at better rates and terms and with more flexible features than can market based lenders.
HUD Section 108 Loan Guarantee Program (Federal)	Section 108 of the Housing and Community Development Act of 1974 provides for a loan guarantee component of the Community Development Block Grant (CDBG) Program. The Section 108 Loan Guarantee Program provides communities with a source of financing for economic development, housing rehabilitation, public facilities, and other physical development projects, including improvements to increase their resilience against natural disasters. The funds can be used by a designated public entity to undertake eligible projects, or, alternatively, can be loaned to a third-party developer to undertake the projects.
Low-Income Housing Tax Credit (LIHTC) (Federal)	LIHTC offers developers nonrefundable and transferable tax credits to subsidize the construction and rehabilitation of housing developments with strict income limits on eligible tenants and their cost of housing. The credits are allocated from the Internal Revenue Services (IRS) to Housing Finance Authorities at the state level (Massachusetts Department of Housing and Community Development).
USEPA Brownfield Funding	U.S. EPA Brownfield funds can be further utilized to support redevelopment. EPA Brownfield Assessment grants can be used for a wide range of planning activities that can be done prior to disposition to help attract a private developer. This can include a site reuse assessment, examining the architectural/engineering feasibility of adaptive reuse for housing. Other eligible activities include developing site disposition strategies and a community site reuse vision. It can also be used to prepare cost estimates and conduct additional financial feasibility analysis.

Local Fundraising	Local fundraising may be a viable funding opportunity, particularly given the community interest and need for housing. Local fundraising options might include crowdfunding, charitable giving, community investment model, and/or donations from employers that would significantly benefit from the addition of new workforce housing in the community.
MassDevelopment Site Readiness	The Site Readiness program aims to increase the Commonwealth’s inventory of large, well-located, project-ready sites; to accelerate private sector investment in industrial, commercial, and mixed-use projects; and to support the conversion of abandoned sites and obsolete facilities into clean, actively used, tax-generating properties. This program utilizes a standard grant agreement and supports uses like site preparation and pre-development and permitting.
MassDevelopment Brownfields Redevelopment Funds	The Brownfields Redevelopment Fund was created in 1998 to help transform vacant, abandoned, or underutilized industrial and commercial properties throughout Massachusetts where development is hampered by real or perceived environmental contamination. Can provided interest-funding for environmental testing and loans for environmental clean-up that is required for pre-development.
MassDevelopment Commonwealth Places	Commonwealth Places Funding is a competitive opportunity to advance locally driven placemaking in downtown and neighborhood commercial districts in communities throughout Massachusetts. Placemaking is a collaborative process through which people in communities work together to improve vacant, underutilized or repurposed publicly-accessible spaces and maximize their shared value. The process facilitates creative patterns of use, and leverages the local physical, cultural, and social assets that define a place and support is ongoing evolution. Commonwealth Places makes awards through two funding categories: Seed Grants and Implementation Grants.
MA Executive Office of Energy and Environmental's Office of Grants and Technical Assistance	Financial assistance focused on developing responsible energy practices, conservation of natural resources and outdoor recreational programs.
MassDOT Shared Streets and Spaces Program	The program provides funding to municipalities and public transit authorities to quickly implement improvements to plazas, sidewalks, curbs, streets, bus stops, parking areas, and other public spaces in support of public health, safe mobility, and strengthened commerce.

Appendix A

**Turners Falls Canal District Market
Analysis by Camoin Associates**

DRAFT

MARKET ANALYSIS

TURNERS FALLS CANAL DISTRICT

Town of Montague, MA

JULY 2022

ABOUT CAMOIN ASSOCIATES

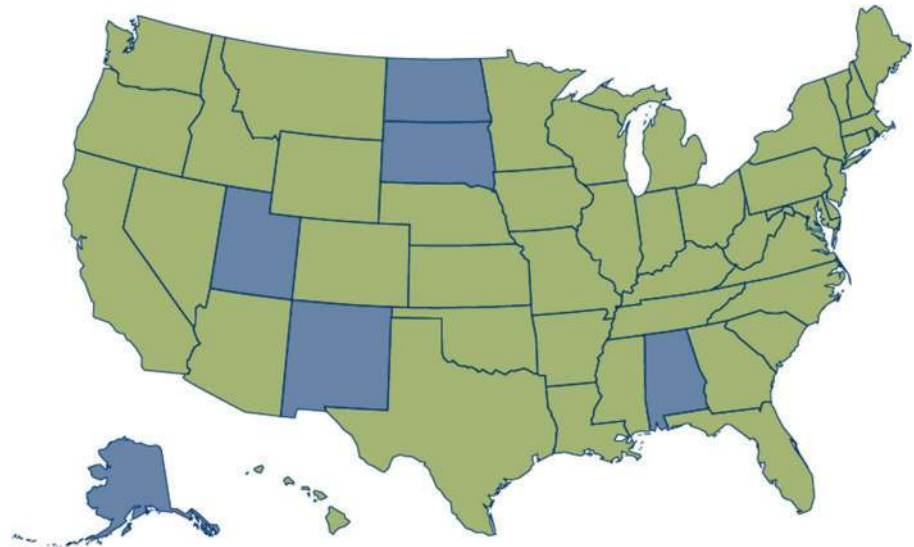
Camoin Associates has provided economic development consulting services to municipalities, economic development agencies, and private enterprises since 1999. Through the services offered, Camoin Associates has served EDOs and local and state governments from Maine to California; corporations and organizations that include Amazon, Lowes Home Improvement, FedEx, Volvo (Nova Bus) and the New York Islanders; as well as private developers proposing projects in excess of \$6 billion. Our reputation for detailed, place-specific, and accurate analysis has led to over 1,000 projects in 44 states and garnered attention from national media outlets including Marketplace (NPR), Crain's New York Business, Forbes magazine, The New York Times, and The Wall Street Journal. Additionally, our marketing strategies have helped our clients gain both national and local media coverage for their projects in order to build public support and leverage additional funding. We are based in Saratoga Springs, NY, with regional offices in Richmond, VA; Portland, ME; Boston, MA; and Brattleboro, VT. To learn more about our experience and projects in all of our service lines, please visit our website at www.camoinassociates.com. You can also find us on Twitter @camoinassociate and on Facebook and LinkedIn.

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KEY FINDINGS

Camoin Associates conducted a broad review of the market in the Town of Montague and surrounding region to identify opportunities and challenges for the Turners Falls Canal District site. Key findings are provided below related to population and households, the local economy, housing, commercial, and industrial activity.

POPULATION AND HOUSEHOLDS

The combined Montague/Greenfield area has seen modest gains in population over the past decade measuring just 1.0% from 2010 to 2021. The broader Franklin County grew at a slightly faster 1.8% but this pales in comparison to the statewide pace of 6.3% over the same period. The local population is also older than the state overall with more than one in five residents aged 65 years or older (22.3%) as opposed to the notably lower statewide proportion (18.3%). This relatively high share of seniors in turn moves median age in the Montague/Greenfield area up to 45.1 years, 4.5 years older than it is for Massachusetts at 40.6 years.

Incomes in Franklin County are significantly below those seen throughout the rest of the state. For the Montague/Greenfield area the discrepancy is particularly stark, with median household incomes of \$52,000 falling more than \$33,000 below the level found for all of Massachusetts (median income is over \$85,000). More than one in four households in the two communities see household incomes of \$25,000 or less (25.4%) compared to less than one in six statewide (15.5%).

While the proportion of students who graduate high school in Franklin County and the Montague/Greenfield is on par with the rest of the state, and the proportion taking an associate degree (11.3% for Montague/Greenfield and 9.9% for Franklin County) is well above

what the state sees (7.4%). The proportion holding a bachelor's or other advanced degree, however, falls short of the statewide pace. Around one third of Montague/Greenfield residents (33.9%) hold a bachelor's or higher while for Massachusetts, that share is closer to one half (45.6%).

The region sees less ethnic diversity than found statewide. Fully nine out of ten Montague/Greenfield residents are white (90.3%) while for Massachusetts it is only three quarters (74.8%). The difference is seen most notably for black populations and those of Asian descent which represent less than 2% each in the study area but those shares both jump to over 7% for Massachusetts as a whole.

ECONOMY

Employment in the Montague/Greenfield area is heavily weighted towards healthcare and social assistance, which accounts for one out of every four jobs (25.1%). This is due in large part to worker opportunities at the Baystate Franklin Medical Center and The United Arc. A varied collection of manufacturing companies provides nearly one in ten jobs for the two communities including BETE Fog Nozzle (spray nozzle engineering and manufacturing), Lighthouse Foods (produces foods for plant-based diets) and Yankee Environmental Systems (environmental measurement device manufacturer).

Over the past decade, growth opportunities have unfortunately remained elusive for the area. From 2011 to 2019, the Montague/Greenfield economy lost 1% of its job base. All the while, Massachusetts grew its total employment by over 13%. Then, with the pandemic, the Montague/Greenfield area shed another 6.6% of their jobs – more than 850 positions. Amongst the hardest hit was the accommodation and food services which contracted by 30.2%

and reduced payrolls by 229 workers in 2020. The government and retail sectors also saw sizable declines, shedding more than 300 jobs between them.

Going into 2021, however, the rebound in hiring was widespread with retail, manufacturing, management and educational services, wholesale, and transportation and warehousing industries all ramping up their hiring. These combined increases along with others brought total employment up by 0.7% last year.

Healthcare, social services, and education stand as some of the largest industries for the Montague/Greenfield area, so it comes as no surprise that some of the most prominent occupations are oriented towards these sectors. These include healthcare practitioners, community and social service occupations, and educators and librarians.

DEMOGRAPHICS AND HOUSING

Like much of the country, the population of the Montague/Greenfield area is aging. Over the coming five years the number of households headed by people aged 64 years and younger will decline by nearly 500 (a 6% decline) while those headed by someone aged 65 or older will climb by 379 (a 10% increase). In total this means an overall decline of more than 100 households by 2026, but it also highlights the growing proportion of seniors in the community.

Over 12,600 housing units are found in the area with more than half (54.5%) of these owner-occupied, nearly two fifths (38.5%) rental units and most of the balance (6.2%) is vacant. There are also a relatively small number of seasonal units in the area (0.8%) which is significantly below the proportion found in Franklin County as a whole (3.9%). This is likely the reason that the Montague/Greenfield area did not see a boost in population over the past two years which has been seen in some other rural communities. Partially as a result

of disruption caused by the COVID-19 virus, many people fled larger urban areas, relocating away from more dense population centers. In large part this was facilitated by the ability of many people to work from home. A prime destination for these pandemic refugees has been second homes. With a limited number of these vacation homes, however, this area did not witness a similar boost.

The housing stock throughout all of Franklin County and in the Montague/Greenfield area in particular is quite old with half of the units in the two towns over 70 years old. Nearly three quarters were built more than 50 years ago. With this vintage of residential inventory, a certain degree of new home building will be required simply to replace those units which fall too far into disrepair.

Over the past decade replacement construction characterizes much of the new home building going on for the area with new single-family homes averaging only 8 units per year. There has been a slightly stronger number of multifamily units developed over the same period with the number of units split nearly evenly between those going in structures with four or fewer units and the rest into 5-or-more-unit projects.

For multifamily housing in the Montague/Greenfield area, more than half (57.3%) of the sites identified by the CoStar real estate service offer 8 units or less. That said, a handful of developments providing 100 to 200 units each account for nearly three quarters of all units in the area (74.0%). Note that all 6 of these properties are found in Greenfield.

For those renting in the Montague/Greenfield area, monthly rental rates fall significantly below statewide averages. Well over one third of renting households (39.5%) pay less \$800 per month, whereas this share drops to one quarter for all of Massachusetts (26.4%). The proportion of rental households paying over \$1,000 is conversely much lower in the two towns (39.8%) than for the state as a whole (63.6%).

With rental rates in Montague/Greenfield running 30% to 35% below the statewide average the market may seem especially affordable for local residents. Any imagined savings coming from these lower monthly payments are, however, accompanied by similarly reduced incomes which also register 30% to 35% below Massachusetts' levels.

Ultimately the challenges of affordability are strikingly similar when looking at Massachusetts, Franklin County, or the Montague/Greenfield area. At all levels, nearly half of the renting household are, in fact, "rent burdened" with 30% or more of household income going to pay rent. One in five households within the two towns (21.4%) find themselves severely rent burdened. This is when payments on a rental unit account for half or more of the household's income and in this community that describes well over one thousand households. With rents exceeding the ability to pay for so many residents, development of affordable housing within the Canal District deserves serious consideration.

For those households inclined to own their homes, the area remains relatively affordable compared to some neighboring communities. The median home sale price within Franklin County of \$281,000 in 2021 registered 19% lower than in adjoining Hampshire County and a full 34.7% below the level seen in Worcester County. For Greenfield, Turners Falls and Millers Falls, median prices dropped to around the \$250,000 range or lower. Away from the Falls area of Montague the median price jumped to \$335,000 but this still remains well below the level found in Northampton, Easthampton, and Florence.

Beyond single family detached housing, there are also around 165 condominiums in Montague and Greenfield. For the handful of units sold in 2021, the median sale price registered nearly \$300,000 – slightly above the level for the Northampton, Southampton, and Easthampton area. This suggests that development of for-sale multifamily units also remains a possibility for the Canal District.

Despite the anticipated decline in households projected in the near-term, need for new residential space persists. Simply replacing one percent of those units over seventy years old would call for construction of several hundred new units.

In addition, providing new senior housing that captures just 5% of the *increase* in households aged 65 and older over the coming five years would require another 75 units.

Similarly, development of affordable housing to serve just 5% of households where income measures \$35,000 per year or less would necessitate upwards of 200 new units.

Through data review, public surveys and discussions with local stakeholders, the need and desire for additional residential space stands out as one of the foremost priorities for any future Canal District development.

RETAIL & COMMERCIAL MARKET

The regional retail market area for this study was designated as those locations within a 45-minute drive time of Turners Falls. Comparing total consumer spending to local business sales within this trade area identified retail sectors where the region registers a *sales gap* where demand is satisfied by spending outside of the region (local demand exceed local sales) or a *sales surplus* indicating consumers from outside the region are boosting demand beyond what is needed locally (local sales are greater than local demand).

For this area, restaurants, car dealerships, and bakeries registered the greatest sales gaps, with demand exceeding supply by over \$250 million for these three sectors alone. Other notable sectors seeing significant sales gaps include electronics/appliance stores, general merchandise stores and clothing retailers. Conversely, the region enjoys a healthy surplus of sales at grocery stores, auto parts stores, and specialty food service suppliers.

Comparing those retail sub-segments registering a sales gap to the average sales for each sector provides an estimate of how many additional local businesses could be supported if a portion of that spending stayed within the region.

Most notable among those industries registering a sales gap, the analysis shows the potential for the region to support several new restaurants, both limited- and full-service. Other sectors showing promise within the region would be the addition of new nail and beauty salons, drycleaners, fitness centers, and building materials stores.

Narrowing down this review to just the Turners Falls/Montague area, again, an opportunity for one or more new restaurants stands out. For other sectors measuring a more modest sales gap, though there may not be sufficient excess demand to support an entire new storefront, there may be potential for expansion. These sectors include pharmacies, nail salons and general merchandise stores.

Supporting the arts and entertainment businesses, Montague offers multiple performance theaters including at the Ja'Duke Center for the Performing Arts which boasts the largest stage in Franklin County. The value that the community puts on cultural organizations is also reflected in the recent renovation of the municipally owned Shea Theater and the designation of the Turners Falls Cultural District. In addition, RiverCulture, administered through the department of Planning and Conservation, hosts and promotes cultural events within the community.

Other features which draw out-of-town visitors include the Great Falls Discovery Center, unique retail opportunities such as the Sawmill River Art Gallery and the Montague Bookmill, the Great Falls Farmers Market, and the Montague Retreat Center.

Local and out-of-town outdoor enthusiasts take advantage of the Canalside Rail Trail, the Montague Plains Wildlife Management Area,

and waterfront opportunities along the river. Several special occasions also draw visitors to the community including the Mutton & Mead Medieval Festival, the Pocumtuck Homelands Festival, and the Great Falls Festival.

INDUSTRIAL MARKET

The Montague/Greenfield area is home to a broad array of manufacturers from specialty plastic film to high tech environmental monitoring devices to plant-based food products. In all, manufacturing accounts for nearly one in ten jobs for the two communities. For these firms, the area appeals to companies producing at a moderate level who are interested in living and working in a setting surrounded by natural beauty and historic architecture.

Looking to opportunities in the canal district, ideas center around the goal of better utilizing, to the degree possible, the existing mill structures while maintaining and enhancing the industrial heritage of the area. To the extent that restoration of any of these historic sites would prove financially unviable, partial or full demolition would then open up alternative prospects for commercial or public use.

Planned use of the Southworth Mill for commercial cannabis cultivation serves as a demonstration of the district's ability to support light industrial activity. Comparable uses are varied and range from small scale assembly or manufacturing of industrial products, consumer goods or food processing.

Developing space for crafts workers, perhaps as lofts in an existing mill, could also serve to revitalize the canal district as it has elsewhere. In these studios or live/work spaces, entrepreneurial artisans practice their crafts, take advantage of gallery space or host open studio visits. In the case of Turners Falls, this type of use would certainly advance the goal of developing a unique character for the site.

Areas of the canal district which face significant constraints to vehicular access may be best suited to be used as battery energy storage facilities. The dam along the canal produces a steady flow of electric power for Firstlight Energy who operates and maintains this generating capacity. Utility-scale electric storage is charged when consumers and business require less power but can then be drawn from during times of peak demand. The Montague Planning Board approved amending local zoning bylaws to allow these facilities in early 2022 and this change is currently under review by the State Attorney General.

Redeveloped mill space within the canal district may also serve to facilitate the needs of the areas existing commercial or industrial firms as they expand operations. This could be as added light manufacturing or simply as storage space. As far as the areas potential to host warehouse capacity going beyond the needs of local producers or to serve as a regional distribution center, these

types of businesses are typically located much closer to the intersection of multiple interstate highways, large production facilities or greater population areas – qualities not found in the Turners Falls area.

A great deal of interest has also been expressed around the canal district providing greater recreational activities. With the bike path already in place, this may include a bike shop offering sales and rentals. Other possibilities focus on the water access. The area is already popular with anglers and kayakers, suggesting the potential for retail and services based around fishing and human powered boating.

The findings of this real estate analysis can be used to inform redevelopment scenario planning for the Canal District to ensure alignment with the current market realities. Planning for the future of the site should consider the site opportunities, market opportunities, and community vision.

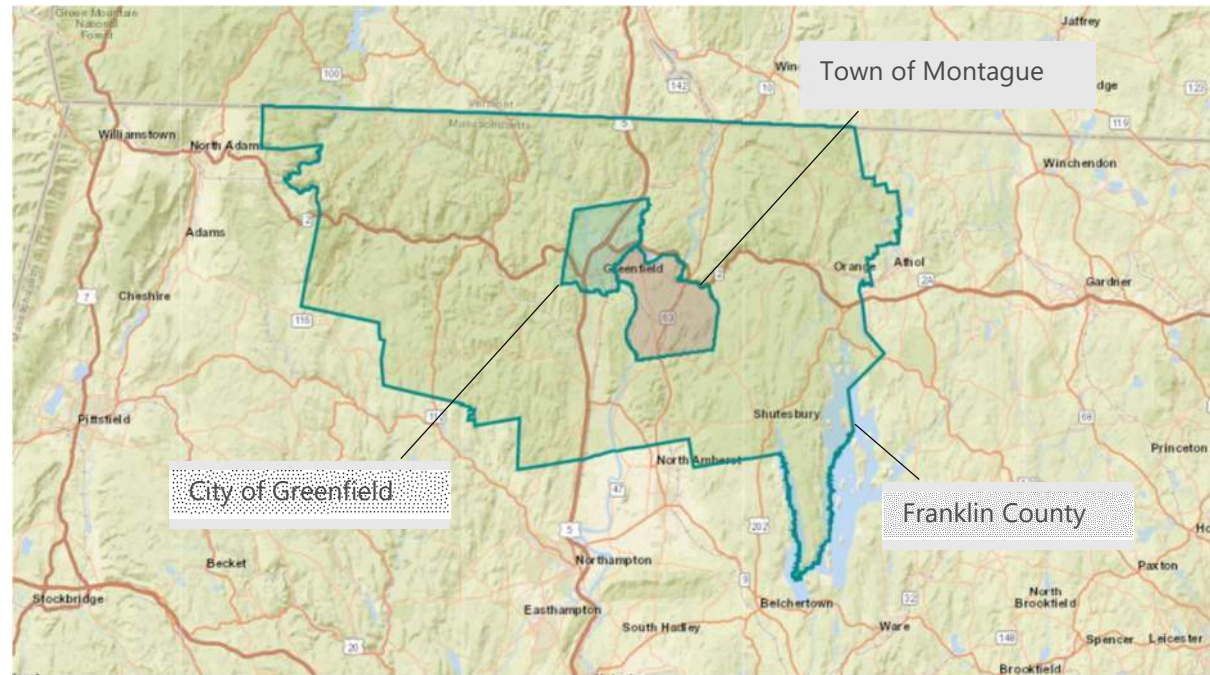
METHODOLOGY

STUDY REGIONS

To guide discussions around potential for economic growth and development, a set of economic and demographic measures have been developed centered around the Town of Montague along with the City of Greenfield. To provide a broader regional context, data for these communities is reviewed and analyzed in the context of conditions found within the broader Franklin County and the Commonwealth of Massachusetts.

DATA SOURCES

Much of the data in this report was acquired from Esri Business Analyst Online (Esri) and Economic Modeling Specialists International (Emsi). Esri uses the 2000 and 2010 Census along with the 2019 American Community Census (ACS) as its base data. It also employs proprietary statistical modeling and additional data from the US Census Bureau and other sources to project current statistics and future trends. Esri data are often used for economic development, marketing, site selection, and strategic decision making. Emsi uses data compiled from several sources, including the US Census Bureau and the US Health and Labor Departments. Using specialized proprietary processes and models, it provides estimates on current statistics and predicts future trends. The data used are from Emsi's Complete Employment data set, which includes both jobs covered and not covered by unemployment insurance. In other words, it includes both traditional employment and non-traditional employment such as the self-employed. As traditional jobs have been replaced or augmented by freelance work, consulting, and self-employment, these non-covered jobs have become much more important to the economy, and Emsi provides researchers with the ability to more accurately track these economic trends over time.



DEMOGRAPHIC PROFILE

DEMOGRAPHICS SUMMARY

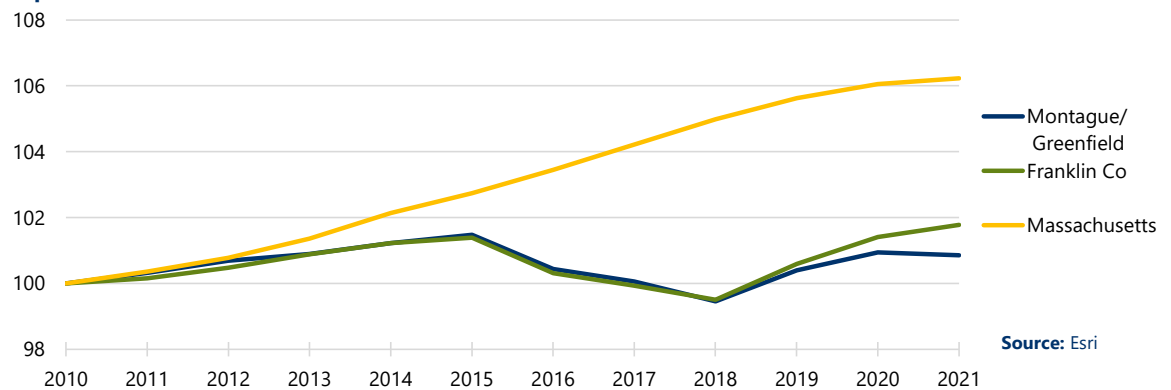
- ◆ The Montague/Greenfield area’s 1.0% population gain seen over the past decade falls short of the Franklin County pace (up 1.8%). This modest growth pales next to the statewide average, however. The Massachusetts population increased 6.3% over the 2010 to 2021 timeframe.
- ◆ At just under \$52,000, the median household income for Montague/Greenfield residents registers less than two thirds (60.9%) of the state level – a difference of more than \$33,000.
- ◆ Population and household levels are projected to wane for Montague/Greenfield and Franklin County, falling by about 1% from 2021 to 2026. This stands in sharp contrast to the state as a whole where both population and households are slated to climb by 2.5% over the five-year span.

Demographic Summary

	2010	2021	2026	2010-2021 Pct Change	2021-2026 Pct Change
Montague/Greenfield					
Population	25,893	26,156	25,838	1.0%	-1.2%
Median Age	42.8	45.1	45.5	5.4%	0.9%
Households	11,546	11,769	11,652	1.9%	-1.0%
Average Household Size	2.18	2.16	2.15	-0.9%	-0.5%
Median Household Income		\$51,923	\$55,170		6.3%
Franklin County					
Population	71,372	72,692	71,942	1.8%	-1.0%
Median Age	44.2	47.0	47.5	6.3%	1.1%
Households	30,462	31,294	31,040	2.7%	-0.8%
Average Household Size	2.29	2.27	2.27	-0.9%	0.0%
Median Household Income		\$59,062	\$63,837		8.1%
Massachusetts					
Population	6,547,629	6,959,075	7,132,163	6.3%	2.5%
Median Age	39.0	40.6	41.3	4.1%	1.7%
Households	2,547,075	2,699,574	2,767,330	6.0%	2.5%
Average Household Size	2.48	2.49	2.49	0.4%	0.0%
Median Household Income		\$85,273	\$95,924		12.5%

Source: Esri

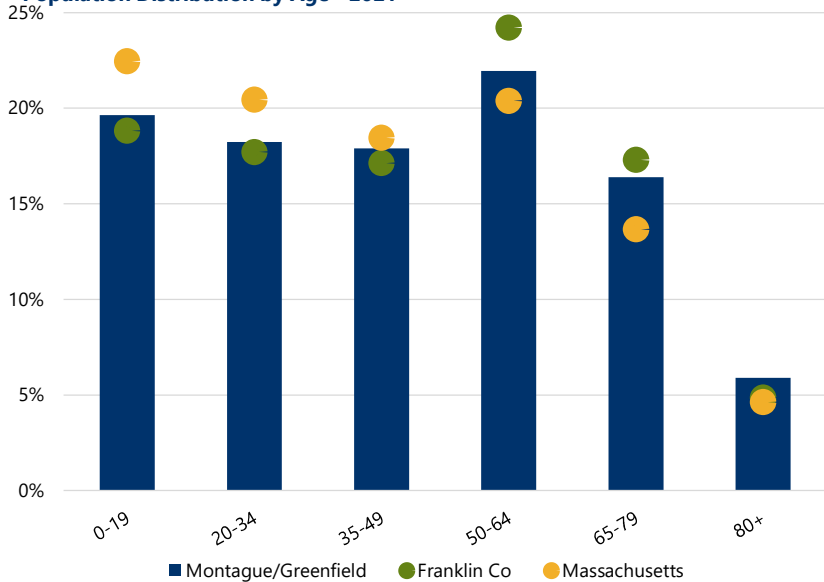
Population Index - 2010=100



AGE DISTRIBUTION

- ◆ With a median age of 45.1 years, the Montague/Greenfield population registers nearly two years younger than the larger Franklin County. The source of this differential is most striking in the 50-64 year old age cohort where Franklin County registers a notably higher share within its age distribution.
- ◆ Differences in median age between the two towns and the county are marginal when compared to the state as a whole. At 40.6 years, the level for Massachusetts is more than six years younger than for Franklin County. This is driven by the relatively high prevalence of Baby Boomers and Gen-Xers in the county. Residents aged 50 and over make up a full 7.7% larger share of the population in Franklin County than they do at the state level (46.4% as compared to 38.7%).

Population Distribution by Age - 2021



Source: Esri

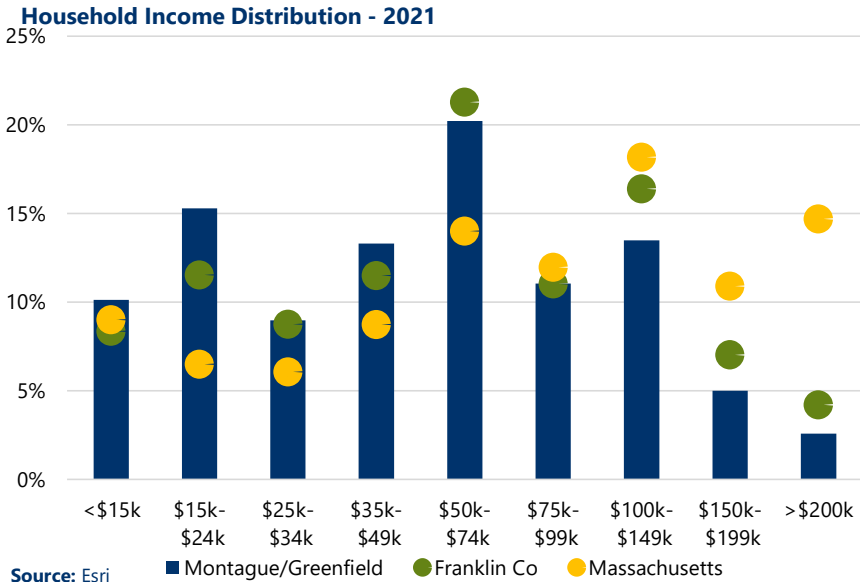
2021 Age Distribution

	Montague/ Greenfield	Franklin Co	Massachusetts
Age 0-19	19.6%	18.8%	22.5%
Age 20-34	18.2%	17.7%	20.4%
Age 35-49	17.9%	17.1%	18.4%
Age 50-64	21.9%	24.2%	20.4%
Age 65-79	16.4%	17.3%	13.7%
Age 80+	5.9%	4.8%	4.6%
Total	100.0%	100.0%	100.0%
Median Age	45.1	47.0	40.6

Source: Esri

HOUSEHOLD INCOME

- ◆ Annual median income over all households in the Montague/Greenfield area falls more than \$7 thousand shy of the level seen within Franklin County as a whole.
- ◆ Through the middle incomes, the towns and state post similar shares. For Montague/Greenfield, 44.7% of households see income in the \$50,000 to \$150,000 range, similar to Massachusetts' 44.1%.
- ◆ At the lower end, however, the disparity becomes apparent with more than one in three households in the Montague/Greenfield area (34.4%) seeing incomes below \$35,000. For Massachusetts that ratio is less than one in four (21.6%).
- ◆ Conversely, one in four Massachusetts households (25.6%) see incomes at or above \$150,000 but for Montague/Greenfield, that measure is less than one in thirteen (7.6%).



2021 Household Income Distribution

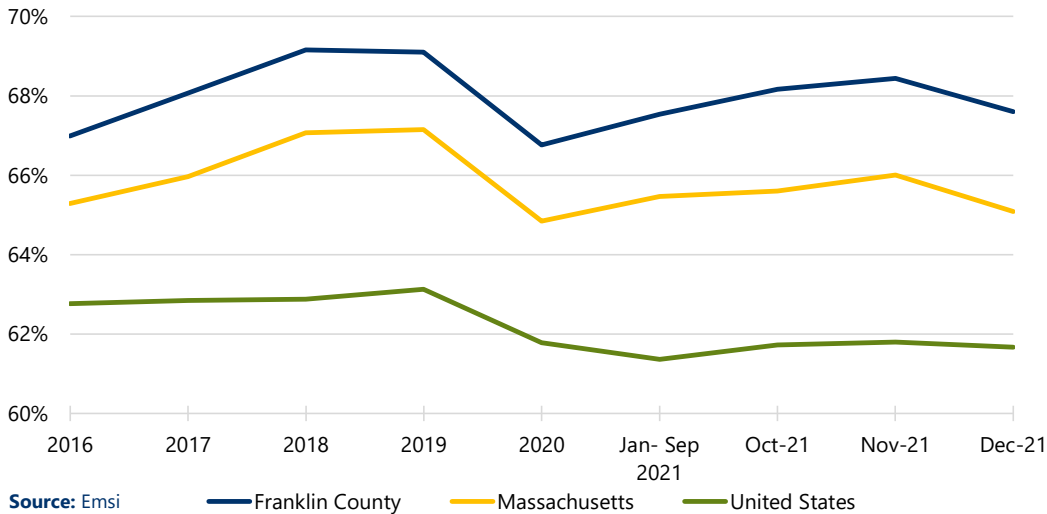
	Montague/ Greenfield	Franklin Co	Massachusetts
less than \$15,000	10.1%	8.4%	9.0%
\$15,000-\$24,999	15.3%	11.5%	6.5%
\$25,000-\$34,999	9.0%	8.8%	6.1%
\$35,000-\$49,999	13.3%	11.5%	8.7%
\$50,000-\$74,999	20.2%	21.3%	14.0%
\$75,000-\$99,999	11.1%	11.0%	12.0%
\$100,000-\$149,999	13.5%	16.4%	18.2%
\$150,000-\$199,999	5.0%	7.0%	10.9%
\$200,000 or greater	2.6%	4.2%	14.7%
Total	100.0%	100.0%	100.0%
Median Income	\$51,923	\$59,062	\$85,273
Average Income	\$67,266	\$78,382	\$118,826

Source: Esri

LABOR FORCE PARTICIPATION

- ◆ Over the past five years, Franklin County has consistently shown higher levels of labor force participation than either the state or nation.
- ◆ The onset of the pandemic saw these rates drop nationwide with reductions of 2.3% for both the U.S. and Massachusetts in 2020. For Franklin County, however, the adjustment was more modest, bumping down just 1.3%.
- ◆ Renewed economic activity over the first half of 2021 brought a rapid 1.4% rebound in labor force participation for Franklin County through 3Q21. The state also managed a fairly strong comeback as well, though not quite as strong.
- ◆ Gains continued through November 2021 for the state and county before taking a slight step back in December.
- ◆ Meanwhile, U.S. rates have yet to post any sizable turn-around.

Labor Force Participation Rate - 2016-Present



Labor Force Participation Rate

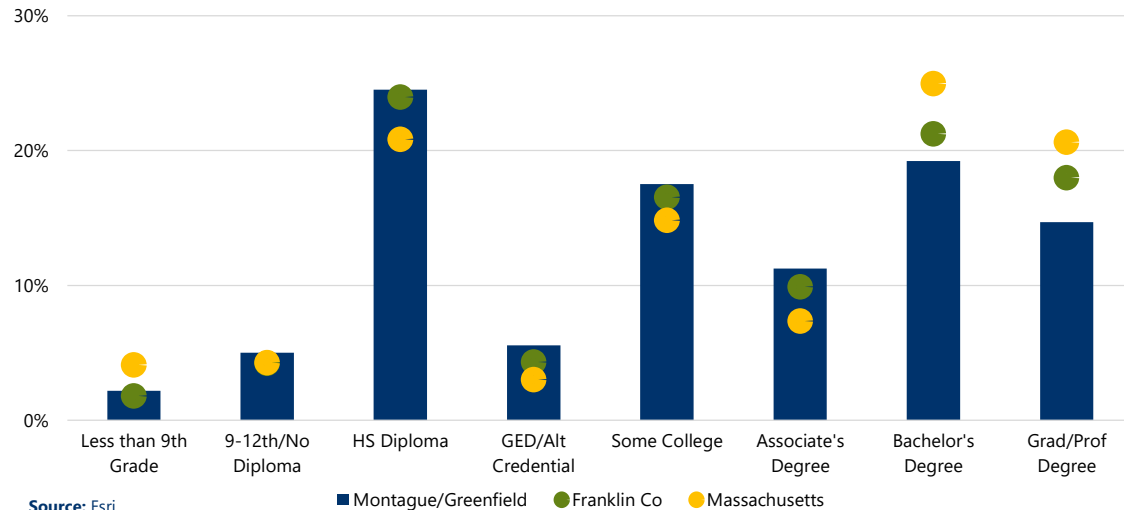
	Franklin County	Massachusetts	United States
2016	67.0%	65.3%	62.8%
2017	68.1%	66.0%	62.9%
2018	69.2%	67.1%	62.9%
2019	69.1%	67.2%	63.1%
2020	66.8%	64.8%	61.8%
Jan- Sep 2021	67.5%	65.5%	61.4%
Oct-21	68.2%	65.6%	61.7%
Nov-21	68.4%	66.0%	61.8%
Dec-21	67.6%	65.1%	61.7%

Source: Emsi

EDUCATIONAL ATTAINMENT

- ◆ Franklin County reports a significantly lower share of residents holding a bachelor's degree or higher (39.2%) as compared to the state (45.6%).
- ◆ The proportion with a bachelor's or advanced degree make up an even smaller proportion in the Montague/Greenfield (33.9%).
- ◆ The community does, however, see a higher proportion of its working-age population having completed high school (or equivalent). For the state, the proportion not completing high school is 8.4%, while for Franklin County this measure drops to just 6.0%. At 7.2%, the Montague/Greenfield area does not rate quite as low as the overall county but it still stands below the state level.

Educational Attainment for Population 25 Years of Age and older- 2021



Source: Esri

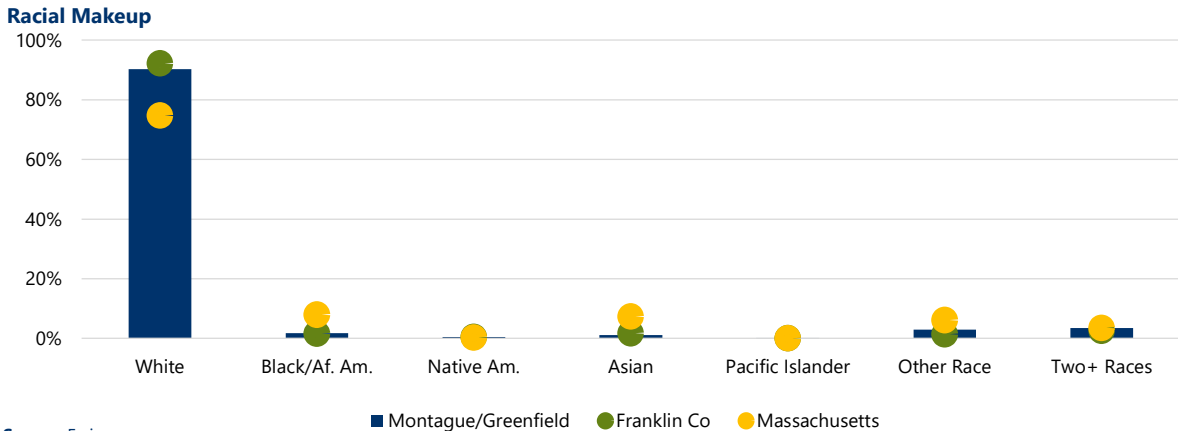
2021 Educational Attainment - Residents aged 25 years and over

	Montague/ Greenfield	Franklin Co	Massachusetts
Less than High School	7.2%	6.0%	8.4%
Less than 9th Grade	2.2%	1.8%	4.1%
9-12th Grade/No Diploma	5.0%	4.2%	4.3%
High School or Equivalent	30.1%	28.3%	23.8%
High School Diploma	24.5%	24.0%	20.8%
GED/Alternative Credential	5.6%	4.3%	3.0%
Some College/Associates Degree	28.8%	26.4%	22.2%
Some College/No Degree	17.5%	16.6%	14.8%
Associate's Degree	11.3%	9.9%	7.4%
Bachelor's Degree or Higher	33.9%	39.2%	45.6%
Bachelor's Degree	19.2%	21.2%	25.0%
Graduate/Professional Degree	14.7%	18.0%	20.6%
Total	100.0%	100.0%	100.0%

Source: Esri

RACE AND ETHNICITY

- ◆ Franklin County counts whites as a significantly higher proportion of population (92.3%) than does Massachusetts overall (74.8%). The Town of Montague shows a somewhat lower proportion than does the County with white people comprising nine out of ten residents (90.3%)
- ◆ This high share of white residents is also reflected in the modest proportion of black and of Asian descent. Combined, these two minorities come to about 3% for both Montague/Greenfield and for Franklin County. In contrast, these groups represent more than 15% of the statewide population.
- ◆ Conversely, a modest 4.5% of both Franklin County residents identify as Hispanic as compared to a full 13.2% statewide.



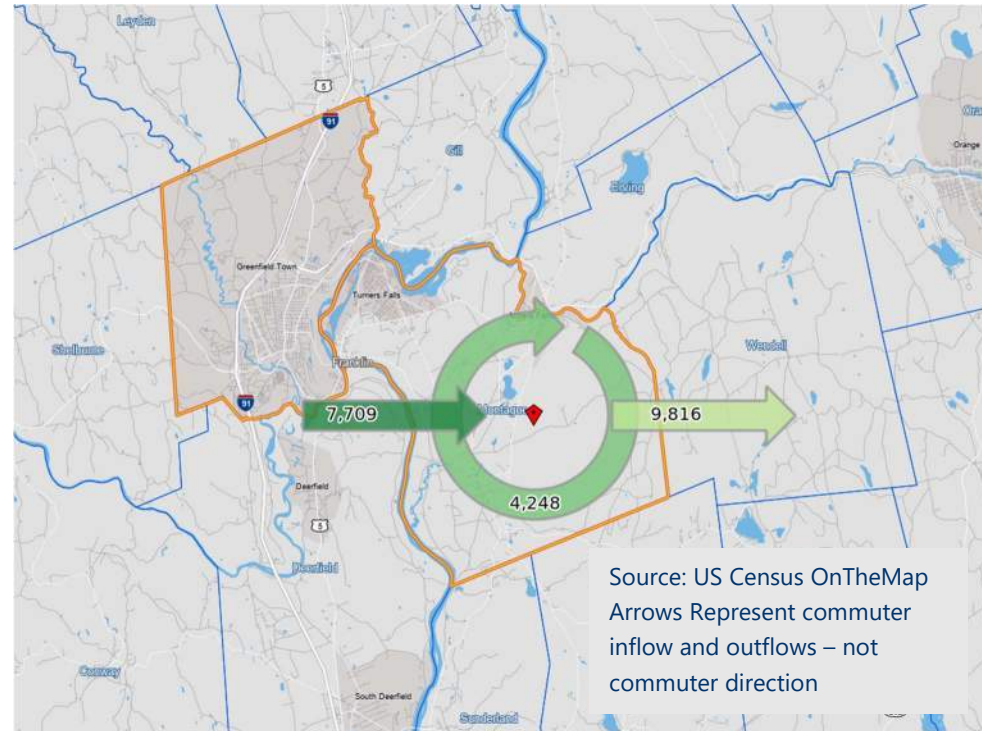
2021 Racial Makeup

	Montague/ Greenfield	Franklin Co	Massachusetts
White	90.3%	92.3%	74.8%
Black/African American	1.7%	1.6%	7.9%
Native American	0.5%	0.5%	0.3%
Asian	1.1%	1.7%	7.4%
Pacific Islander	0.0%	0.0%	0.0%
Other Race	2.9%	1.3%	6.1%
Two or More Races	3.5%	2.6%	3.5%
Total	100.0%	100.0%	100.0%
Hispanic	7.3%	4.5%	13.2%

Source: Esri

COMMUTE PATTERNS

- ◆ Out of Montague/Greenfield’s total work force of 11,957, a little over one third, 4,248, also make their home in the two towns as of 2019. The balance is made up of in-bound commuters numbering 9,816 workers.
- ◆ Meanwhile, another 7,709 residents commute out of Montague/Greenfield to work elsewhere.
- ◆ Of those Montague/Greenfield residents who work outside of the two towns, their most common destination is a near tie between Hampshire County (14.3%) and elsewhere in the Franklin County (14.0%).
- ◆ The most common origin of workers coming into Montague/Greenfield is also from elsewhere in Franklin County (24.8%), the next most common is again, Hampshire County (9.0%).
- ◆ Data presented reflects commute patterns in 2019, the most recent available. In the wake of the pandemic, some of these proportions have likely changed.



Commuter Origins and Destinations - 2019

	Montague/Greenfield	Elsewhere in Franklin Co.	Hampshire County	Hampden County	Worcester County	Other	Total
Live in Montague/Greenfield-Work in:	4,248	1,965	2,013	1,460	993	3,385	14,064
Share	30.2%	14.0%	14.3%	10.4%	7.1%	24.1%	100.0%
Work in Montague/Greenfield-Live in:	4,248	2,963	1,077	928	692	2,049	11,957
Share	35.5%	24.8%	9.0%	7.8%	5.8%	17.1%	100.0%

Source: U.S. Census OnTheMap

ECONOMIC PROFILE

EMPLOYMENT BY SECTOR – 2-DIGIT NAICS

- ◆ Of Montague/Greenfield’s 12,000+ workers, an exceptionally high share, 25.1%, work in Healthcare. This sector is boosted in part by employment at Baystate Franklin Medical Center, The United Arc, and Charlene Manor Extended Care.
- ◆ Retail also makes a strong showing thanks in part to Hamshaw Lumber (formerly Leader Home Center with estimated sales of \$11M). The manufacturing segment sees a significant support coming from the presence of BETE Fog Nozzle (designs & machines spray nozzles), Lifelight Foods (produces food for plant-based diets), Mayhew Steel Products (punches and chisels), specialty film maker Charter NEX, and others.

Employment - 2021

Sector (NAICS Code)	Montague-Greenfield		Franklin County		Massachusetts	
	Level	Percent	Level	Percent	Level	Percent
Agriculture, Forestry, Fishing and Hunting (11)	50	0.4%	1,038	3.6%	16,974	0.4%
Mining, Quarrying, and Oil and Gas Extraction (21)	5	0.0%	11	0.0%	877	0.0%
Utilities (22)	9	0.1%	49	0.2%	12,186	0.3%
Construction (23)	513	4.1%	1,692	5.9%	204,947	5.4%
Manufacturing (31)	1,195	9.6%	3,725	12.9%	234,902	6.2%
Wholesale Trade (42)	216	1.7%	501	1.7%	118,759	3.1%
Retail Trade (44)	1,540	12.3%	2,905	10.0%	342,639	9.0%
Transportation and Warehousing (48)	190	1.5%	884	3.1%	97,379	2.6%
Information (51)	166	1.3%	256	0.9%	93,341	2.5%
Finance and Insurance (52)	284	2.3%	413	1.4%	180,838	4.8%
Real Estate and Rental and Leasing (53)	105	0.8%	188	0.7%	58,003	1.5%
Professional, Scientific, and Technical Services (54)	438	3.5%	1,020	3.5%	397,504	10.5%
Management of Companies and Enterprises (55)	645	5.2%	645	2.2%	68,957	1.8%
Admin and Support and Waste Mgt and Remediation Svcs (56)	350	2.8%	845	2.9%	190,041	5.0%
Educational Services (61)	579	4.6%	1,876	6.5%	237,200	6.2%
Health Care and Social Assistance (62)	3,133	25.1%	4,624	16.0%	640,176	16.8%
Arts, Entertainment, and Recreation (71)	150	1.2%	689	2.4%	54,020	1.4%
Accommodation and Food Services (72)	536	4.3%	1,534	5.3%	228,411	6.0%
Other Services (except Public Administration) (81)	601	4.8%	1,150	4.0%	179,617	4.7%
Government (90)	1,779	14.3%	4,863	16.8%	444,596	11.7%
Total	12,484	100.0%	28,908	100.0%	3,801,370	100.0%

Source: Emsi/Camoin Associates

EMPLOYMENT CONCENTRATION – 2-DIGIT NAICS

- ◆ A Location Quotient compares the local employment share of an industry to the national average. An LQ over 1.0 indicates a higher-than-average concentration of that sector. Making up over one quarter of total employment in Montague/Greenfield, it comes as no surprise to see this ratio for the Healthcare sector measuring a very strong 1.93.
- ◆ The healthy showing by Manufacturing lifted the LQ for that industry up to 1.23 but for the broader county, this measure jumps to 1.66 due in part to Rodney Hunt in Orange (hydro-gate manufacturer) and Erving Industries in Erving (paper products).
- ◆ With the second greatest number of farms in the state (over 800), Franklin County also scores high in Agricultural activities. The county also includes 18% of the state’s total farm acreage – again, second highest in the state.
- ◆ Northfield Mount Hermon School and Deerfield Academy, both preparatory schools, along Montague High School and Franklin County Technical School all contribute to the very strong educational employment in Franklin County.

Location Quotient - 2021

Sector (NAICS Code)	Montague/ Greenfield		
	Montague/ Greenfield	Franklin County	Massachusetts
Agriculture, Forestry, Fishing and Hunting (11)	0.32	2.82	0.35
Mining, Quarrying, and Oil and Gas Extraction (21)	0.12	0.12	0.07
Utilities (22)	0.21	0.49	0.93
Construction (23)	0.70	1.00	0.92
Manufacturing (31)	1.23	1.66	0.79
Wholesale Trade (42)	0.48	0.48	0.87
Retail Trade (44)	1.24	1.01	0.90
Transportation and Warehousing (48)	0.36	0.73	0.61
Information (51)	0.73	0.49	1.36
Finance and Insurance (52)	0.53	0.33	1.12
Real Estate and Rental and Leasing (53)	0.49	0.38	0.88
Professional, Scientific, and Technical Services (54)	0.50	0.51	1.50
Management of Companies and Enterprises (55)	3.57	1.54	1.25
Admin and Support and Waste Mgt and Remediation Svcs (56)	0.46	0.48	0.82
Educational Services (61)	1.77	2.48	2.38
Health Care and Social Assistance (62)	1.93	1.23	1.29
Arts, Entertainment, and Recreation (71)	0.86	1.70	1.01
Accommodation and Food Services (72)	0.60	0.74	0.83
Other Services (except Public Administration) (81)	0.94	0.78	0.92
Government (90)	0.96	1.13	0.78
Total	1.00	1.00	1.00

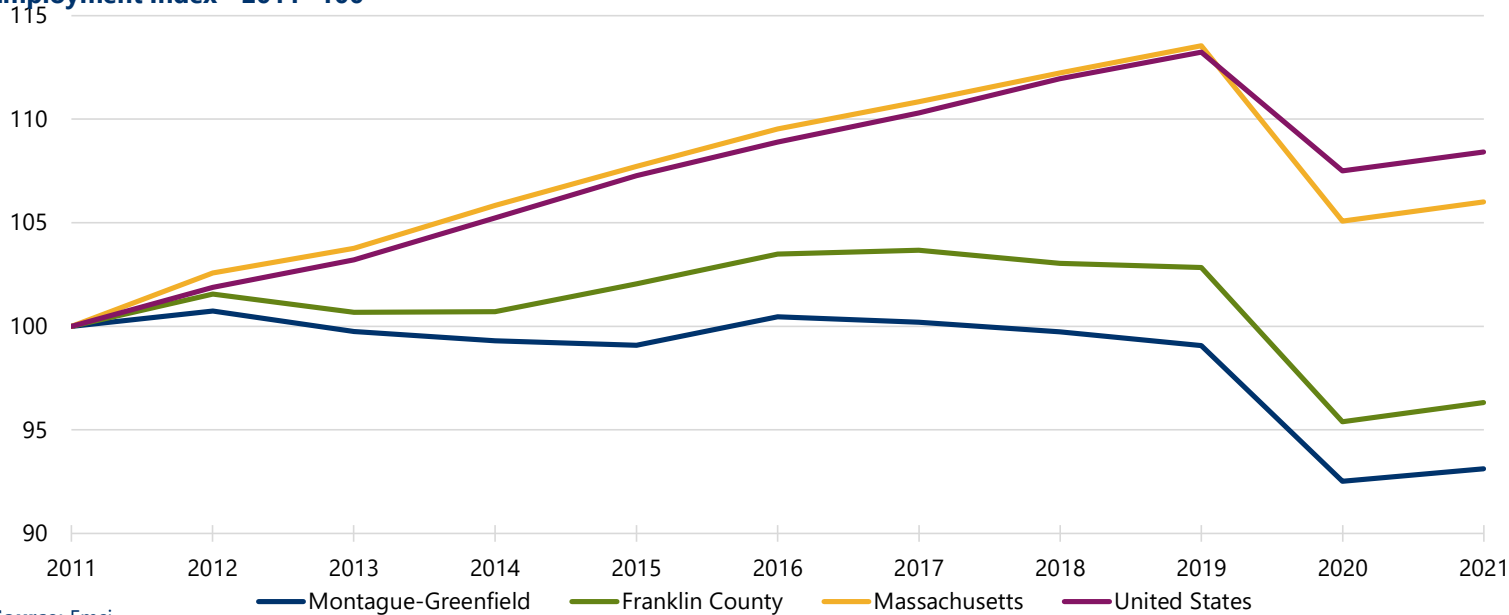
Source: Emsi/Camoin Associates

Note: NAICS 90, Government, includes federal, state, and local government (including military and postal service), prisons and jails, as well as public schools and hospitals.

HISTORIC EMPLOYMENT INDEX

- ◆ From 2011 to 2019, the number of jobs in Massachusetts rose a little over 11% - about on par with the U.S. average. Meanwhile, Montague fluctuated slightly over the same period but stayed within 1% of its 2011 level. Meanwhile, the county fared only slightly better, rising less than 4% by 2017 before settling back slightly over the subsequent two years.
- ◆ Onset of the pandemic wiped out jobs around the world and the Commonwealth was not spared, declining 7.5% in 2020. Franklin County essentially matched that decline with a 7.2% job loss while the decline seen by Montague/Greenfield was slightly moderated. The two towns fell 6.6% and stood more than one thousand jobs below the 2016 peak
- ◆ In 2021 the nation, state, county, and Montague/Greenfield all saw an end to the declines and each registered a modest rebound in total employment on the order of 0.7% to 1.0%.

Employment Index - 2011=100



Source: Emsi

HISTORIC AND FORECAST EMPLOYMENT GROWTH – 2-DIGIT NAICS

- ◆ As well as being its largest sector, healthcare also added the most jobs over the 2011-2019 period, growing by 8.9%. Since the pandemic hit there has been a subsequent decline of more than 3% but prospects remain quite strong for this segment.
- ◆ As seen nationwide, accommodation and food services saw the most severe layoffs brought on by the pandemic. Also hit especially hard were retail and government workers with over 300 jobs lost in the Montague/Greenfield area between the two sectors. A few industries remained surprisingly resilient over this period, specifically professional services, wholesale and agriculture which all actually managed to gain employment in 2020.
- ◆ The 2021 rebound was spread amongst many sectors though in total only a fraction of lost jobs were regained. Two of the largest segments, healthcare and government continued to shed jobs during this timeframe.

Montague/Greenfield - Employment Patterns

Sector (NAICS Code)	2011-2019		2019-2020		2020-2021		2021-2026	
	Level Change	Pct Change	Level Change	Pct Change	Level Change	Pct Change	Level Change	Pct Change
Agriculture, Forestry, Fishing and Hunting (11)	7	21.9%	11	28.2%	0	0.0%	3	6.0%
Mining, Quarrying, and Oil and Gas Extraction (21)	0	0.0%	-1	-16.7%	1	20.0%	-2	-33.3%
Utilities (22)	-24	-80.0%	3	50.0%	0	0.0%	-1	-11.1%
Construction (23)	62	12.4%	-57	-10.1%	6	1.2%	-6	-1.2%
Manufacturing (31)	-158	-11.2%	-84	-6.7%	29	2.5%	-33	-2.8%
Wholesale Trade (42)	-110	-38.3%	13	7.3%	26	13.7%	22	10.2%
Retail Trade (44)	-88	-5.1%	-128	-7.9%	39	2.6%	-129	-8.4%
Transportation and Warehousing (48)	-116	-40.7%	-4	-2.4%	25	15.2%	10	5.3%
Information (51)	2	1.0%	-30	-15.4%	1	0.6%	-17	-10.2%
Finance and Insurance (52)	-137	-31.7%	-6	-2.0%	-5	-1.7%	-30	-10.6%
Real Estate and Rental and Leasing (53)	19	17.3%	-24	-18.6%	0	0.0%	-5	-4.8%
Professional, Scientific, and Technical Services (54)	11	2.9%	26	6.6%	16	3.8%	27	6.2%
Management of Companies and Enterprises (55)	67	12.1%	-3	-0.5%	28	4.5%	32	5.0%
Admin and Support and Waste Mgt and Remediation Svcs (56)	57	16.1%	-54	-13.2%	-6	-1.7%	-24	-6.9%
Educational Services (61)	108	23.5%	-17	-3.0%	28	5.1%	55	9.5%
Health Care and Social Assistance (62)	265	8.9%	-52	-1.6%	-47	-1.5%	180	5.7%
Arts, Entertainment, and Recreation (71)	13	9.5%	0	0.0%	0	0.0%	39	26.0%
Accommodation and Food Services (72)	-43	-5.4%	-229	-30.2%	7	1.3%	-111	-20.7%
Other Services (except Public Administration) (81)	-124	-15.8%	-65	-9.8%	4	0.7%	-36	-6.0%
Government (90)	64	3.3%	-175	-8.6%	-71	-3.8%	-108	-6.1%
Total	-125	-0.9%	-876	-6.6%	81	0.7%	-134	-1.1%

Source: Emsi

EMPLOYMENT BY SECTOR – 4-DIGIT NAICS

- ◆ Looking at a more granular level, seven of the top fifteen largest sectors in Montague/Greenfield fall within the healthcare sector, accounting for over 2,700 jobs.
- ◆ The three separate government subsectors also represent a significant portion of the top fifteen, accounting for 1,482 positions.
- ◆ The lone manufacturing sector of the collection, plastics products manufacturing (3261) registers a very high Location Quotient and has shown healthy gains over the past decade (up 15.3%).

Montague/Greenfield - Largest Sectors 2021

Sector (NAICS Code)	2011 Emp	2021 Emp	2021 Location Quotient
General Medical and Surgical Hospitals (6221)	678	666	1.79
Management of Companies and Enterprises (5511)	553	645	3.57
Individual and Family Services (6241)	207	624	2.82
Education and Hospitals (Local Government) (9036)	679	602	0.95
Local Government, Excluding Education and Hospitals (9039)	575	539	1.25
Restaurants and Other Eating Places (7225)	709	504	0.69
Plastics Product Manufacturing (3261)	425	490	10.80
Grocery Stores (4451)	577	421	1.91
Elementary and Secondary Schools (6111)	364	408	4.32
Nursing Care Facilities (Skilled Nursing Facilities) (6231)	646	367	3.29
Education and Hospitals (State Government) (9026)	457	341	1.45
Offices of Other Health Practitioners (6213)	277	335	3.84
Residential Intellectual and Developmental Disability, Mental Health, and Substance Abuse Facilities (6232)	161	254	5.20
Offices of Physicians (6211)	217	239	1.11
Outpatient Care Centers (6214)	134	231	2.81

Source: Emsi

EMPLOYMENT GAINS AND LOSSES – 4-DIGIT NAICS

- ◆ The largest employment gains over the past decade were seen in Individual and Family Services (6241) which gained over 400 jobs and includes most prominently the Franklin County office of the Community Action of the Pioneer Valley and LifePath elderly services. The next two fastest growing were also in the healthcare and social assistance sector, Outpatient Care Centers (6214) and mental health facilities (6232), which added an additional 190 jobs.
- ◆ The sector with the greatest number of job losses is also amongst the healthcare providers. Nursing care facilities (6231) fell by 43.2% over the past ten years – a total of 279 positions lost. Close behind were the 256 jobs lost in Architectural and Structural Metals Manufacturing (3323) which declined by 256 workers, a precipitous 90% reduction.

Montague/Greenfield Employment Gains and Losses by Sector - 2011 to 2021

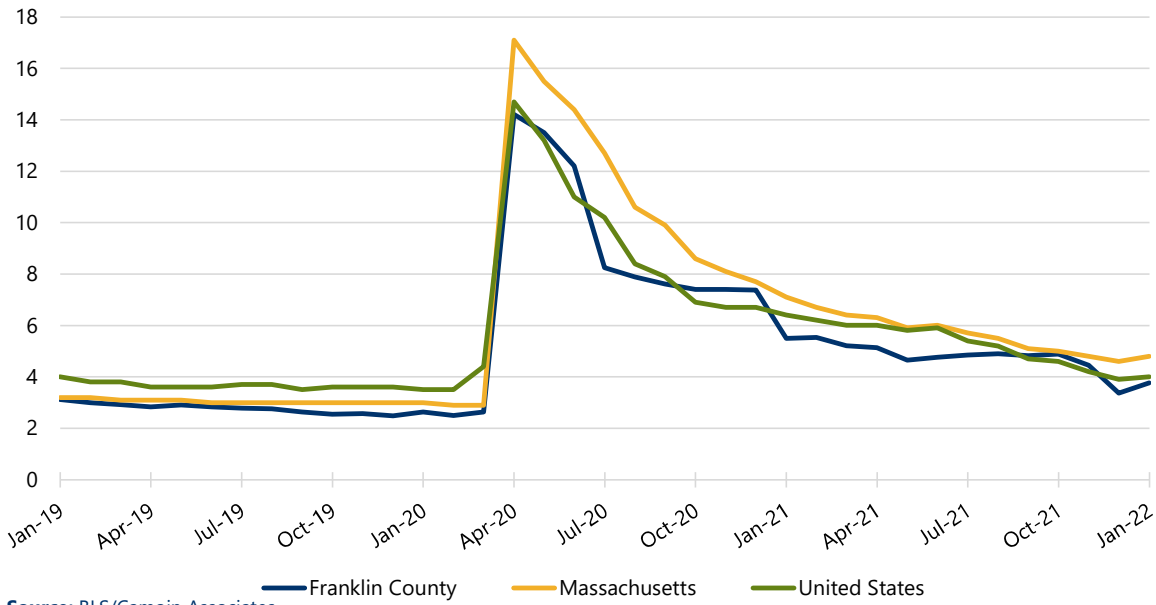
	2011 Emp	2021 Emp	2011-2021 Change	2011-2021 Pct Change
Strongest Gains				
Individual and Family Services (6241)	207	624	417	201.4%
Outpatient Care Centers (6214)	134	231	97	72.4%
Residential Intellectual & Developmental Disability, Mental Health, and Substance Abuse Facilities (6232)	161	254	93	57.8%
Management of Companies and Enterprises (5511)	553	645	92	16.6%
Plastics Product Manufacturing (3261)	425	490	65	15.3%
Greatest Losses				
Nursing Care Facilities (Skilled Nursing Facilities) (6231)	646	367	-279	-43.2%
Architectural and Structural Metals Manufacturing (3323)	284	28	-256	-90.1%
Restaurants and Other Eating Places (7225)	709	504	-205	-28.9%
Grocery Stores (4451)	577	421	-156	-27.0%
Couriers and Express Delivery Services (4921)	240	103	-137	-57.1%

Source: Emsi

RECENT UNEMPLOYMENT

- ◆ The sharp loss of jobs brought on by the pandemic pushed unemployment rates to levels not seen in 80 years. In Franklin County, one in seven workers were without a job. For Massachusetts that figure was one in six.
- ◆ Given the severity of the economic conditions, unemployment subsequently dropped fairly quickly, reaching 5.1% for the county one year after the 2020 peak – a 9.1% decline.
- ◆ A mild downward trend in unemployment continued through 2021 as rates settled back below 3.4% for Franklin County by December.

Unemployment Rate - Percentage



Source: BLS/Camoin Associates

COMPETITIVE EFFECT – 2-DIGIT NAICS

- ◆ Over the 2011-2021 period Montague lost 920 jobs in total, an 6.9% decline. Despite the pandemic driven contraction, total employment in the U.S. remained up 7.5% over the same timeframe. Of course, adjustments occurred at differing rates amongst the industries. The measure of Competitive Effect reflects where a city or region stands relative to where it might have been had each of the industries grown at the same pace as the national average.
- ◆ Had Montague/Greenfield seen the same pace of expansion & decline witnessed throughout the U.S. economy, Competitive Effect analysis indicates that employment would register 17.2% higher than currently seen. That equates to 2,143 more jobs.

Montague/Greenfield - Competitive Effect

Sector (NAICS Code)	2011-2021 Emp Change	2021 Emp	Competitive Effect
Agriculture, Forestry, Fishing and Hunting (11)	18	50	17
Mining, Quarrying, and Oil and Gas Extraction (21)	0	6	0
Utilities (22)	-21	9	-20
Construction (23)	11	513	-123
Manufacturing (31)	-213	1,195	-265
Wholesale Trade (42)	-71	216	-72
Retail Trade (44)	-177	1,540	-226
Transportation and Warehousing (48)	-95	190	-213
Information (51)	-27	166	-31
Finance and Insurance (52)	-148	284	-199
Real Estate and Rental and Leasing (53)	-5	105	-22
Professional, Scientific, and Technical Services (54)	53	438	-44
Management of Companies and Enterprises (55)	92	645	-22
Admin and Support and Waste Mgt and Remediation Svcs (56)	-3	350	-43
Educational Services (61)	119	579	57
Health Care and Social Assistance (62)	166	3,133	-378
Arts, Entertainment, and Recreation (71)	13	150	20
Accommodation and Food Services (72)	-265	536	-256
Other Services (except Public Administration) (81)	-185	601	-179
Government (90)	-182	1,779	-142
Total	-920	12,485	-2,143

Source: Emsi

OCCUPATION CONCENTRATION – 2-DIGIT SOC

- ◆ With the Montague/Greenfield area's high concentration in healthcare, social services and education it is not surprising to find similarly strong concentrations in occupations oriented towards these industries including community & social service jobs, healthcare support positions, healthcare practitioners and education-based jobs.
- ◆ The community is also fortunate to host an above average proportion of management positions which provide earnings significantly above average.
- ◆ Franklin County also shows a much higher than average share of agricultural jobs, thanks to its large number of farms.

Occupations - 2021

	Montague/Greenfield			Franklin County			Median Ann. Earnings
	Jobs	Pct	LQ	Jobs	Pct	LQ	
Management Occupations (11)	1,003	8.0%	1.27	2,407	8.3%	1.32	\$93,969
Business and Financial Operations Occupations (13)	621	5.0%	0.84	1,217	4.2%	0.71	\$72,723
Computer and Mathematical Occupations (15)	232	1.9%	0.60	414	1.4%	0.46	\$85,507
Architecture and Engineering Occupations (17)	135	1.1%	0.64	359	1.2%	0.74	\$79,792
Life, Physical, and Social Science Occupations (19)	149	1.2%	1.26	263	0.9%	0.96	\$77,160
Community and Social Service Occupations (21)	515	4.1%	2.31	900	3.1%	1.74	\$43,303
Legal Occupations (23)	111	0.9%	1.01	190	0.7%	0.74	\$91,057
Educational Instruction and Library Occupations (25)	975	7.8%	1.34	2,913	10.1%	1.73	\$59,626
Arts, Design, Entertainment, Sports, and Media Occupations (27)	256	2.1%	1.11	634	2.2%	1.19	\$49,209
Healthcare Practitioners and Technical Occupations (29)	1,055	8.4%	1.47	1,433	5.0%	0.86	\$73,681
Healthcare Support Occupations (31)	961	7.7%	1.68	1,806	6.2%	1.36	\$31,651
Protective Service Occupations (33)	277	2.2%	1.03	701	2.4%	1.12	\$60,395
Food Preparation and Serving Related Occupations (35)	708	5.7%	0.79	1,799	6.2%	0.86	\$27,180
Building and Grounds Cleaning and Maintenance Occupations (37)	345	2.8%	0.80	936	3.2%	0.93	\$34,090
Personal Care and Service Occupations (39)	397	3.2%	1.14	848	2.9%	1.06	\$28,752
Sales and Related Occupations (41)	1,082	8.7%	0.93	2,165	7.5%	0.80	\$29,398
Office and Administrative Support Occupations (43)	1,385	11.1%	0.90	2,763	9.6%	0.77	\$41,688
Farming, Fishing, and Forestry Occupations (45)	32	0.3%	0.34	564	2.0%	2.58	\$27,795
Construction and Extraction Occupations (47)	415	3.3%	0.72	1,322	4.6%	0.98	\$52,661
Installation, Maintenance, and Repair Occupations (49)	372	3.0%	0.76	985	3.4%	0.88	\$49,116
Production Occupations (51)	689	5.5%	0.99	2,120	7.3%	1.31	\$36,857
Transportation and Material Moving Occupations (53)	771	6.2%	0.73	2,085	7.2%	0.85	\$32,274
Military-only occupations (55)	0	0.0%	0.00	83	0.3%	0.46	\$55,780
Total	12,486	100.0%		28,907	100.0%		

Source: Emsi

RESIDENTIAL MARKET

HOUSEHOLDS BY AGE AND INCOME – 2021 TO 2026

- ◆ Combined, the Town of Montague and City of Greenfield are home to 11,769 households. Of those, more than one third (34.4%) see an income of less than \$35,000. Well over two thirds of these households take in less than \$75,000 per year.
- ◆ More than half (52.8%) of the Montague/Greenfield households are headed by a resident aged 55 years or older. Those aged 65 and older account for nearly one third (31.8%).
- ◆ Over the coming five years, the ranks of those over 65 are expected to swell by 379 more households – a 10.1% increase.
- ◆ An increase in the number of senior households will be outstripped, however, by declines amongst the younger cohorts. Those households headed by folks aged 64 and under will decline by 6.1% - a loss of 496 households.

Number of Households by Income and Age - Montague/Greenfield Area 2021

Income	Age of Primary Householder							Total
	<25	25-34	35-44	45-54	55-64	65-74	75+	
<\$15,000	73	134	142	149	271	229	194	1,192
\$15,000-\$24,999	74	213	152	188	329	381	461	1,798
\$25,000-\$34,999	49	153	109	136	179	189	240	1,055
\$35,000-\$49,999	72	206	192	206	288	318	284	1,566
\$50,000-\$74,999	85	320	343	434	547	456	193	2,378
\$75,000-\$99,999	33	203	210	240	300	215	100	1,301
\$100,000-\$149,999	21	220	389	307	345	231	74	1,587
\$150,000-\$199,999	4	85	81	158	137	68	54	587
\$200,000+	0	40	56	73	75	50	11	305
Total Households	411	1,574	1,674	1,891	2,471	2,137	1,611	11,769
Median HH Income	\$36,411	\$54,510	\$65,444	\$62,749	\$55,536	\$47,039	\$30,516	\$51,923

Projected Change - 2021 to 2026

Income	Age of Primary Householder							Total
	<25	25-34	35-44	45-54	55-64	65-74	75+	
<\$15,000	-5	-19	-14	-24	-54	-4	26	-94
\$15,000-\$24,999	-7	-37	-22	-38	-82	-33	26	-193
\$25,000-\$34,999	-9	-22	-11	-22	-33	-13	25	-85
\$35,000-\$49,999	0	-17	-10	-36	-49	-12	41	-83
\$50,000-\$74,999	8	-21	8	-60	-57	34	58	-30
\$75,000-\$99,999	1	4	22	-7	-24	30	41	67
\$100,000-\$149,999	1	18	30	3	4	44	43	143
\$150,000-\$199,999	1	15	19	19	9	19	35	117
\$200,000+	0	1	5	13	3	15	4	41
Total Households	-10	-78	27	-152	-283	80	299	-117
Median HH Income	\$2,710	\$4,484	\$5,736	\$6,439	\$4,315	\$4,737	\$3,644	\$3,247

Source: Esri

POSTAL FORWARDING

- ◆ Many communities in the Northeast have seen flat or declining populations over the past decade. In many instances, however, “pandemic refugees” have fled larger cities to settle in smaller towns giving them a recent bump up in residents. This has not been the case for the Montague/Greenfield area. In large part these relocating households moved to a vacation home which was owned prior to the pandemic. The two towns are not as much vacation destinations as those closer to ski areas and have not historically drawn the same degree of second home buyers.
- ◆ Rather, while thousands have in fact settled within the area, more have relocated away as evidenced by Postal Service data. The steady pace of families and individuals moving out of the Montague/Greenfield area held steady through 2020 and 2021.

Net Change Postal Forwarding - Montague/Greenfield

	Moved Away			Moved To			Net Change
	Families	Individuals	Total	Families	Individuals	Total	
2018	573	1,903	2,476	411	1,833	2,244	-232
2019	615	2,381	2,996	451	2,274	2,725	-271
2020	417	2,228	2,645	335	2,138	2,473	-172
2021	407	2,113	2,520	311	2,003	2,314	-206
2022*	81	463	544	72	351	423	-121

*Two months year-to-date

Source: USPS

HOUSING UNIT INVENTORY

- ◆ Montague and Greenfield contain a combined 12,648 housing units. Just over half of these (54.5%) are owner occupied and the lion's share (38.5%) of the balance are renter occupied.
- ◆ Less than one percent (0.8%) are used as vacation homes. Franklin County, on the other hand sees a good share of its housing stock dedicated to vacation units – nearly on par with the statewide average. Note that Massachusetts sees especially high proportions of vacation homes in Barnstable County (Cape Cod) which raises the overall share.
- ◆ Any new construction would likely become resident occupied as the Montague/Greenfield area does not seem to attract a great deal of second home buyers.

Housing Unit Inventory - 2021

Status	Town of Montague	City of Greenfield	Montague/ Greenfield	Franklin County	Massachusetts
Owner Occupied	2,373	4,522	6,895	21,970	1,680,692
Renter Occupied	1,406	3,468	4,874	9,324	1,018,941
Seasonally Vacant	39	62	101	1,348	127,398
All Other Vacant	235	543	778	2,138	145,570
Total Housing Units	4,053	8,595	12,648	34,780	2,972,601
Percent					
Owner Occupied	58.5%	52.6%	54.5%	63.2%	56.5%
Renter Occupied	34.7%	40.3%	38.5%	26.8%	34.3%
Seasonally Vacant	1.0%	0.7%	0.8%	3.9%	4.3%
All Other Vacant	5.8%	6.3%	6.2%	6.1%	4.9%
Total Housing Units	100.0%	100.0%	100.0%	100.0%	100.0%

Source: Esri/Camoin Associates

HOUSING VINTAGE

- ◆ Just over one in twenty of the Montague/Greenfield housing stock has been constructed in the past two decades (5.6% since 2000). In fact, for every unit built since 2000, seven more were already in place before the start of WWII.
- ◆ What's more, over half of the homes found in Montague/Greenfield were built during the Truman administration or earlier.
- ◆ The upshot is that a good portion of residents live in older units which likely requiring regular maintenance and upkeep. Unless there has been a great deal of restoration and renovation activity, a housing market with stock of this size and age would expect to see one hundred or more new units built annually simply to replace stock that has become inadequate due to deficient plumbing, heating or wiring, or if general upkeep has become unreasonably burdensome.

Housing Unit Vintage

Year Units Constructed	Town of Montague	City of Greenfield	Montague/ Greenfield	Franklin County	Massachusetts
2014 or Later	0.2%	3.1%	2.1%	1.2%	1.6%
2010-2013	0.0%	1.3%	0.8%	0.8%	1.7%
2000-2009	3.2%	2.3%	2.6%	5.7%	7.1%
1990-1999	6.0%	2.8%	3.8%	6.8%	7.7%
1980-1989	6.9%	9.4%	8.6%	13.4%	10.8%
1970-1979	11.5%	9.1%	9.9%	12.6%	11.6%
1960-1969	9.9%	7.6%	8.3%	8.2%	10.2%
1950-1959	14.4%	14.2%	14.3%	10.2%	11.3%
1940-1949	4.9%	7.4%	6.6%	4.5%	5.5%
1939 or Earlier	43.0%	42.8%	42.9%	36.5%	32.5%
Total	100.0%	100.0%	100.0%	100.0%	100.0%
Median Year of Construction	1952	1950	1950	1959	1961

Source: Esri

RESIDENTIAL CONSTRUCTION ACTIVITY

- ◆ New housing starts in Montague/Greenfield have been quite modest over the past decade, totaling just 205 units from 2011 to 2020. That accounts for less than two percent of the area's total stock (1.6% of 12,600+ units).
- ◆ Of those most recently built homes, only 40% are single family units. Three fifths of the newly constructed dwellings are in multifamily structures and the majority of those are in properties with five or more units (64 out of 123 multifamily units).
- ◆ This level of new construction registers as the bare minimum needed to maintain the existing housing stock as older units fall into disrepair.

Residential Building Permits Issued in Montague/Greenfield

Structure Type	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Units in Single-Family Structures	4	7	6	3	11	3	14	9	8	17
Units in All Multi-Family Structures	10	10	4	10	68	8	7	0	2	4
Units in 2-unit Multi-Family Structures	10	10	4	6	10	2	0	0	2	4
Units in 3- and 4-unit Multi-Family Structures	0	0	0	4	0	0	7	0	0	0
Units in 5+ Unit Multi-Family Structures	0	0	0	0	58	6	0	0	0	0
Total Units	14	17	10	13	79	11	21	9	10	21

Source: HUD

MULTIFAMILY RESIDENTIAL STRUCTURES

- ◆ The Montague/Greenfield area includes 75 multifamily rental properties with a total of 1,737 units as tracked by the CoStar commercial real estate service. More than half of these properties offer 8 units or less but the six largest developments, those with 100 or more units, account for nearly half of all rental dwellings.
- ◆ As with the overall housing stock, there are very few properties developed in the past two decades. In fact, the median year of construction is 1900 and several properties date back two centuries or more.
- ◆ This market, made up in large part by very old building stock, is due for an infusion of new and updated properties.

Rental Multifamily Buildings and Units by Size

Units in Building	Number of Buildings			Number of Units		
	Greenfield	Montague	Total	Greenfield	Montague	Total
5 or less	10	9	19	48	45	93
6-8	12	12	24	81	77	158
9-12	7	5	12	78	53	131
13-19	2	2	4	35	35	70
20-99	5	5	10	206	259	465
100-200	6	0	6	820	0	820
Total	42	33	75	1,268	469	1,737
Percentage						
5 or less	23.8%	27.3%	25.3%	3.8%	9.6%	5.4%
6-8	28.6%	36.4%	32.0%	6.4%	16.4%	9.1%
9-12	16.7%	15.2%	16.0%	6.2%	11.3%	7.5%
13-19	4.8%	6.1%	5.3%	2.8%	7.5%	4.0%
20-99	11.9%	15.2%	13.3%	16.2%	55.2%	26.8%
100-200	14.3%	0.0%	8.0%	64.7%	0.0%	47.2%
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Source: CoStar

RENTAL RATES

- ◆ Nearly one in four renting households in the Montague/Greenfield area pay less than \$550 per month (23.5%) and more than one-third pay less than \$800 per month (38.3%). On the higher end, well over one third of renting households pay \$1,000 per month or more (39.8%) which is in sharp contrast to the state overall where nearly two thirds of households (63.6%) are paying over \$1,000 per month.
- ◆ Both median and average rental rates in the study area register notably lower than rates seen for Franklin County as a whole with renters within the two towns paying \$50 to \$100 lower monthly rates than is seen throughout the entire county. That difference jumps significantly comparing rental rates in the Montague/Greenfield area to statewide figures where the cost per month stands around \$350 to \$450 above what is seen for the two towns.
- ◆ It might initially seem as though Montague/Greenfield residents in a favorable position with rents a full 35% to 40% below the statewide average. Any sense of financial benefit is offset, however, by much lower incomes which similarly fall 30%-35% below the statewide pace.

Gross Monthly Rent Payments - 2019

Monthly Payment	Town of Montague	City of Greenfield	Montague/Greenfield	Franklin County	Massachusetts
<\$550	386	814	1,200	2,009	178,361
\$550-\$799	180	577	757	1,260	81,831
\$800-\$999	490	624	1,114	2,044	97,795
\$1,000-\$1,499	387	1,362	1,749	3,194	260,112
\$1,500+	140	143	283	1,083	366,633
Total Rental Units	1,583	3,520	5,103	9,590	984,732
Percent					
<\$550	24.4%	23.1%	23.5%	20.9%	18.1%
\$550-\$799	11.4%	16.4%	14.8%	13.1%	8.3%
\$800-\$999	31.0%	17.7%	21.8%	21.3%	9.9%
\$1,000-\$1,499	24.4%	38.7%	34.3%	33.3%	26.4%
\$1,500+	8.8%	4.1%	5.5%	11.3%	37.2%
Total Rental Units	100.0%	100.0%	100.0%	100.0%	100.0%
Gross Rents					
Median	\$918	\$926	\$922	\$976	\$1,282
Average	\$903	\$899	\$900	\$995	\$1,377

Source: Esri

RENTAL HOUSING AFFORDABILITY

- ◆ More than half of the households in the Montague/Greenfield area who rent their homes are able to make their payments with less than 30% of household income (53.5%).
- ◆ Rental affordability becomes a concern when the proportion of a household's financial resources going towards paying for their dwelling becomes so high that they have difficulties affording other necessities such as food, clothing, transportation and medical care. Generally, when this share of income reaches 30% or higher the household is considered "Rent Burdened". For the Montague/Greenfield area, this describes nearly half of all renting households (46.5%).
- ◆ What's more, for more than one out of five renting households, (21.4%), fully half of their income goes towards paying rent.
- ◆ Unfortunately, these high percentages are not unique to Montague/Greenfield or Franklin County. Similar proportions of Rent Burdened households are found throughout the state and the nation.

Rental Affordability by Number of Households - 2019

Payments as a Share of Household Income	Town of Montague	City of Greenfield	Montague/Greenfield	Franklin County	Massachusetts
<30% - Non-Burdened	876	1,856	2,732	4,976	525,022
30-49.9% - Rent Burdened	336	941	1,277	2,290	231,265
50%+ - Severely Rent Burdened	371	723	1,094	2,324	228,445
Total	1,583	3,520	5,103	9,590	984,732
Percent					
<30% - Non-Burdened	55.3%	52.7%	53.5%	51.9%	53.3%
30-49.9% - Rent Burdened	21.2%	26.7%	25.0%	23.9%	23.5%
50%+ - Severely Rent Burdened	23.4%	20.5%	21.4%	24.2%	23.2%
Total	100.0%	100.0%	100.0%	100.0%	100.0%

Source: Esri

RESIDENTIAL SALES PRICES

- ◆ Home prices in Franklin County register significantly below those in adjacent counties – most especially when compared to other Massachusetts counties. The differential amounts to a 6.6% increase for homes in Windham County, VT, and a much more sizable 19.2% and 34.7% premium for those buying in Hampshire or Worcester Counties (respectively).
- ◆ Prices in Montague registered notably higher than the countywide median but even then, at \$335,000, it measured even with Hampshire County.
- ◆ Conversely, sales prices for Greenfield, Turners Falls and Millers Falls came in considerably below the Franklin County median level.

Home Sale Prices - 2021

Location	Median Sales Price	Percent above/below Turners Falls
Worcester County, MA	\$378,600	50.7%
Windham County, VT	\$299,500	19.2%
Hampshire County, MA	\$335,000	33.3%
Florence	\$417,500	66.2%
Northampton	\$368,500	46.7%
Easthampton	\$345,250	37.4%
Franklin County, MA	\$281,000	11.8%
Montague	\$335,000	33.3%
Greenfield	\$255,000	1.5%
Turners Falls	\$251,250	0.0%
Millers Falls	\$220,000	-12.4%

Source: Redfin/Camoin Associates

CONDOMINIUMS IN THE MONTAGUE/GREENFIELD AREA

- ◆ The CoStar real estate service counts a total of 165 condo units in the Montague/Greenfield area. Most all of these are located in Greenfield (80.6%) with the balance found in Turners Falls (19.4%)
- ◆ While the largest of these properties includes 16 units, well over half of the 23 properties include only 5 or 6 units.
- ◆ The “newest” of these buildings, repurposed as condominiums, dates back to the 1920s while one was originally constructed in 1835.

Condominium Inventory for the Montague/Greenfield Area

Number Of Units	Average SF/Unit	Median Year Built
165	1,062	1900

Source: CoStar

- ◆ The median selling price for a condo in the Montague/Greenfield area in 2021 was just under \$300,000 – notably several thousand more in the North/South/Easthampton area. Prices in this latter geography were brought down in large part due to the much lower selling prices found in Northampton specifically.
- ◆ These transactions in the Montague/Greenfield area show that this area can maintain prices on par or even above those in other nearby population centers. There is both sufficient wealth and demand to support this area. In fact, one unit in Greenfield sold for \$350,000 in early 2021.

Condominium Sales - 2021

Location	Median Sales Price	Homes Sold
Montague/Greenfield	\$298,000	8
North/South/Easthampton	\$276,500	93

Source: Redfin/Camoin Associates

RESIDENTIAL DEMAND POTENTIAL

- ◆ The Montague/Greenfield area is slated to see a decline of 117 households from 2021 to 2026. Despite this 1% decrease, however, **there remains a need for new residential construction within the community.**
- ◆ Given the vintage of the overall housing stock in the Montague/Greenfield area, simply replacing 1% of those units built more than 50 years ago would warrant development of approximately 90 new residential units each year. **Over the coming five years this brings the need for replacement units to 400 units.** Recent history, however, has fallen well short of that pace as **only 72 new units were constructed over the past five years.**
- ◆ A substantial and growing number of senior citizens in the area may also call for development of retirement facilities. With nearly 1,200 65+ households in Montague, **new senior housing which captured just 5% of these would support 60 units.** Widening this to include Greenfield the number of senior households grows to over 3,700 and similarly capturing just one in twenty of these would account for over 185 units.
 - From a different perspective, while total households in the area decline, a **growing elderly population will drive the number of senior households up by about 375 by 2026** in the Montague/Greenfield area. And 300 of those will be in the 75+ age cohort. Capturing 10% of these with newly developed units would providing housing for 35 or so senior households.
- ◆ With more than Montague 700 families rent burdened households and another 1,600 in Greenfield, housing affordability is clearly a challenge in the area. **A household making 60% of the area median income** (\$52,000) would bring in around \$31,000 per year (a little over one third of all households are at or below \$35,000/year). To hold the cost of housing to 30% of this household's income **would require monthly payments of \$780 or less.** This compares to the current median rent of \$922 per month.
 - More than 4,000 households see incomes below \$35,000. Providing affordable housing to just 5% of these would mean development of 200 units.
- ◆ There is also a **demonstrated demand for condominiums in the Montague/Greenfield area where the median sales price reached nearly \$300,000** in 2021. With only 8 sales, the two towns accounted for a mere 4.5% of the total in the combined Franklin and Hampshire Counties. Offering newly developed for-sale units could certainly raise this share though it is not clear how typical 2020 was and the overall potential uncertain.

RESIDENTIAL DEMAND POTENTIAL (CONTINUED)

◆ The table below lists some sources of residential demand in the Montague/Greenfield area along with the amount of development required to address a portion of these needs.

Demand for Residential Development in Montague/Greenfield

Demographic Concern	Addressing These Concerns	Implied Development
Aging housing stock - Median Age more than 70 Years.	Replace 1% of units over 70 years old over five year period	455
Aging Population - 375 more elderly (65+) Households by 2026	New Senior housing capturing 5% of these households over five year period	75
More than 4,000 households make \$35,000/yr or less	Provide affordable housing to 5% of these households	200

RETAIL/COMMERCIAL MARKET

MARKET DEMAND: LEAKAGE ANALYSIS

RETAIL SALES GAP

In a retail gap analysis, the existing retail sales (“supply”) of trade area businesses are compared to the estimated retail spending of trade area residents (“demand”). The difference between demand and supply is referred to as the “retail gap” which can be positive or negative.

When the demand (spending by trade area residents) for goods or services is greater than sales at local trade area businesses, sales are said to “leak out” of the trade area, creating a positive retail gap (i.e., sales leakage).

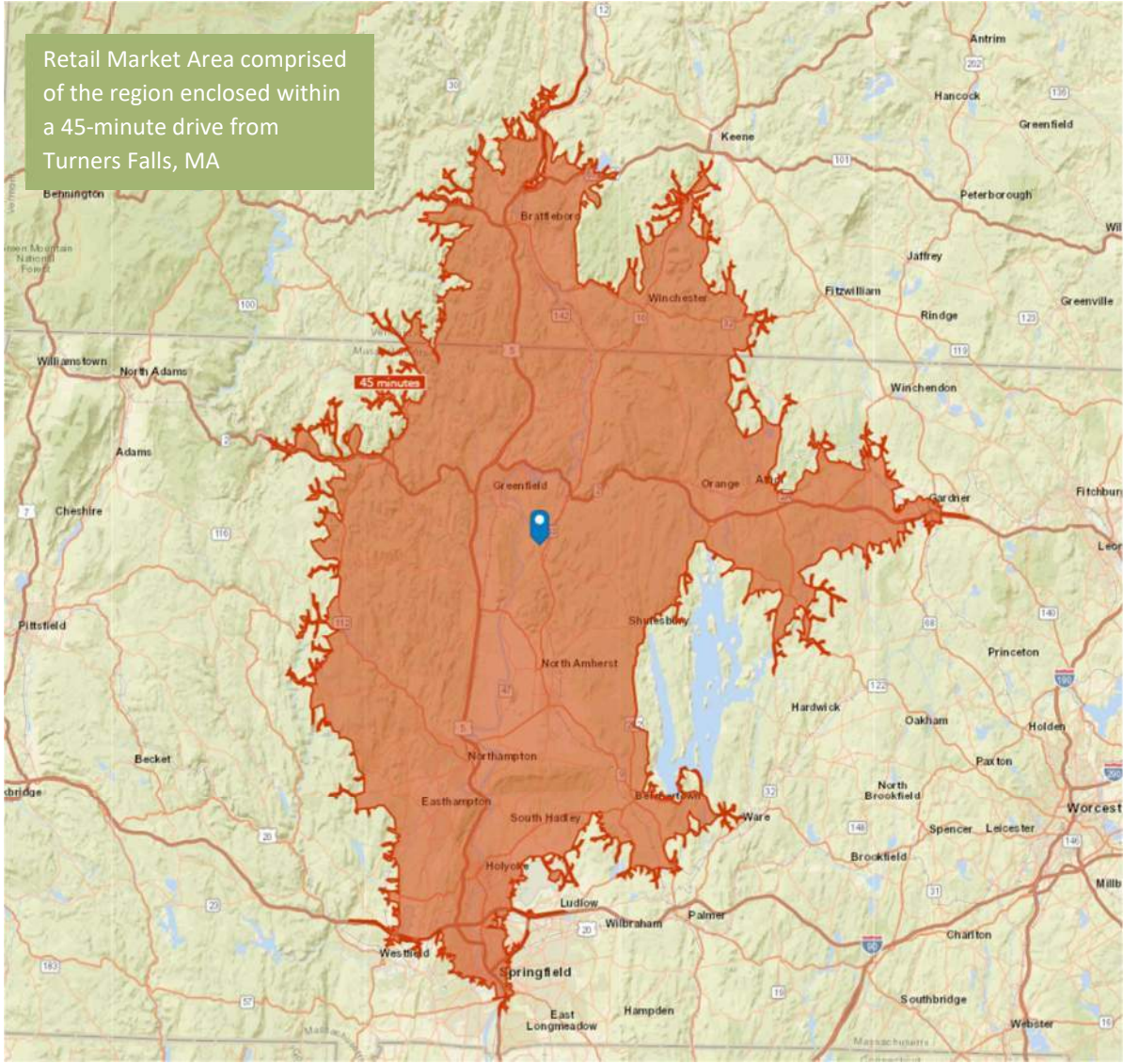
Conversely, if the supply of goods sold (local trade area sales) exceeds trade area demand (spending by trade area residents), it is assumed that non-residents are coming into the trade area and spending money, creating a negative retail gap (i.e. sales surplus).

Sales leakage and sales surplus carry different implications. In many cases, sales leakage presents an opportunity to capture unmet demand in a trade area since a percentage of residential spending occurs outside the trade area. This demand can be met within the trade area by opening new businesses or expanding existing businesses within retail sectors that show sales leakage. However, not all retail categories that exhibit sales leakage within a particular trade area are a good fit for the region. Rapidly changing retail norms mean long term consequences for potential build out of retail space. It is important to consider that while there may be leakage indicated for a certain industry, that leakage could be due to ecommerce and therefore is not a retail category that would be as productive as a brick-and-mortar space. What were once retail locations may have more economic potential as flex space, office or redevelopment in housing. This data should be used as a starting point to determine what categories exhibit leakage and whether they are viable for brick-and-mortar locations.

A sales surplus might exist for several reasons. For example, the region might be a popular shopping destination for tourists and other out-of-towners, or a cluster of competing businesses offering a similar product or service may be located within the trade area, creating a specialty cluster that draws in spending by households from outside the trade area. Alternatively, a sales surplus could be an indicator of market saturation.

MARKET DEMAND: RETAIL SALES GAP (CONTINUED)

- ◆ For this analysis a Retail Market Area was defined as the area centered at Turners Falls and radiating out within a 45 minute drive from that site.
- ◆ The following Retail Gap Analysis table contains a list of industries by 4-digit NAICS codes and includes figures for sales demand (estimated purchases by Montague/Greenfield residents both in and out of Montague/Greenfield), sales supply (existing sales within Montague/Greenfield), and retail gap (demand minus supply).



MARKET DEMAND: RETAIL SALES GAP

- ◆ The greatest Retail Sales Gap is found in the Restaurant segment (7225) where only four out of every five dollars spent by residents remains within the market area and \$151.7 million go elsewhere.
- ◆ The analysis shows substantial unmet demand for Car Dealers (4541) and Bakeries (3118). For these items a significant amount of spending is spread beyond the local market area.
- ◆ A sales surplus is seen for several segments, most prominently, Grocery stores (4451), Miscellaneous Retailers (4539) and Auto Parts Stores (4413). For these, out-of-area consumers are boosting demand beyond the needs of local residents.

Market Area Retail Sales Gap - 2021

Sector	Total Demand	Local Sales	Retail Sales Gap (Demand - Sales)
Restaurants and Other Eating Places (7225)	\$721,752,573	\$570,067,685	\$151,684,888
Automobile Dealers (4411)	\$256,388,165	\$190,196,760	\$66,191,404
Bakeries and Tortilla Manufacturing (3118)	\$61,231,133	\$16,240,164	\$44,990,969
Electronics and Appliance Stores (4431)	\$69,788,523	\$24,860,410	\$44,928,113
General Merch Stores, incl Warehouse/Superctr (4523)	\$203,838,780	\$162,647,956	\$41,190,824
Motion Picture and Video Industries (5121)	\$68,741,394	\$29,288,478	\$39,452,917
Other Amusement and Recreation Industries (7139)	\$80,777,064	\$56,870,662	\$23,906,403
Clothing Stores (4481)	\$96,913,171	\$80,761,033	\$16,152,137
Other Motor Vehicle Dealers (4412)	\$26,039,996	\$10,492,709	\$15,547,287
Beverage Manufacturing (3121)	\$129,700,298	\$115,600,916	\$14,099,382
Drycleaning and Laundry Services (8123)	\$17,109,301	\$4,857,309	\$12,251,992
Personal Care Services (8121)	\$90,752,096	\$78,632,685	\$12,119,410
Home Furnishings Stores (4422)	\$25,582,213	\$14,024,645	\$11,557,567
Furniture Stores (4421)	\$31,711,391	\$21,384,182	\$10,327,208
Health and Personal Care Stores (4461)	\$129,267,360	\$119,756,617	\$9,510,742
Gasoline Stations (4471)	\$138,426,972	\$129,033,956	\$9,393,016
Vending Machine Operators (4542)	\$7,327,114	\$618,172	\$6,708,941
Jewelry, Luggage, and Leather Goods Stores (4483)	\$27,026,859	\$20,428,590	\$6,598,269
Shoe Stores (4482)	\$19,568,324	\$14,760,896	\$4,807,427
Office Supplies, Stationery, and Gift Stores (4532)	\$21,218,159	\$16,416,727	\$4,801,432
Florists (4531)	\$6,243,055	\$3,407,836	\$2,835,219
Drinking Places (Alcoholic Beverages) (7224)	\$10,778,968	\$8,525,282	\$2,253,687
Other Personal Services (8129)	\$53,159,884	\$55,828,491	-\$2,668,607
Used Merchandise Stores (4533)	\$17,486,266	\$22,005,118	-\$4,518,851
Book Stores and News Dealers (4512)	\$4,312,887	\$11,908,900	-\$7,596,013
Beer, Wine, and Liquor Stores (4453)	\$15,428,226	\$24,894,051	-\$9,465,825
Specialty Food Stores (4452)	\$21,926,480	\$34,065,299	-\$12,138,818
Sporting Goods, Hobby, and Music Stores (4511)	\$39,216,141	\$52,401,269	-\$13,185,129
Lawn and Garden Equipment and Supplies Stores (4442)	\$18,765,016	\$32,522,393	-\$13,757,377
Building Material and Supplies Dealers (4441)	\$144,114,946	\$158,923,886	-\$14,808,939
Department Stores (4522)	\$76,542,242	\$93,195,544	-\$16,653,303
Special Food Services (7223)	\$38,613,372	\$57,908,082	-\$19,294,710
Automotive Parts, Accessories, and Tire Stores (4413)	\$61,643,020	\$96,784,349	-\$35,141,330
Other Miscellaneous Store Retailers (4539)	\$62,427,859	\$106,702,434	-\$44,274,575
Grocery Stores (4451)	\$251,286,014	\$303,652,200	-\$52,366,186

Source: Emsi

MARKET DEMAND: RETAIL POTENTIAL

- ◆ Comparing the Retail Sales Gap to the typical sales per establishment for a given segment identifies a community's potential to support new businesses and/or expansion of existing stores.
- ◆ Retail Sales Gap Analysis was also performed at the 6 Digit NAICS level and the table below identifies the number of new businesses that, theoretically, could be supported in Montague, assuming:
 1. 25% of the sales leakage is recaptured and
 2. Businesses have sales comparable to the average sales for that retail category in Franklin County.
- ◆ Unmet demand appears strongest for Restaurants – both Limited-Service (722513) and Full-Service (722511) but a wide range of other retailers and service providers also register as potential opportunities within the region.

Market Area Sales Gap and Opportunities - 6 Digit NAICS

Sector	Retail Sales Gap	25% Leakage Recapture	Average Sales per Business*	Potential Additional Businesses
Limited-Service Restaurants (722513)	\$125,214,321	\$31,303,580	\$1,316,904	23.8
Full-Service Restaurants (722511)	\$47,214,792	\$11,803,698	\$1,440,217	8.2
Nail Salons (812113)	\$8,834,338	\$2,208,584	\$437,814	5.0
Drycleaning and Laundry Services (except Coin-Operated) (812320)	\$4,130,963	\$1,032,741	\$257,546	4.0
Beauty Salons (812112)	\$7,780,282	\$1,945,070	\$542,128	3.6
Fitness and Recreational Sports Centers (713940)	\$10,467,965	\$2,616,991	\$734,988	3.6
Floor Covering Stores (442210)	\$11,142,490	\$2,785,623	\$987,159	2.8
Other Building Material Dealers (444190)	\$18,238,277	\$4,559,569	\$2,333,141	2.0
Drinking Places (Alcoholic Beverages) (722410)	\$2,253,687	\$563,422	\$330,780	1.7
Furniture Stores (442110)	\$10,327,208	\$2,581,802	\$1,528,546	1.7
Wineries (312130)	\$18,814,008	\$4,703,502	\$2,885,497	1.6
Food (Health) Supplement Stores (446191)	\$3,027,969	\$756,992	\$510,601	1.5
Women's Clothing Stores (448120)	\$4,759,593	\$1,189,898	\$844,041	1.4
New Car Dealers (441110)	\$60,744,827	\$15,186,207	\$11,802,042	1.3
Jewelry Stores (448310)	\$5,427,954	\$1,356,988	\$1,103,698	1.2
Cosmetics, Beauty Supplies, and Perfume Stores (446120)	\$4,392,415	\$1,098,104	\$922,329	1.2
Sporting Goods Stores (451110)	\$5,725,263	\$1,431,316	\$1,215,781	1.2
Used Car Dealers (441120)	\$5,446,577	\$1,361,644	\$1,164,733	1.2
Family Clothing Stores (448140)	\$7,446,906	\$1,861,727	\$1,828,215	1.0
Florists (453110)	\$2,835,219	\$708,805	\$696,681	1.0
Vending Machine Operators (454210)	\$6,708,941	\$1,677,235	\$1,778,581	0.9
Men's Clothing Stores (448110)	\$3,334,692	\$833,673	\$905,358	0.9

*Note: Average Sales for Massachusetts

Source: Emsi

MARKET DEMAND: MONTAGUE SPECIFIC RETAIL POTENTIAL

- ◆ A similar Retail Sales Gap Analysis was performed at the 6 Digit NAICS level to identify opportunities within Montague which would specifically serve local residents. This is based on data for the sum of the three ZIP codes, 01349 (Millers Falls), 01351 (Montague) and 01376 (Turners Falls).
- ◆ For most segments Montague does not offer enough unmet demand to support starting up any new retail ventures. The stand-out exception is for the Limited-Service Restaurant sector where the analysis suggests sufficient demand to support possibly two of these shops such as a delicatessen, pizza delivery or fast casual restaurants. Capturing one quarter of currently leaked restaurant spending would generate around \$2.5 million, well above the State average sales of \$1.3 million. Alternatively, this may suggest that a currently successful restaurant in town has room to expand.
- ◆ Similarly, the analysis suggests opportunities for expansion of existing Full-Service Restaurants, a Pharmacy, a nail salon, or other niche retailers.

Montague Retail Sales Gap and Opportunities - 6 Digit NAICS

Sector	Retail Sales Gap	25% Leakage Recapture	Average Sales per Business*	Potential Additional Businesses
Limited-Service Restaurants (722513)	\$10,185,180	\$2,546,295	\$1,316,904	1.9
Full-Service Restaurants (722511)	\$3,129,369	\$782,342	\$1,440,217	0.5
Pharmacies and Drug Stores (446110)	\$1,731,086	\$432,772	\$1,503,728	0.3
Fitness and Recreational Sports Centers (713940)	\$725,554	\$181,388	\$734,988	0.2
Nail Salons (812113)	\$430,977	\$107,744	\$437,814	0.2
All Other General Merchandise Stores (452319)	\$1,008,634	\$252,158	\$1,058,231	0.2
Automotive Parts and Accessories Stores (441310)	\$956,149	\$239,037	\$1,178,556	0.2
Used Car Dealers (441120)	\$898,001	\$224,500	\$1,164,733	0.2
Women's Clothing Stores (448120)	\$598,114	\$149,529	\$844,041	0.2

*Note: Average Sales for Massachusetts

Source: Emsi

ADDITIONAL MONTAGUE ASSETS

- ◆ Entertainment, recreational, and retail opportunities found in Montague are enjoyed by both local residents, guests from neighboring communities and by visiting tourists.
- ◆ The two performing arts theaters provide venues for both local and touring performances.
- ◆ Outdoor enthusiasts are attracted by available hiking, biking and cross-country skiing trails.
- ◆ Visitors are attracted to the multiple festivals and functions hosted at the Montague Retreat Center.
- ◆ Additional offerings including the areas natural beauty are the Great Falls Discovery Center and several specialty retailers catering to local and out of town visitors.

Montague Assets

Arts, Music and Culture		Notes
Ja'Duke Theater		Largest stage in Franklin County with 540 seats
Shea Theater Arts Center		Non-profit theater with 330 seats
Outdoor Recreation		
Montague Plains Wildlife Mgt Area		1,500 acres - Maintained by Fish and Wildlife and popular with mountain bikers
Canalside Rail Trail		3.8 miles from Turners Falls to East Deerfield
Cabot Woods		Owned by Firslight
Unity Park		Repeatedly voted Franklin County's favorite park and home to the Unity Skatepark
Occasions		
Montague Retreat Center		Unique location available for weddings, functions, workshops, cultural events, and retreats
Mutton & Mead Medieval Festival		Turners Falls
Pocumtuck Homelands Festival		Turners Falls - celebration of Native American art, music, and history
The Great Falls Festival aka Pumpkinfest		Turners Falls
Attractions		
Great Falls Discovery Center		Natural, cultural, and industrial history exhibits housed in a former paper mill
French King Bridge		View from Millers Falls of the three-span cantilever arch design
Turners Falls		Visitor destination
Bitzer Fish Hatchery		State trout hatchery that's open to the public.
Unique Retail		
Montague Bookmill		1834 grist mill with 40,000 books and one waterfall
Sawmill River Art Gallery		Curated art and handmade goods and located in the Bookmill area.
Additional Unique shopping experiences		Including Loot, Nova Motorcycles, Swanson's Fabrics, FAB Fashion and Buckingham Rabbits Vintage

CANAL DISTRICT OPPORTUNITIES AND CONSTRAINTS

- ◆ Beyond retail opportunities identified in the Retail Sales Gap analysis, other commercial suitable to renovated mill sites and abutting property may include:
 - Coffee house featuring live music
 - Farmer's Market
 - Used bookstore
 - Art gallery
 - Bed and breakfast/extended stay lodging
 - Studio/Artisan space
 - Maker space
 - Recreational ventures tied to river access and the bike trail
 - A Cidery as has been previously proposed
- ◆ Several types of commercial activity are less suitable to the Canal District for a variety of reasons:
 - With three breweries already located in Montague, Brick and Feather Brewery, Element Brewing Company, and Pioneer Valley Brewery, developing an additional micro-brewery would face challenges supporting a pub business. A brewery or distillery intent on producing beer or spirits for sale and distribution but not on-site consumption, however, may prove more feasible.
 - While the waterfront may seem a perfect location for canoe and kayak rentals, dam releases are cited as causing hazardous conditions due to roiling waters.
- ◆ One of the more significant concerns constraining options for redevelopment of the mill buildings on the most northern portion of the island is the narrow roadway running along the canal. In its current configuration it allows for only one way traffic.
- ◆ The mill building area also currently lacks adequate parking needed for uses which would draw a large number of visitors or workers.

INDUSTRIAL MARKET

CURRENT INDUSTRIAL ACTIVITY

- ◆ The Montague/Greenfield area is home to a broad array of manufacturers. These provide nearly one in ten jobs for the two communities – well over a thousand in total.
- ◆ Exceptionally strong employment in Plastics Product Manufacturing is generated by the specialty film producer, Charter NEX Films.
- ◆ Other notable firms include BETE Fog Nozzle (spray nozzle engineering and manufacturing), Lifelight Foods (produces foods for plant-based diets) and Yankee Environmental Systems (environmental measurement device manufacturer), Judd Wire (high-tech electrical wire manufacturer), Great Falls Aquaculture (one of the largest and longest running commercial recirculating aquaculture systems (RAS) in the US), Atlantic Golf and Turf (supplier of chemicals, fertilizers, soil tests and agronomic consulting services).
- ◆ Multiple breweries provide a boost to the beverage manufacturing sector.

Prominent Commercial/Industrial Sectors in Montague/Greenfield - 2021

Sector	Jobs	Location Quotient
Plastics Product Manufacturing (3261)	490	10.8
Other Miscellaneous Manufacturing (3399)	192	7.9
Other Food Manufacturing (3119)	110	6.1
Grain and Oilseed Milling (3112)	24	4.8
Metalworking Machinery Manufacturing (3335)	57	4.5
HVAC and Commercial Refrigeration Equip Mfg (3334)	41	3.9
Basic Chemical Manufacturing (3251)	32	2.8
Sugar and Confectionery Product Manufacturing (3113)	15	2.6
Highway, Street, and Bridge Construction (2373)	61	2.2
Beverage Manufacturing (3121)	41	1.9

Source: Emsi

LIGHT INDUSTRIAL OPPORTUNITIES IN MONTAGUE

- ◆ Though only 5 minutes from I-91, immediate access to *multiple* interstate highways or proximity to larger consumer or industrial areas would be needed to help Montague fit the profile of a regional distribution center. This makes any significant expansion of warehousing/distribution center activity unlikely beyond the current level serving local industry.
- ◆ A notable draw to the area is the local bucolic setting. For light industrial businesses, Montague appeals to companies producing at a moderate level who are interested in living and working in an area surrounded by natural beauty and historic architecture.
- ◆ Renovation of the existing mill buildings along the canal may successfully offer light industrial capacity for:
 - Shared kitchen space for food preparation
 - Crafts-person/Artisan workspace
 - Small scale manufacturing including industrial products, consumer goods or food processing.
 - Makerspace geared towards entrepreneurs.
 - Indoor growing space.
- ◆ The mill buildings might also meet the needs of one or more existing industrial firms already located in the area requiring additional space as their business expands.
- ◆ Firstlight Power maintains the dam along the canal and utility-scale electric storage would dovetail well with this facility. The Montague Planning Board approved amending local zoning bylaws to allow these facilities in early 2022 and this change is currently under review by the State Attorney General.

Montague Specific Manufacturers

Company	Notes
Charter NEX Films	Specialty films Manufacturer
Hart & Cooley	HVAC Component Manufacturer
Hassay Savage Co.	Precision machine tool attachments supplier
Judd Wire, Inc.	High technology wire manufacturer
Lightlife Foods, Inc.	Produces food for plant-based diets
Mayhew Steel Products	Oldest punch and chisel manufacturer in the U.S.
Yankee Environmental Systems, Inc.	Environmental measurement products manufacturer

ATTACHMENT A: DATA SOURCES

ECONOMIC MODELING SPECIALISTS INTERNATIONAL (EMSI)

To analyze the industrial makeup of a study area, industry data organized by the North American Industrial Classification System (NAICS) is assessed. Camoin Associates subscribes to Economic Modeling Specialists Intl. (Emsi), a proprietary data provider that aggregates economic data from approximately 90 sources. Emsi industry data, in our experience, is more complete than most or perhaps all of the alternative local data sources (for more information on Emsi, please see www.economicmodeling.com). Many local data sources do not include significant portions of the workforce as information regarding sole proprietorships and contractual employment (i.e., 1099 contractor positions) is not included in their measures. In addition, certain employment counts are suppressed in BLS/BEA figures for confidentiality reasons when too few establishments exist within a single NAICS code. Emsi is able to create more exhaustive measures of employment level and number of businesses based on the use of multiple sources and statistical modeling techniques.

ESRI BUSINESS ANALYST ONLINE (BAO)

Esri is the leading provider of location-driven market insights. It combines demographic, lifestyle, and spending data with map-based analytics to provide market intelligence for strategic decision-making. Esri uses proprietary statistical models and data from the U.S. Census Bureau, the U.S. Postal Service, and various other sources to present current conditions and project future trends. Esri data are used by developers to maximize their portfolio, retailers to understand growth opportunities, and by economic developers to attract business that fit their community. For additional information, please see www.esri.com.

ATTACHMENT B: RESIDENT SURVEY RESULTS

Default Report

Explore the data behind your survey responses. Gain a better perspective of your survey data and uncover insights for further planning.

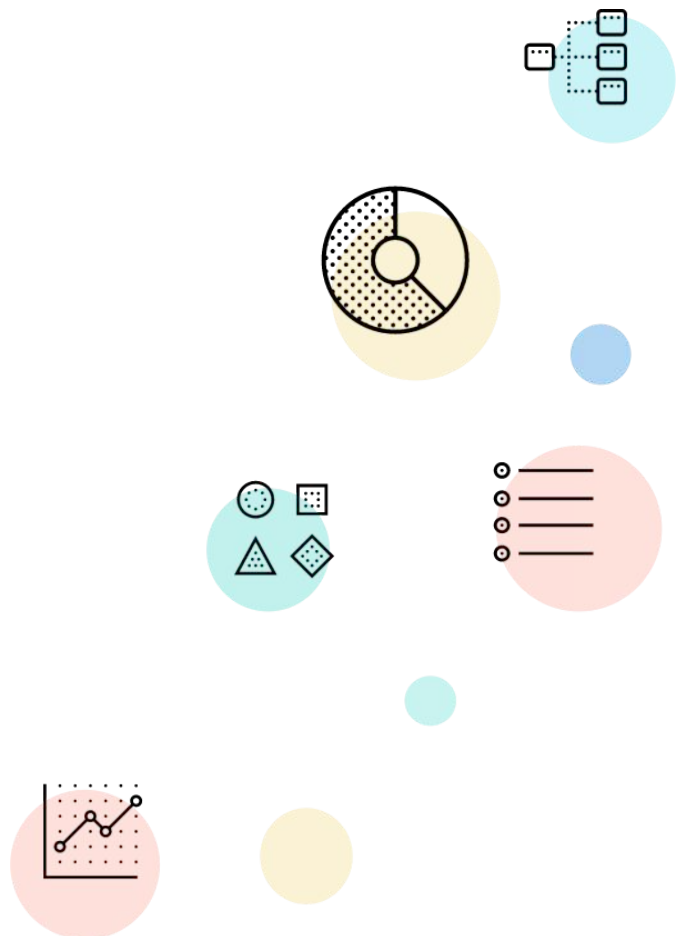
 Visited
96

 Started
17

 Avg. Time to Complete
14m

 Completed
17

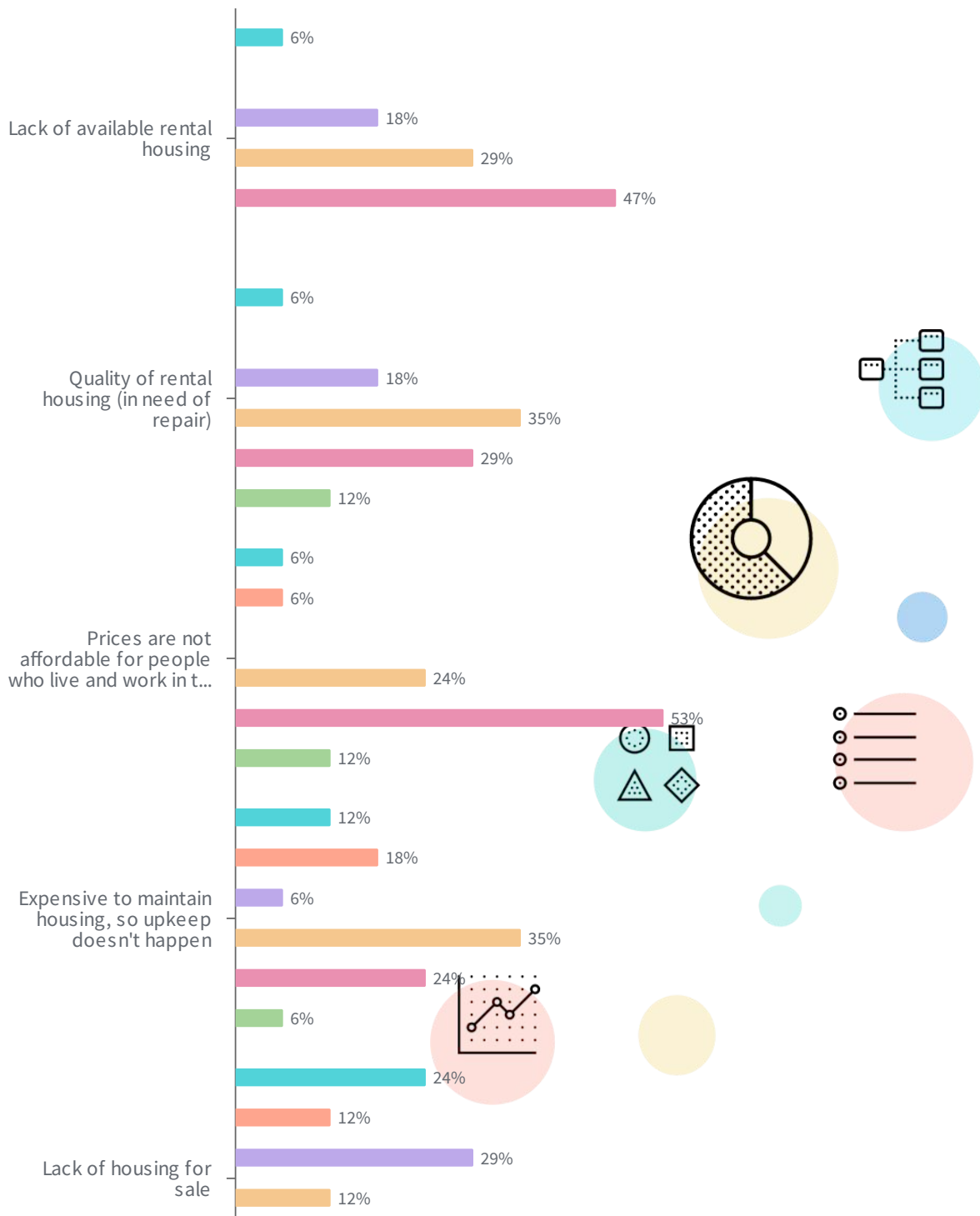
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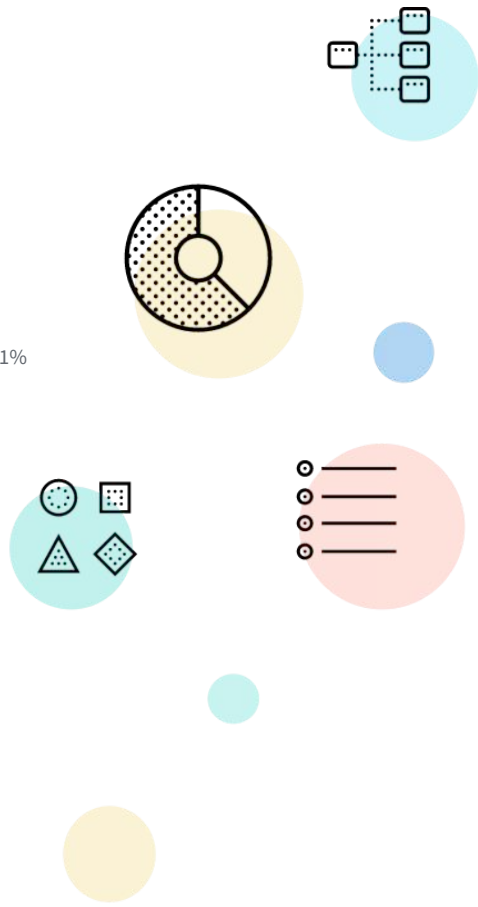
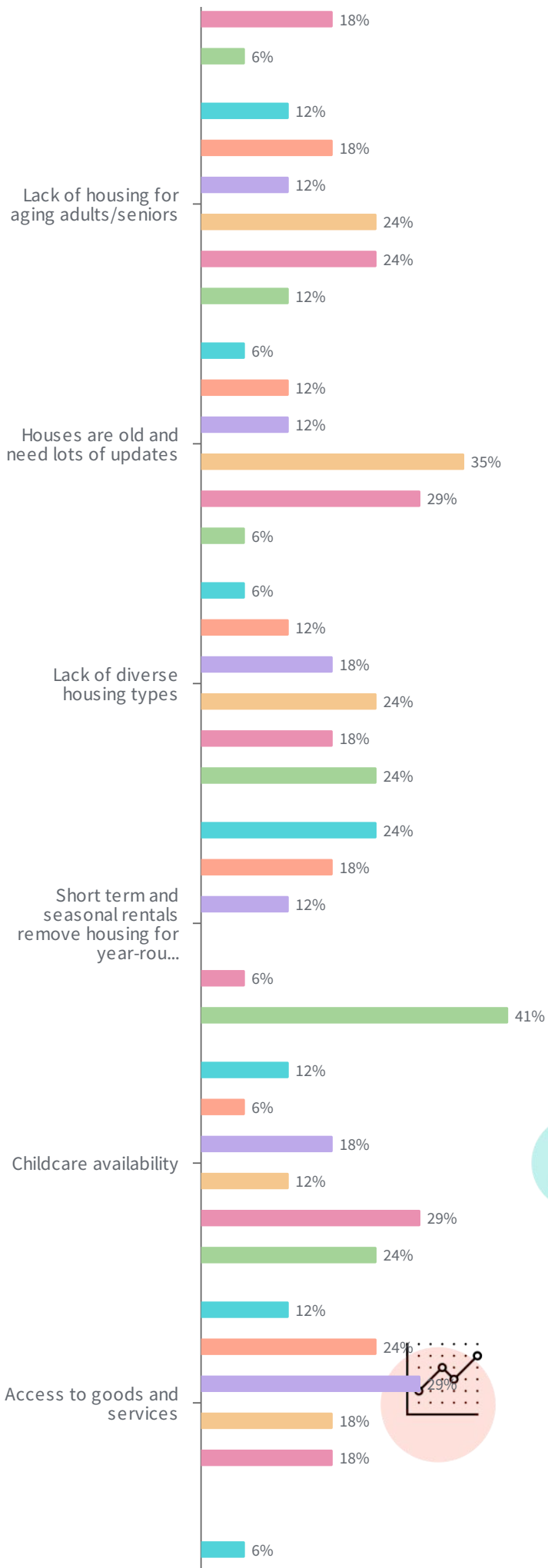


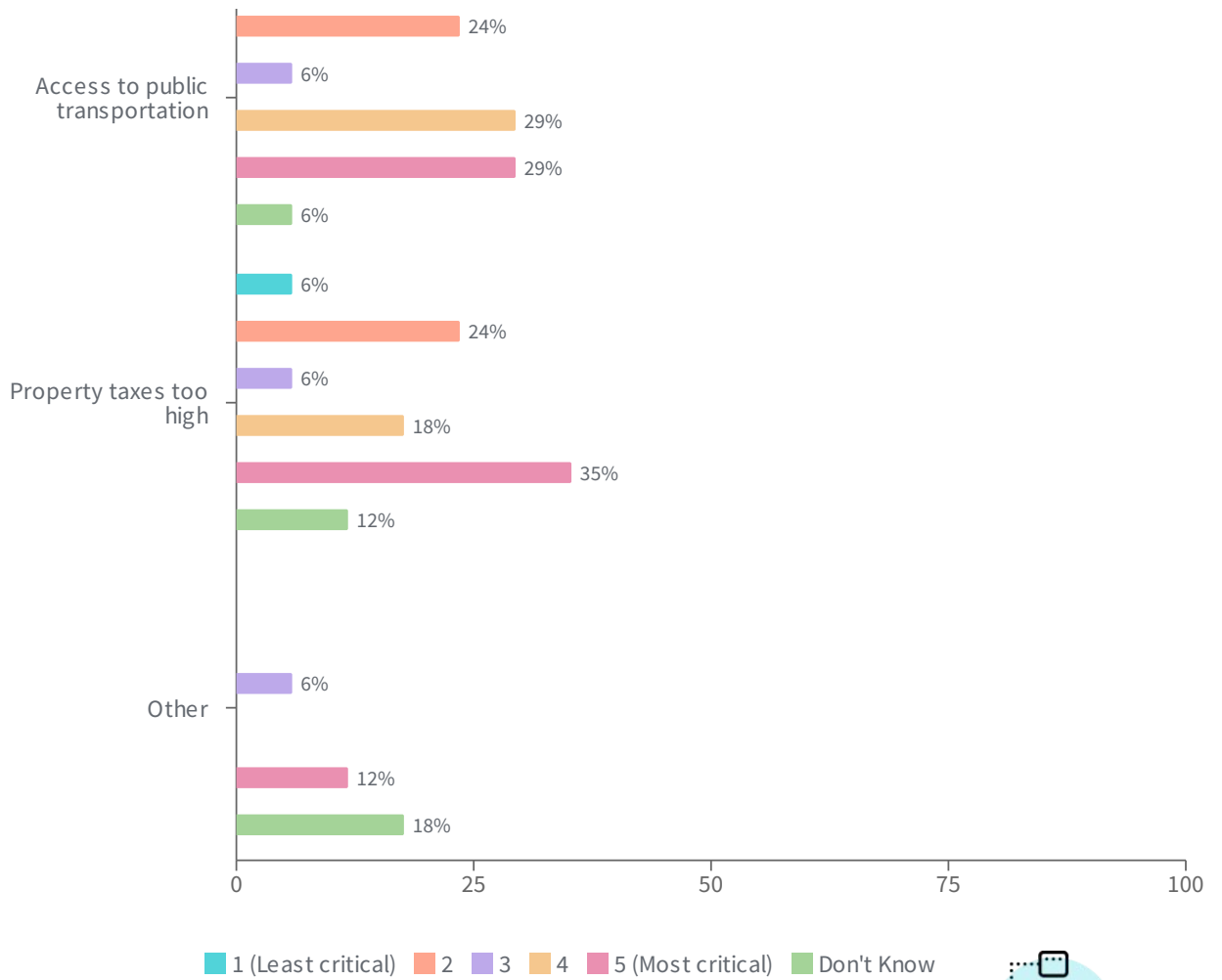
QUESTION 02 | MATRIX

On a scale of 1 to 5 (least critical to most critical) please rank how critical each issue is in Montague and the surrounding area. If you are unfamiliar with the issue, check the "Don't Know" box

Answered: 17 Skipped: 0



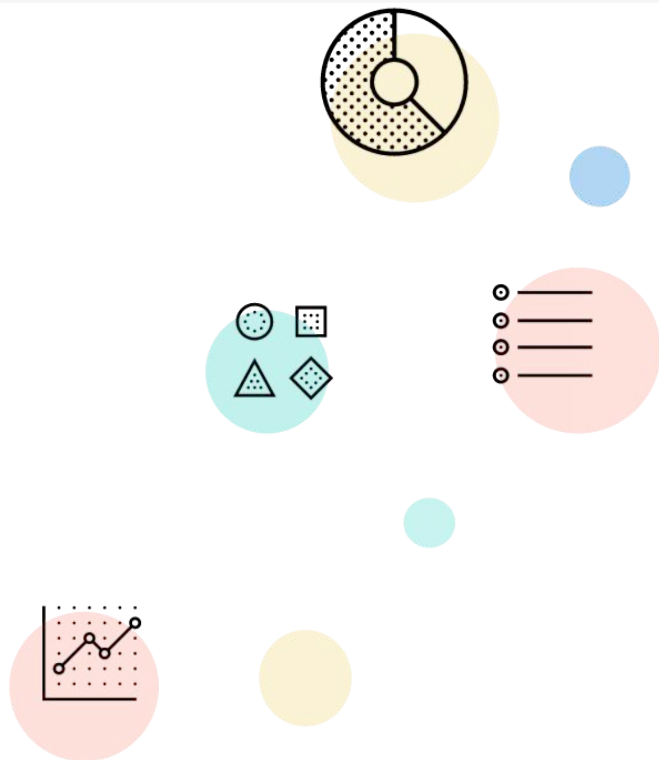




	1 (LEAST CRITICAL)	2	3
Lack of available rental housing	1 (5.88%)	0 (0.00%)	3 (17.65%)
Quality of rental housing (in need of repair)	1 (5.88%)	0 (0.00%)	3 (17.65%)
Prices are not affordable for people who live and work in the area (to rent or buy)	1 (5.88%)	1 (5.88%)	0 (0.00%)
Expensive to maintain housing, so upkeep doesn't happen	2 (11.76%)	3 (17.65%)	1 (5.88%)
Lack of housing for sale	4 (23.53%)	2 (11.76%)	5 (29.41%)
Lack of housing for aging adults/seniors	2 (11.76%)	3 (17.65%)	2 (11.76%)

	 1 (LEAST CRITICAL)	 2	 3
Houses are old and need lots of updates	1 (5.88%)	2 (11.76%)	2 (11.76%)
Lack of diverse housing types	1 (5.88%)	2 (11.76%)	3 (17.65%)
Short term and seasonal rentals remove housing for year-round residents	4 (23.53%)	3 (17.65%)	2 (11.76%)
Childcare availability	2 (11.76%)	1 (5.88%)	3 (17.65%)
Access to goods and services	2 (11.76%)	4 (23.53%)	5 (29.41%)
Access to public transportation	1 (5.88%)	4 (23.53%)	1 (5.88%)
Property taxes too high	1 (5.88%)	4 (23.53%)	1 (5.88%)
Other	0 (0.00%)	0 (0.00%)	1 (5.88%)
Total	23 (9.66%)	29 (12.18%)	32 (13.45%)
	 4	 5 (MOST CRITICAL)	 DON'T KNOW
Lack of available rental housing	5 (29.41%)	8 (47.06%)	0 (0.00%)
Quality of rental housing (in need of repair)	6 (35.29%)	5 (29.41%)	2 (11.76%)
Prices are not affordable for people who live and work in the area (to rent or buy)	4 (23.53%)	9 (52.94%)	2 (11.76%)
Expensive to maintain housing, so upkeep doesn't happen	6 (35.29%)	4 (23.53%)	1 (5.88%)
Lack of housing for sale	2 (11.76%)	3 (17.65%)	1 (5.88%)
Lack of housing for aging adults/seniors	4 (23.53%)	4 (23.53%)	2 (11.76%)

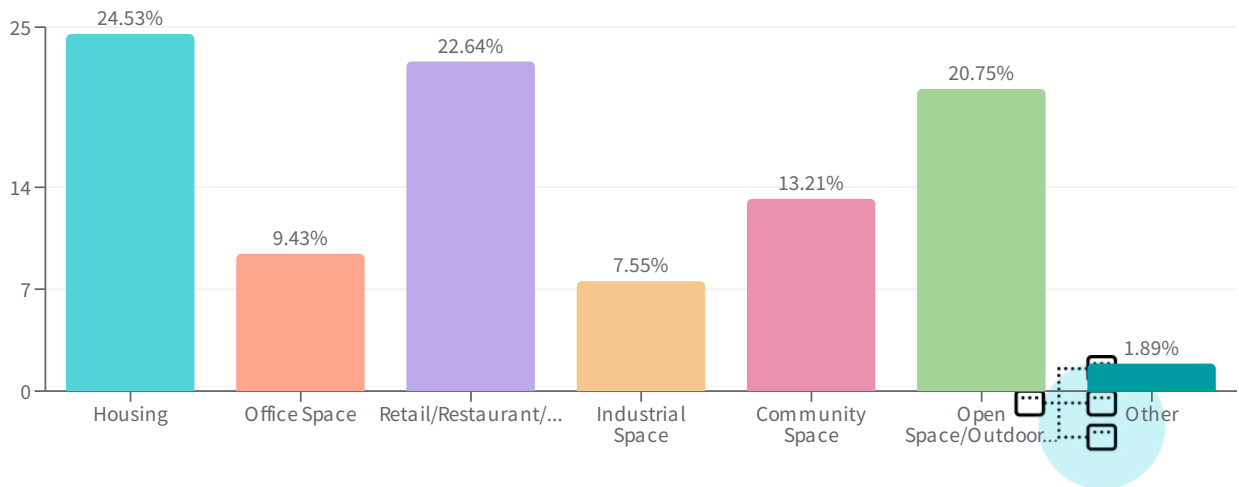
	4	5 (MOST CRITICAL)	DON'T KNOW
Houses are old and need lots of updates	6 (35.29%)	5 (29.41%)	1 (5.88%)
Lack of diverse housing types	4 (23.53%)	3 (17.65%)	4 (23.53%)
Short term and seasonal rentals remove housing for year-round residents	0 (0.00%)	1 (5.88%)	7 (41.18%)
Childcare availability	2 (11.76%)	5 (29.41%)	4 (23.53%)
Access to goods and services	3 (17.65%)	3 (17.65%)	0 (0.00%)
Access to public transportation	5 (29.41%)	5 (29.41%)	1 (5.88%)
Property taxes too high	3 (17.65%)	6 (35.29%)	2 (11.76%)
Other	0 (0.00%)	2 (11.76%)	3 (17.65%)
Total	50 (21.01%)	63 (26.47%)	30 (12.61%)



QUESTION 03 | MULTIPLE CHOICE

The Canal District represents a significant opportunity for redevelopment. At the broadest level, what would you like to see there? Please select all that apply. You will be asked about redevelopment specifics in the following questions.

Answered: **17** Skipped: **0**

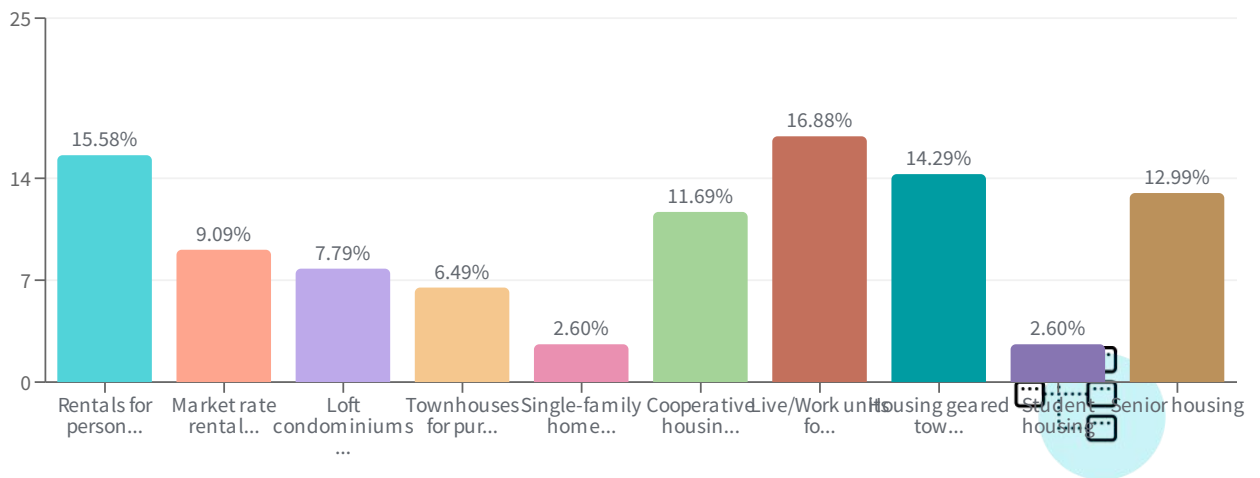


ANSWER CHOICES	RESPONSES	RESPONSE PERCENTAGE
Housing	13	24.53%
Office Space	5	9.43%
Retail/Restaurant/Entertainment Space	12	22.64%
Industrial Space	4	7.55%
Community Space	7	13.21%
Open Space/Outdoor Recreation	11	20.75%
Other	1	1.89%

QUESTION 04 | MULTIPLE CHOICE

Housing: What specific kind of housing do you want to see in this space? (Please select all that apply. Select none if you do not believe housing should be part of the reuse of the Canal District)

Answered: **17** Skipped: **0**



ANSWER CHOICES	RESPONSES	RESPONSE PERCENTAGE
Rentals for persons with low-to-moderate incomes	12	15.58%
Market rate rental units (apartments)	7	9.09%
Loft condominiums for purchase	6	7.79%
Townhouses for purchase	5	6.49%
Single-family homes for purchase	2	2.60%
Cooperative housing (shared ownership of building)	9	11.69%
Live/Work units for artists and creatives	13	16.88%
Housing geared toward Montague's workforce	11	14.29%

ANSWER CHOICES ▾

RESPONSES ▾

RESPONSE PERCENTAGE ▾

Student housing

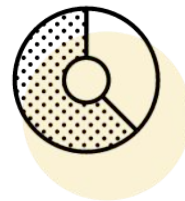
2

2.60%

Senior housing

10

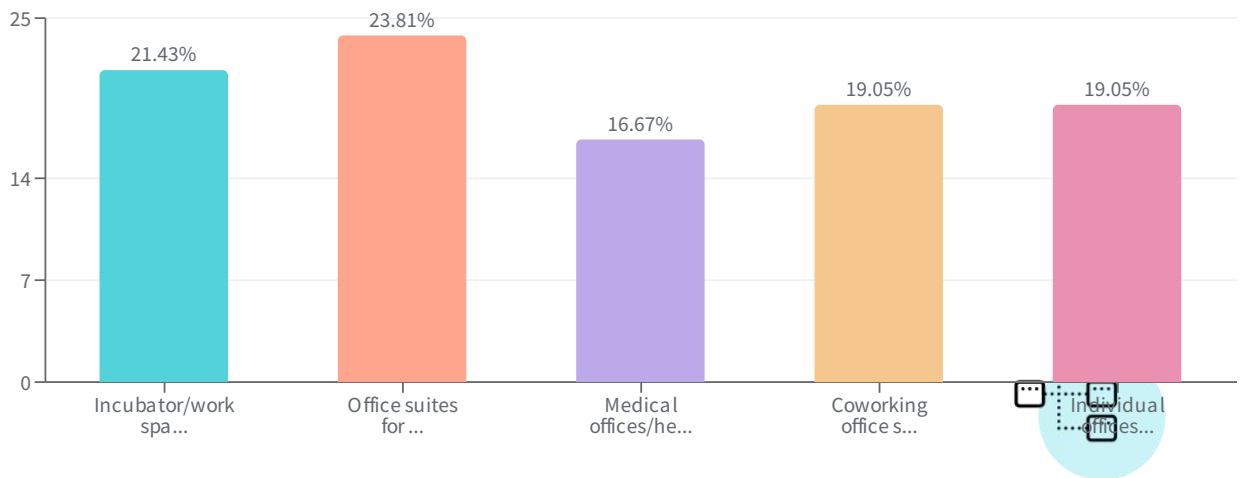
12.99%



QUESTION 05 | MULTIPLE CHOICE

Office Space: What specific kind of office space do you want to see in this space? (Please select all that apply. Select none if you do not believe office space should be part of the reuse of the Canal District)

Answered: 17 Skipped: 0

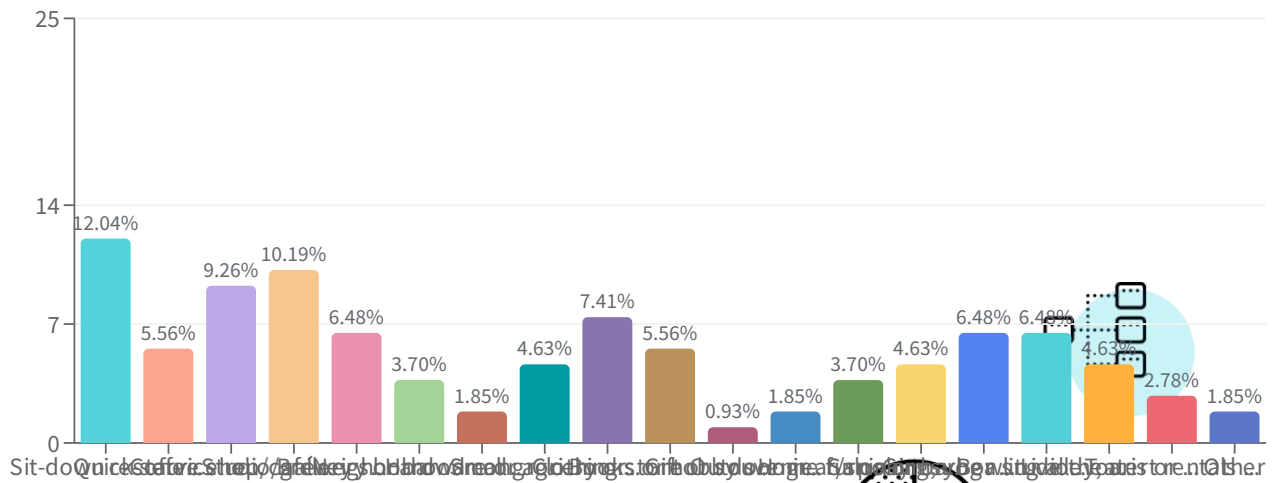


ANSWER CHOICES	RESPONSES	RESPONSE PERCENTAGE
Incubator/work space for new businesses/entrepreneurs	9	21.43%
Office suites for small to medium sized businesses (5-20 employees)	10	23.81%
Medical offices/health care	7	16.67%
Coworking office space with a variety of membership options and office types	8	19.05%
Individual offices for healthcare or personal services (dentist, therapy, massage, etc.)	8	19.05%

QUESTION 06 | MULTIPLE CHOICE

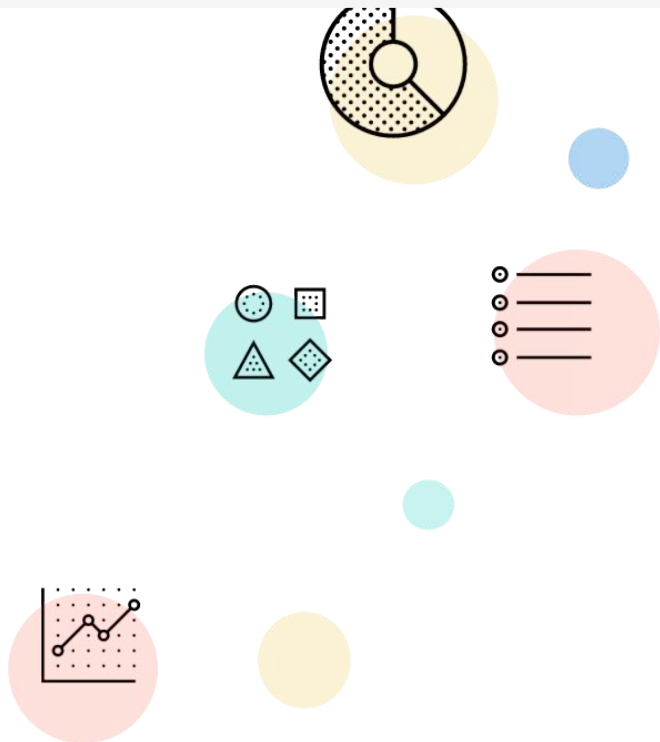
Retail, Restaurant, or Entertainment Space: What specific kind of retail, restaurant, or entertainment uses do you want to see in this space? (Please select all that apply. Select none if you do not believe retail or commercial space should be part of the reuse of the Canal District)

Answered: **17** Skipped: **0**



ANSWER CHOICES	RESPONSES	RESPONSE PERCENTAGE
Sit-down restaurant	13	12.04%
Quick-service restaurant	6	5.56%
Coffee shop/café/bakery	10	9.26%
Studio/gallery space for artists	11	10.19%
Brewery or bar	7	6.48%
Neighborhood convenience store	4	3.70%
Hardware or agricultural supply store	2	1.85%
Small grocery or specialty food store	5	4.63%

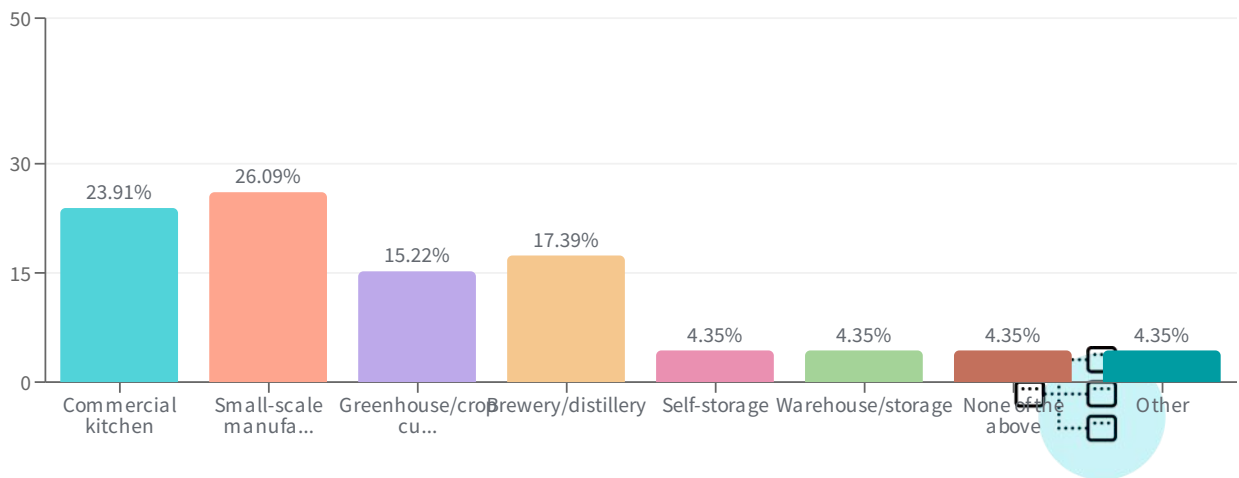
ANSWER CHOICES ▾	RESPONSES ▾	RESPONSE PERCENTAGE ▾
Clothing store	8	7.41%
Books or hobby store	6	5.56%
Gift or souvenir store	1	0.93%
Outdoor gear/sporting goods store	2	1.85%
Home furnishings store	4	3.70%
Salon or barber shop	5	4.63%
Gym, yoga studio, or other fitness business	7	6.48%
Bowling alley, arcade, indoor mini-golf, or other indoor recreation	7	6.48%
Live theater or music hall	5	4.63%
Tourist rentals (hostel model, geared toward bike tours, etc.)	3	2.78%
Other	2	1.85%



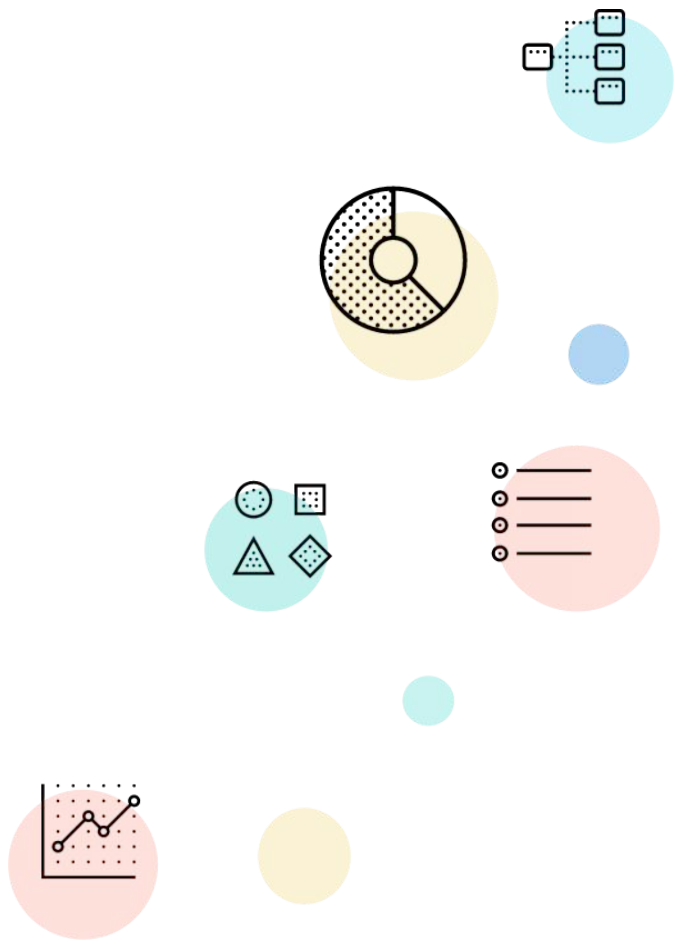
QUESTION 07 | MULTIPLE CHOICE

Industrial Space: What specific kind of industrial uses do you want to see in this space? (Please select all that apply. Select none if you do not believe Industrial space should be part of the reuse of the Canal District)

Answered: 17 Skipped: 0



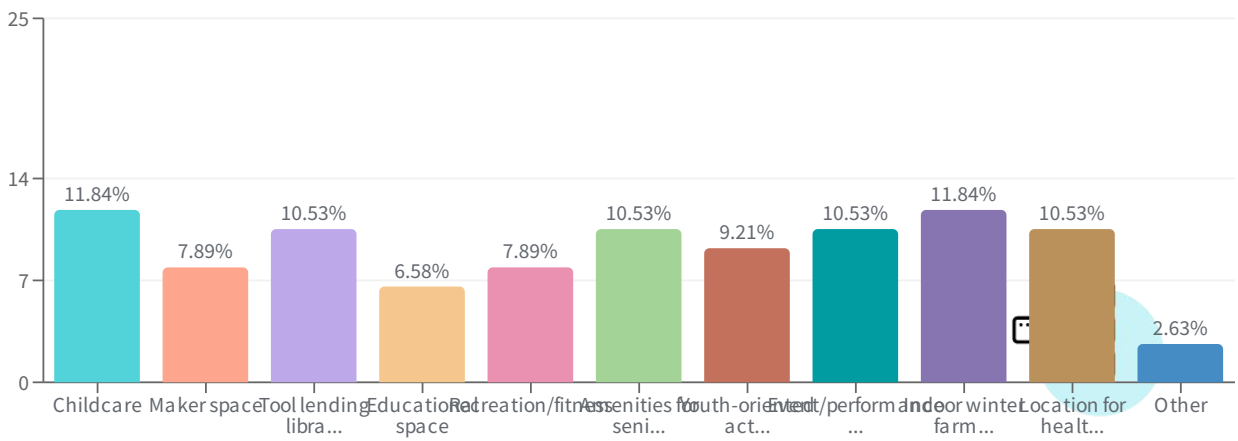
ANSWER CHOICES	RESPONSES	RESPONSE PERCENTAGE
Commercial kitchen	11	23.91%
Small-scale manufacturing	12	26.09%
Greenhouse/crop cultivation	7	15.22%
Brewery/distillery	8	17.39%
Self-storage	2	4.35%
Warehouse/storage	2	4.35%
None of the above	2	4.35%
Other	2	4.35%



QUESTION 08 | MULTIPLE CHOICE

Community Space: What specific kind of community programs/activities do you want to see in this space? (Please select all that apply. Select none if you do not believe community program/activity space should be part of the reuse of the Canal District)

Answered: **17** Skipped: **0**



ANSWER CHOICES	RESPONSES	RESPONSE PERCENTAGE
Childcare	9	11.84%
Maker space	6	7.89%
Tool lending library	8	10.53%
Educational space	5	6.58%
Recreation/fitness	6	7.89%
Amenities for seniors	8	10.53%
Youth-oriented activities	7	9.21%
Event/performance space	8	10.53%

ANSWER CHOICES ▾

RESPONSES ▾

RESPONSE PERCENTAGE ▾

Indoor winter farmer's market

9

11.84%

Location for health care services or
community outreach

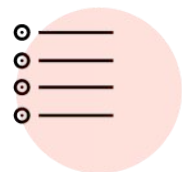
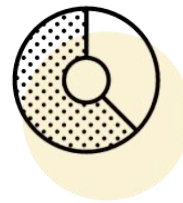
8

10.53%

Other

2

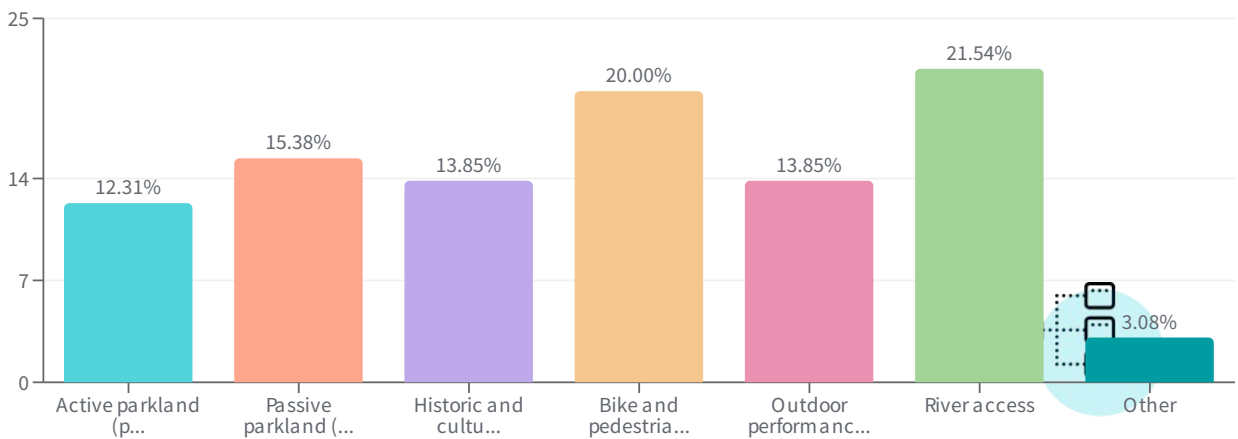
2.63%



QUESTION 09 | MULTIPLE CHOICE

Open Space/Outdoor Recreation: What specific kind of community recreation space do you want to see in this space? (Please select all that apply. Select none if you do not believe community program/activity space should be part of the reuse of the Canal District)

Answered: 17 Skipped: 0



ANSWER CHOICES	RESPONSES	RESPONSE PERCENTAGE
Active parkland (playground, climbing structures, pump track)	8	12.31%
Passive parkland (benches, tables, walking paths)	10	15.38%
Historic and cultural interpretive information	9	13.85%
Bike and pedestrian connections between downtown and the Canal District	13	20.00%
Outdoor performance space	9	13.85%
River access	14	21.54%

ANSWER CHOICES ▾

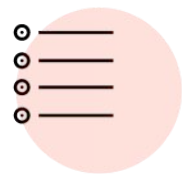
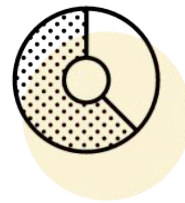
RESPONSES ▾

RESPONSE PERCENTAGE ▾

Other

2

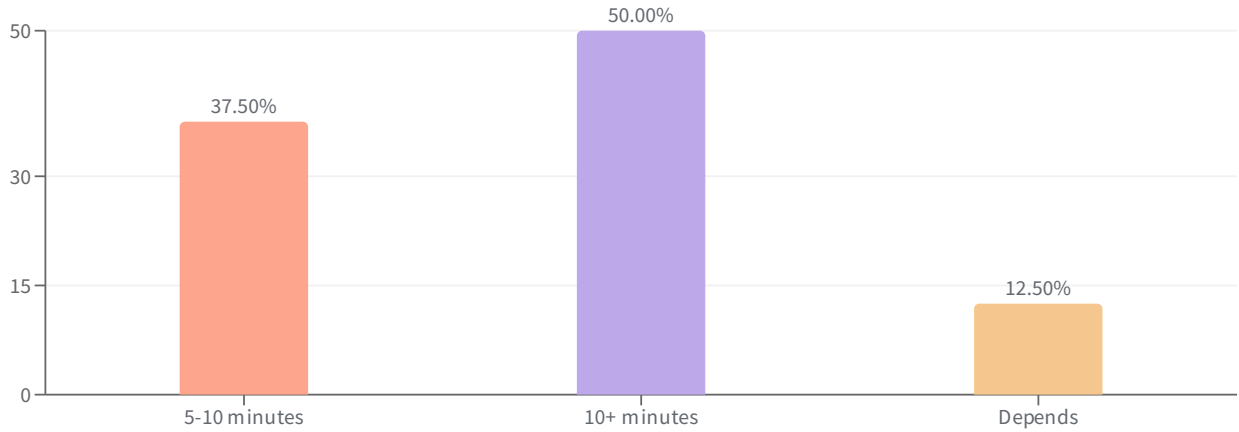
3.08%



QUESTION 10 | MULTIPLE CHOICE

How far are you willing to walk to access amenities on the Canal?

Answered: 16 Skipped: 0



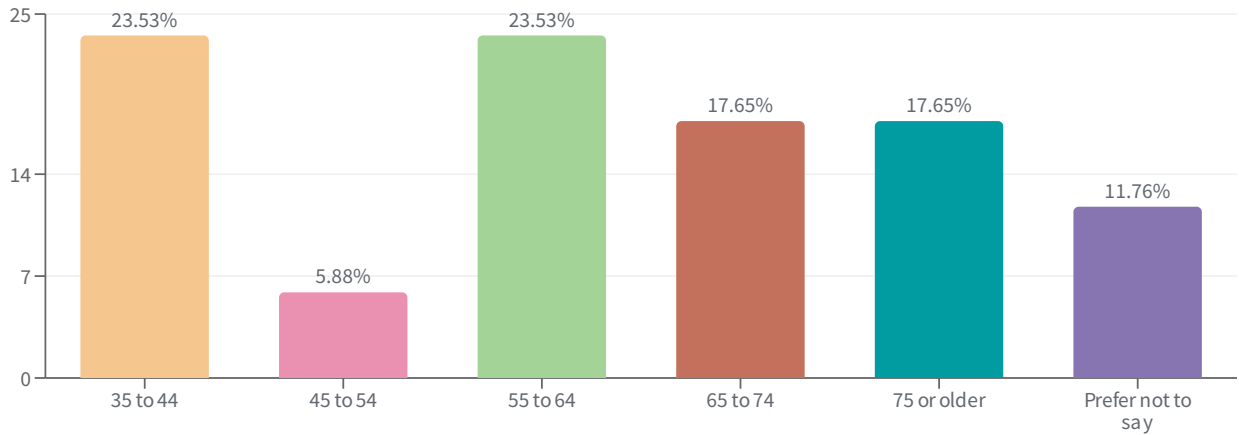
ANSWER CHOICES	RESPONSES	RESPONSE PERCENTAGE
5-10 minutes	6	37.50%
10+ minutes	8	50.00%
Depends	2	12.50%



QUESTION 13 | MULTIPLE CHOICE

What is your age?

Answered: 17 Skipped: 0



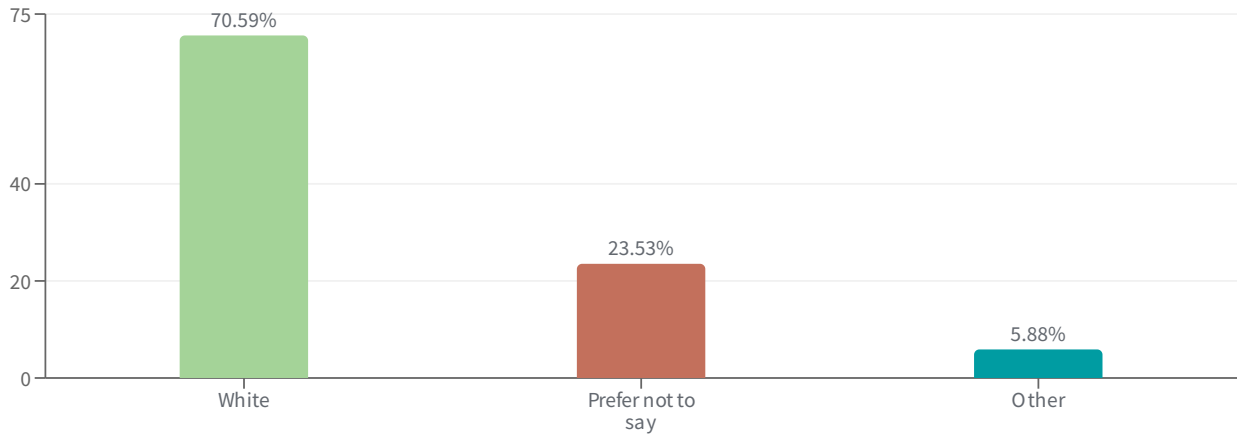
ANSWER CHOICES	RESPONSES	RESPONSE PERCENTAGE
35 to 44	4	23.53%
45 to 54	1	5.88%
55 to 64	4	23.53%
65 to 74	3	17.65%
75 or older	3	17.65%
Prefer not to say	2	11.76%



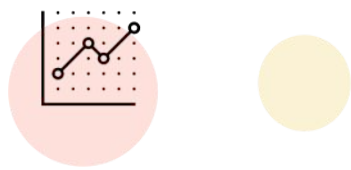
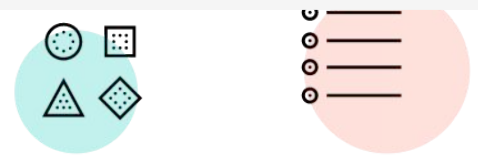
QUESTION 14 | MULTIPLE CHOICE

How do you describe your ethnicity? Select all that apply

Answered: 17 Skipped: 0



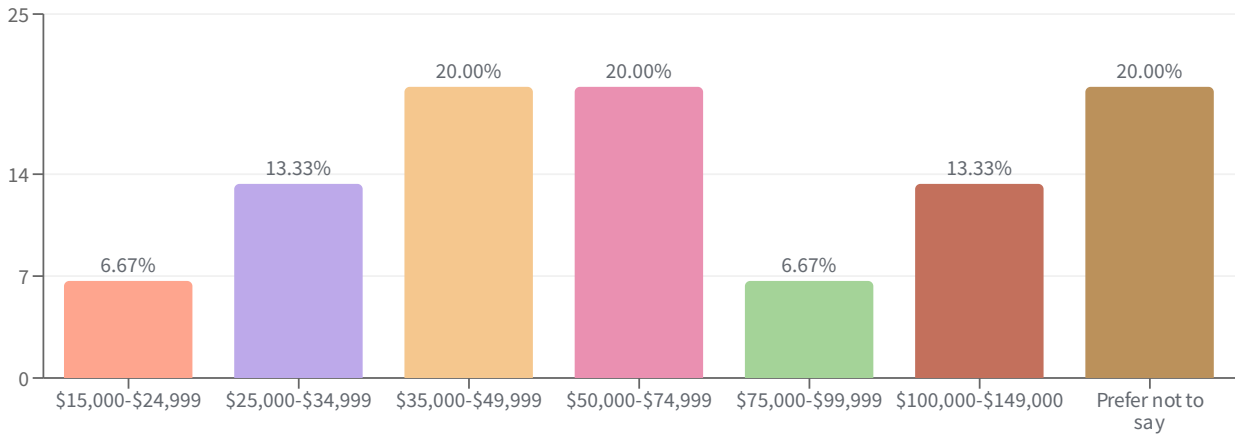
ANSWER CHOICES	RESPONSES	RESPONSE PERCENTAGE
White	12	70.59%
Prefer not to say	4	23.53%
Other	1	5.88%



QUESTION 15 | MULTIPLE CHOICE

What is the annual income for your household before taxes?

Answered: 15 Skipped: 1

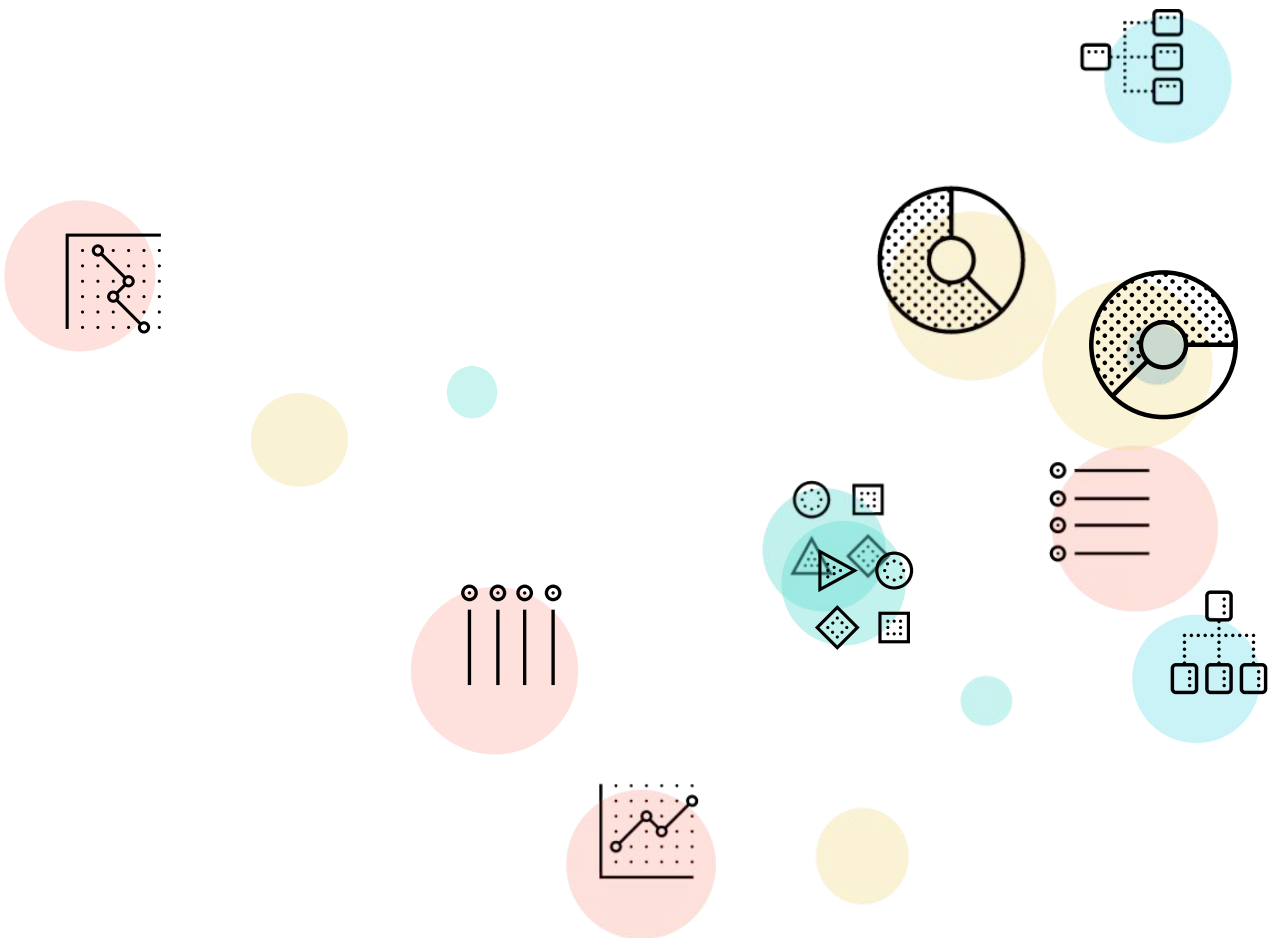


ANSWER CHOICES	RESPONSES	RESPONSE PERCENTAGE
\$15,000-\$24,999	1	6.67%
\$25,000-\$34,999	2	13.33%
\$35,000-\$49,999	3	20.00%
\$50,000-\$74,999	3	20.00%
\$75,000-\$99,999	1	6.67%
\$100,000-\$149,000	2	13.33%
Prefer not to say	3	20.00%



Thank You !

We really appreciate your time and feedback.



ATTACHMENT C: BUSINESS SURVEY RESULTS

Default Report

Explore the data behind your survey responses. Gain a better perspective of your survey data and uncover insights for further planning.

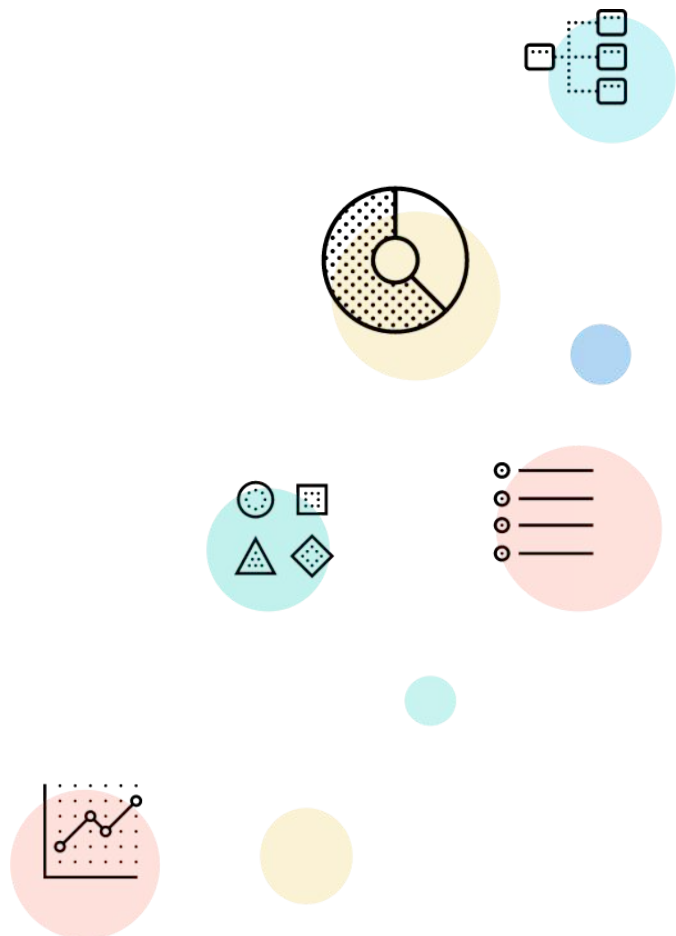
 Visited
55

 Started
4

 Avg. Time to Complete
20m

 Completed
4

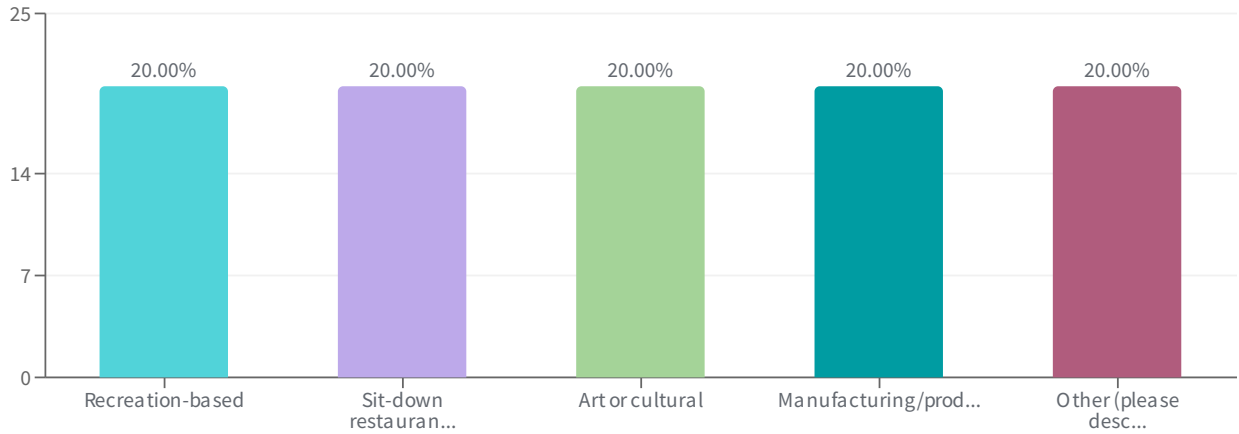
 Completion Rate
100.00%



QUESTION 02 | MULTIPLE CHOICE

What type of business do you own?

Answered: 4 Skipped: 0



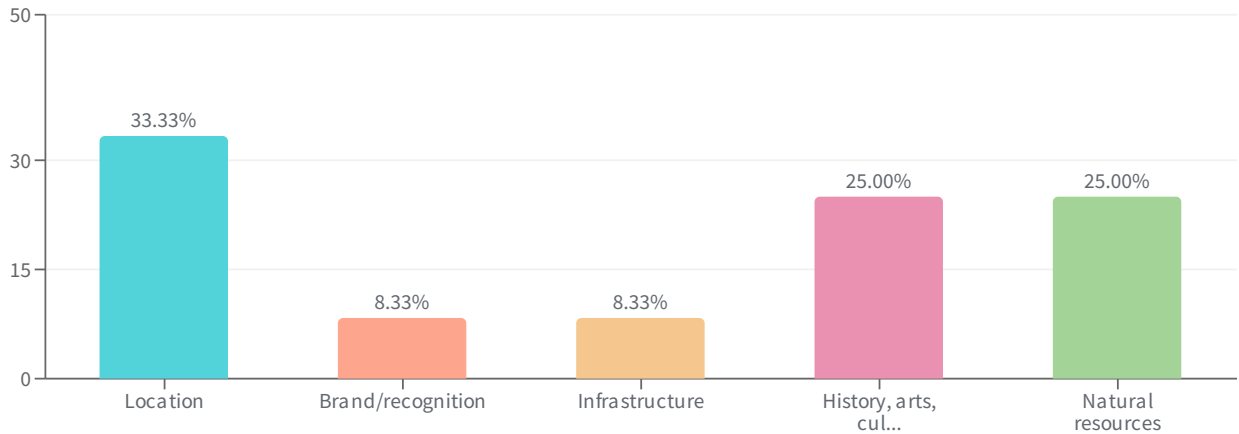
ANSWER CHOICES	RESPONSES	RESPONSE PERCENTAGE
Recreation-based	1	20.00%
Sit-down restaurant	1	20.00%
Art or cultural	1	20.00%
Manufacturing/production	1	20.00%
Other (please describe)	1	20.00%



QUESTION 05 | MULTIPLE CHOICE

What do you see as the greatest assets of Montague related to economic development? (Select top 3)

Answered: 4 Skipped: 0

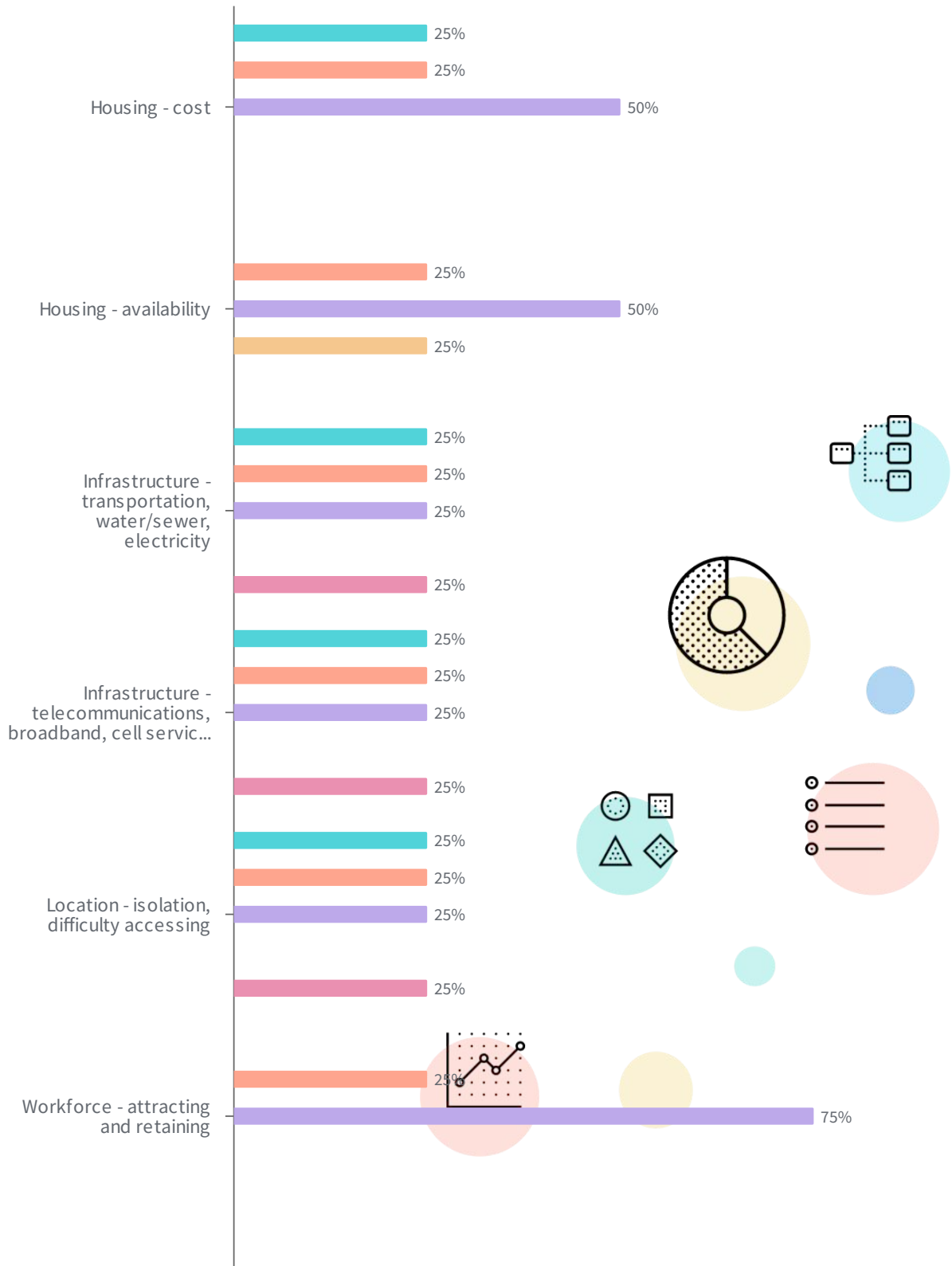


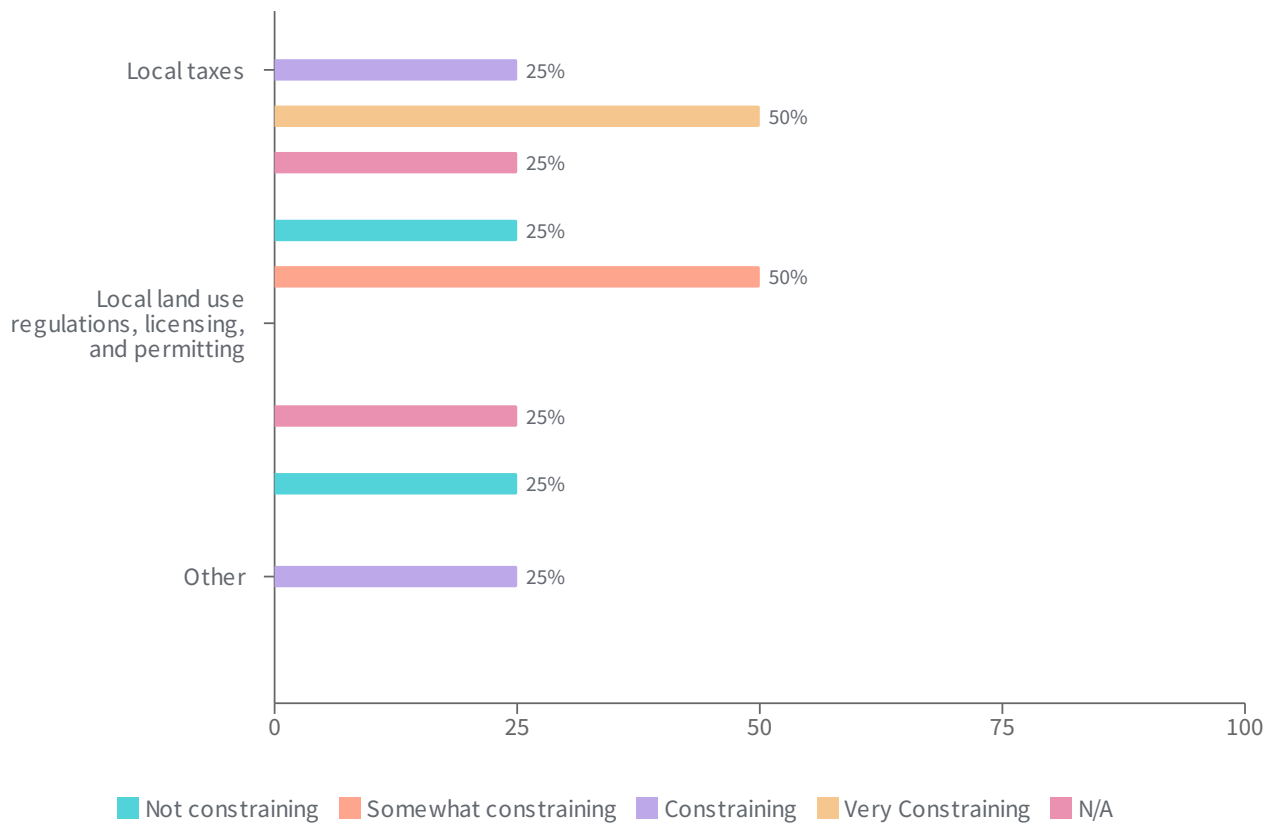
ANSWER CHOICES ▾	RESPONSES ▾	RESPONSE PERCENTAGE ▾
Location	4	33.33%
Brand/recognition	1	8.33%
Infrastructure	1	8.33%
History, arts, culture	3	25.00%
Natural resources	3	25.00%








How constraining are the following to future economic sustainability in Montague?

Answered: 4 Skipped: 0





	NOT CONSTRAINING	SOMEWHAT CONSTRAINING	CONSTRAINING
Housing - cost	1 (25.00%)	1 (25.00%)	2 (50.00%)
Housing - availability	0 (0.00%)	1 (25.00%)	2 (50.00%)
Infrastructure - transportation, water/sewer, electricity	1 (25.00%)	1 (25.00%)	1 (25.00%)
Infrastructure - telecommunications, broadband, cell service	1 (25.00%)	1 (25.00%)	1 (25.00%)
Location - isolation, difficulty accessing	1 (25.00%)	1 (25.00%)	1 (25.00%)
Workforce - attracting and retaining	0 (0.00%)	1 (25.00%)	3 (75.00%)
Local taxes	0 (0.00%)	0 (0.00%)	1 (25.00%)
Local land use regulations, licensing, and permitting	1 (25.00%)	2 (50.00%)	0 (0.00%)

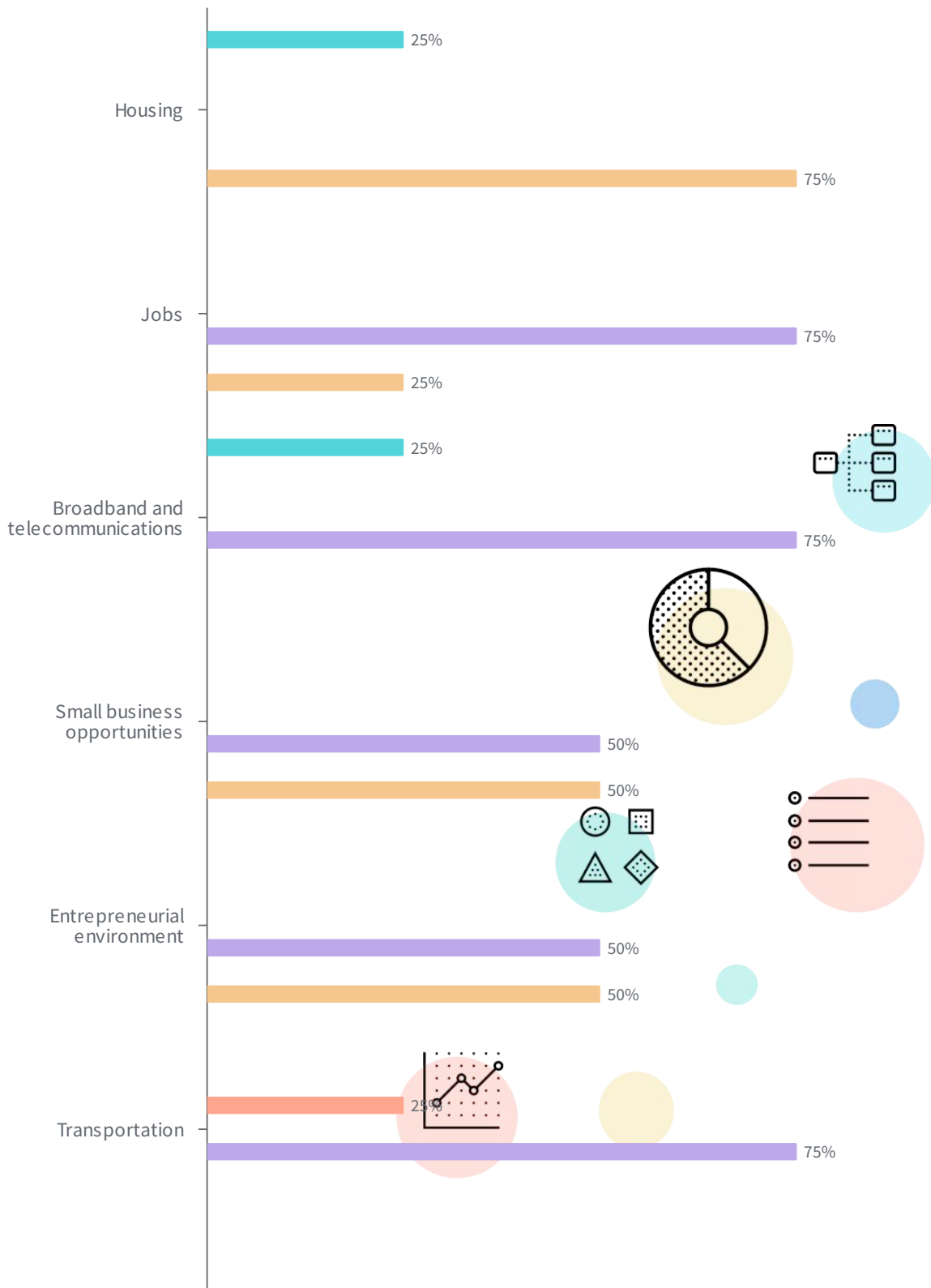
	 NOT CONSTRAINING	 SOMEWHAT CONSTRAINING	 CONSTRAINING
Other	1 (25.00%)	0 (0.00%)	1 (25.00%)
Total	6 (16.67%)	8 (22.22%)	12 (33.33%)
	 VERY CONSTRAINING	 N/A	
Housing - cost	0 (0.00%)	0 (0.00%)	
Housing - availability	1 (25.00%)	0 (0.00%)	
Infrastructure - transportation, water/sewer, electricity	0 (0.00%)	1 (25.00%)	
Infrastructure - telecommunications, broadband, cell service	0 (0.00%)	1 (25.00%)	
Location - isolation, difficulty accessing	0 (0.00%)	1 (25.00%)	
Workforce - attracting and retaining	0 (0.00%)	0 (0.00%)	
Local taxes	2 (50.00%)	1 (25.00%)	
Local land use regulations, licensing, and permitting	0 (0.00%)	1 (25.00%)	
Other	0 (0.00%)	0 (0.00%)	
Total	3 (8.33%)	5 (13.89%)	

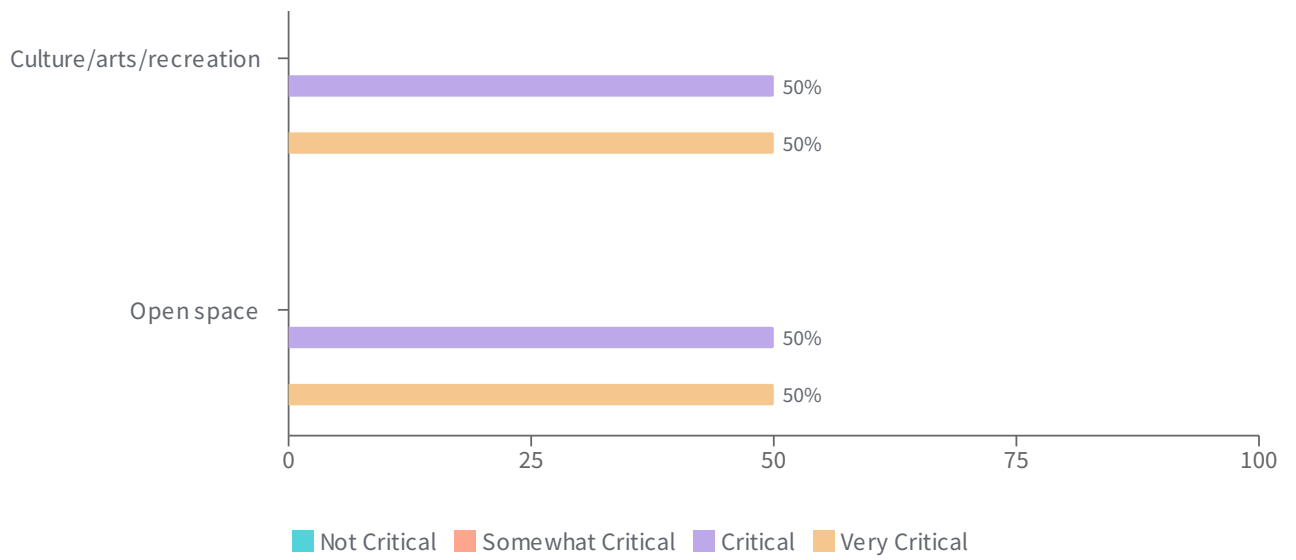





QUESTION 08 | MATRIX


How critical do you see the following being to the future economic wellbeing of Montague?

Answered: 4 Skipped: 0



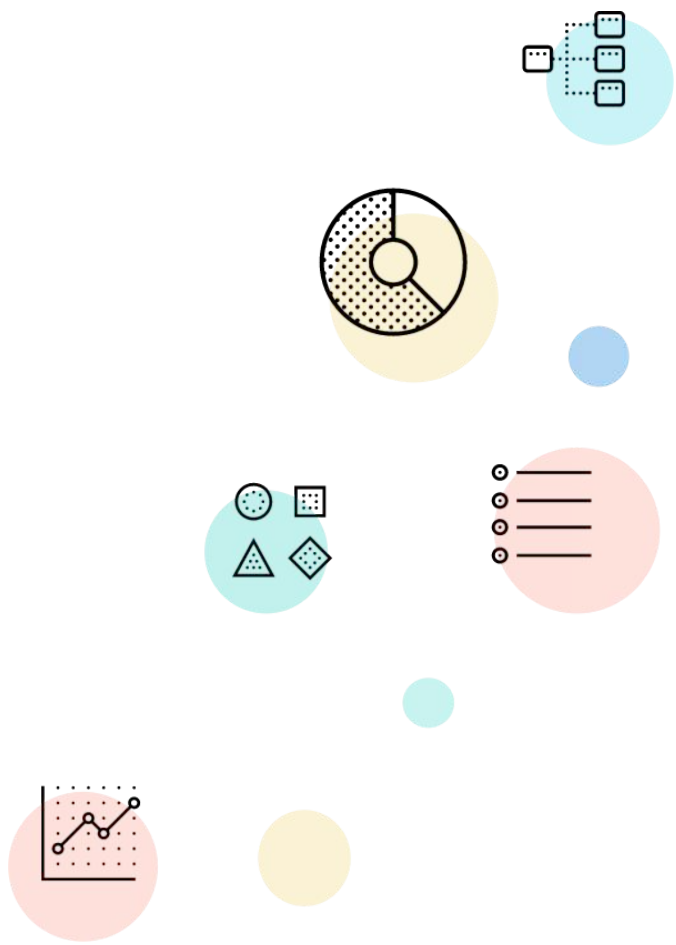


	 NOT CRITICAL	 SOMEWHAT CRITICAL	 CRITICAL
Housing	1 (25.00%)	0 (0.00%)	0 (0.00%)
Jobs	0 (0.00%)	0 (0.00%)	3 (75.00%)
Broadband and telecommunications	1 (25.00%)	0 (0.00%)	3 (75.00%)
Small business opportunities	0 (0.00%)	0 (0.00%)	2 (50.00%)
Entrepreneurial environment	0 (0.00%)	0 (0.00%)	2 (50.00%)
Transportation	0 (0.00%)	1 (25.00%)	3 (75.00%)
Culture/arts/recreation	0 (0.00%)	0 (0.00%)	2 (50.00%)
Open space	0 (0.00%)	0 (0.00%)	2 (50.00%)
Total	2 (6.25%)	1 (3.13%)	17 (53.13%)

	 VERY CRITICAL
Housing	3 (75.00%)
Jobs	1 (25.00%)
Broadband and telecommunications	0 (0.00%)

VERY CRITICAL

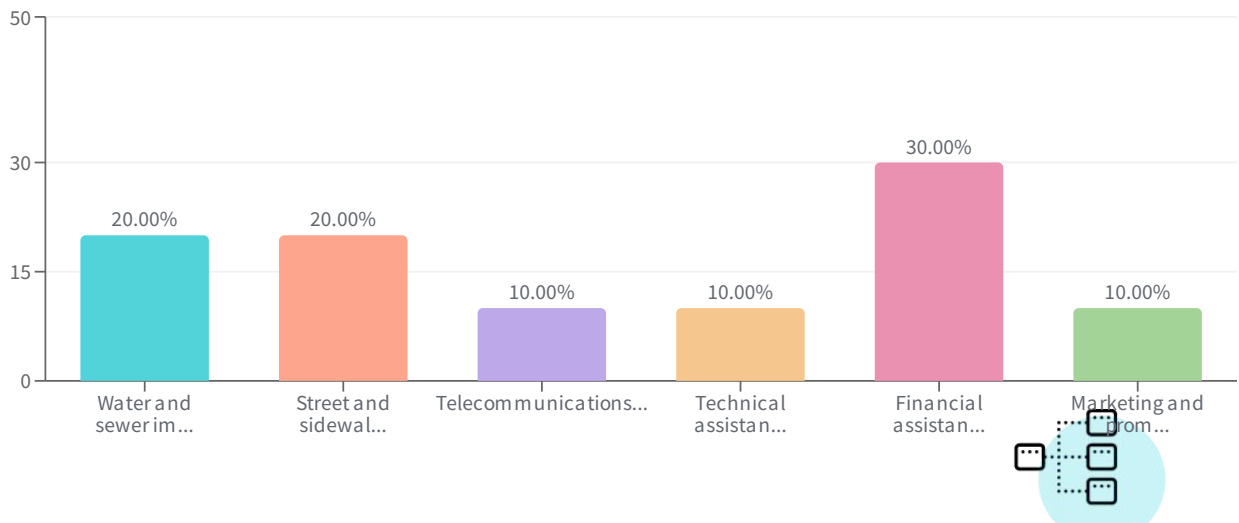
Small business opportunities	2 (50.00%)
Entrepreneurial environment	2 (50.00%)
Transportation	0 (0.00%)
Culture/arts/recreation	2 (50.00%)
Open space	2 (50.00%)
Total	12 (37.50%)



QUESTION 10 | MULTIPLE CHOICE

In what areas would you approve of the Town placing staff and financial resources in an attempt to spur economic development? (Select top 3)

Answered: 4 Skipped: 0

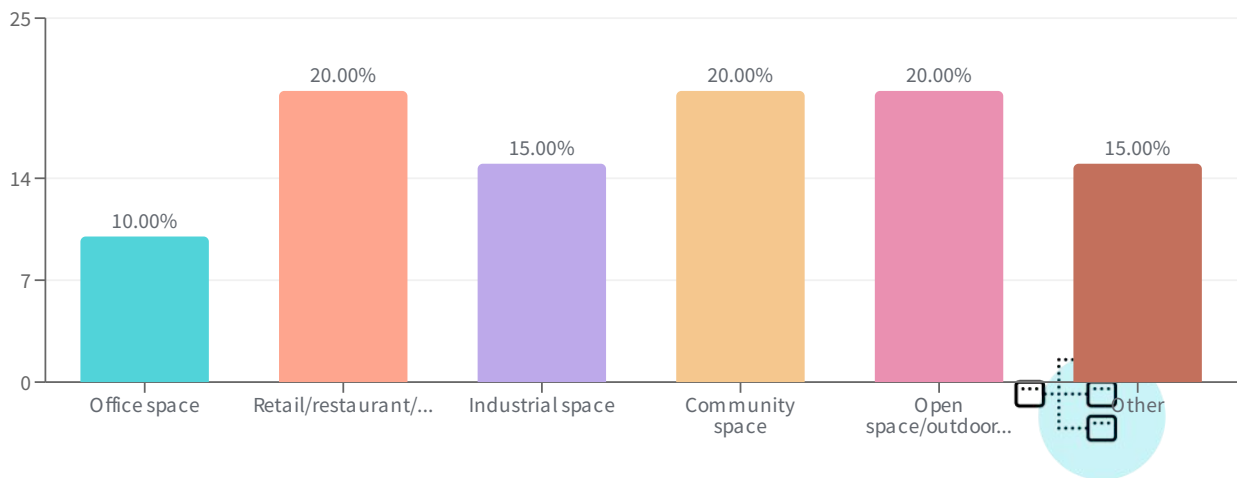


ANSWER CHOICES	RESPONSES	RESPONSE PERCENTAGE
Water and sewer improvements	2	20.00%
Street and sidewalk improvements	2	20.00%
Telecommunications and broadband improvements	1	10.00%
Technical assistance programs for economic development - business planning, marketing technique training, networking assistance	1	10.00%
Financial assistance programs for economic development - revolving loan fund, grant programs	3	30.00%
Marketing and promotion	1	10.00%

QUESTION 11 | MULTIPLE CHOICE

The Canal District represents a significant opportunity for redevelopment. At the broadest level, what would you like to see there? Please select all that apply. You will be asked about redevelopment specifics in the following questions.

Answered: **4** Skipped: **0**

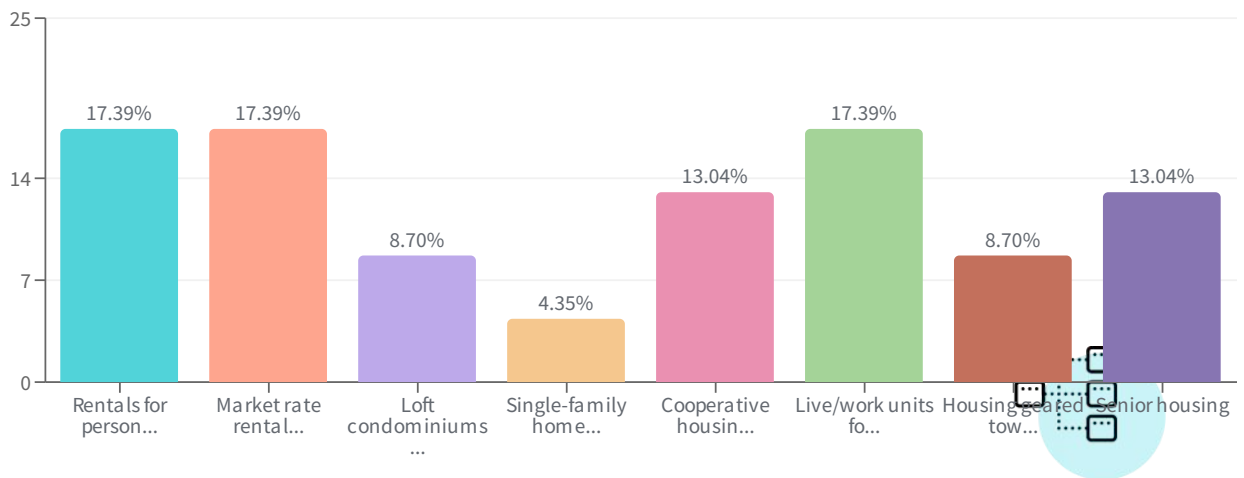


ANSWER CHOICES	RESPONSES	RESPONSE PERCENTAGE
Office space	2	10.00%
Retail/restaurant/entertainment space	4	20.00%
Industrial space	3	15.00%
Community space	4	20.00%
Open space/outdoor recreation	4	20.00%
Other	3	15.00%

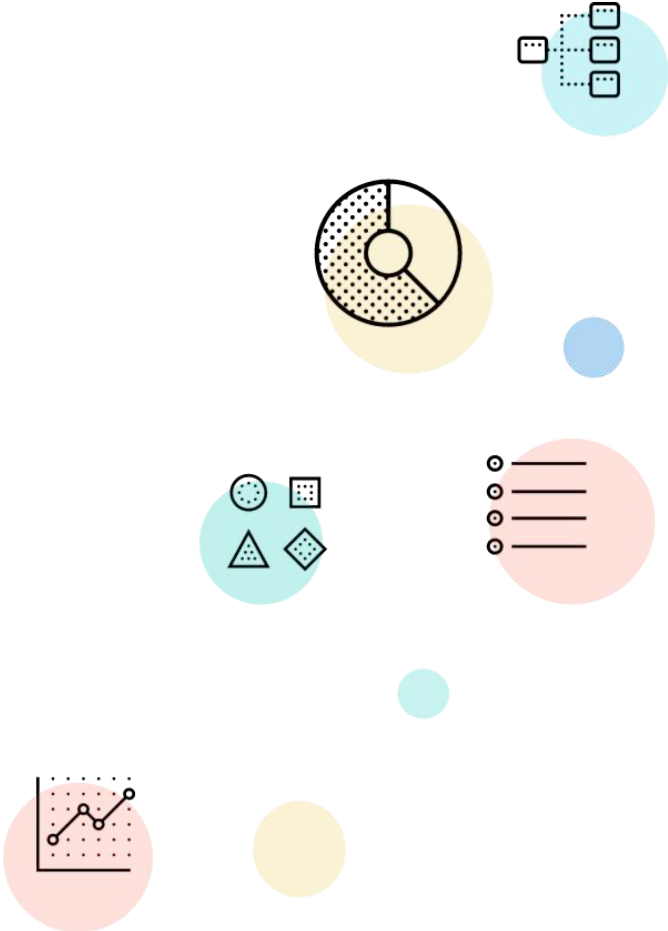
QUESTION 12 | MULTIPLE CHOICE

Housing: What specific kind of housing do you want to see in this space? (Please select all that apply. Select none if you do not believe housing should be part of the reuse of the Canal District)

Answered: 4 Skipped: 0



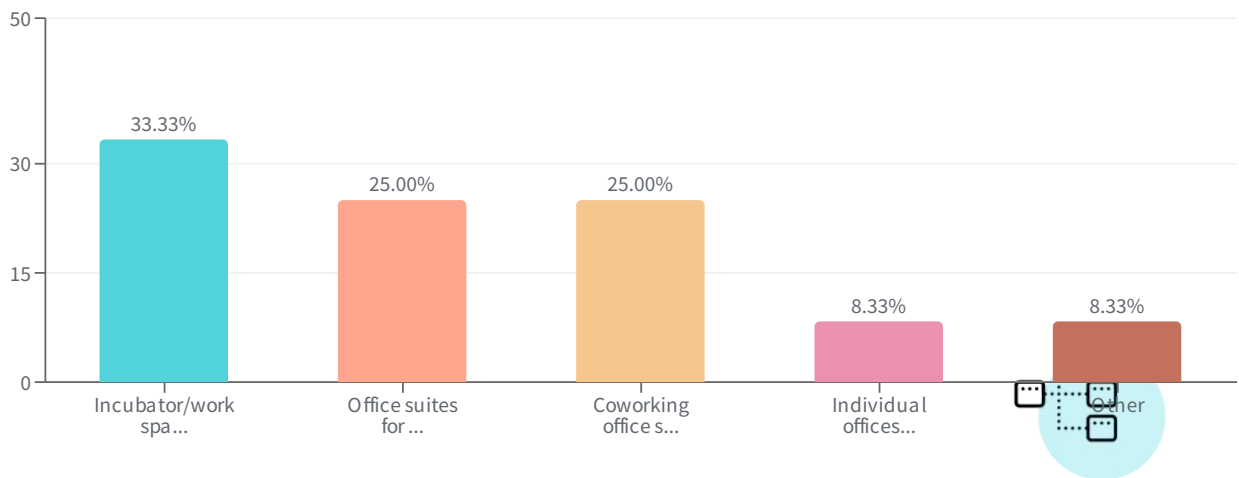
ANSWER CHOICES	RESPONSES	RESPONSE PERCENTAGE
Rentals for persons with low-to-moderate incomes	4	17.39%
Market rate rental units (apartments)	4	17.39%
Loft condominiums for purchase	2	8.70%
Single-family homes for purchase	1	4.35%
Cooperative housing (shared ownership of building)	3	13.04%
Live/work units for artists and creatives	4	17.39%
Housing geared toward Montague's workforce	2	8.70%
Senior housing	3	13.04%



QUESTION 13 | MULTIPLE CHOICE

Office Space: What specific kind of office space do you want to see in this space? (Please select all that apply. Select none if you do not believe office space should be part of the reuse of the Canal District)

Answered: **4** Skipped: **0**

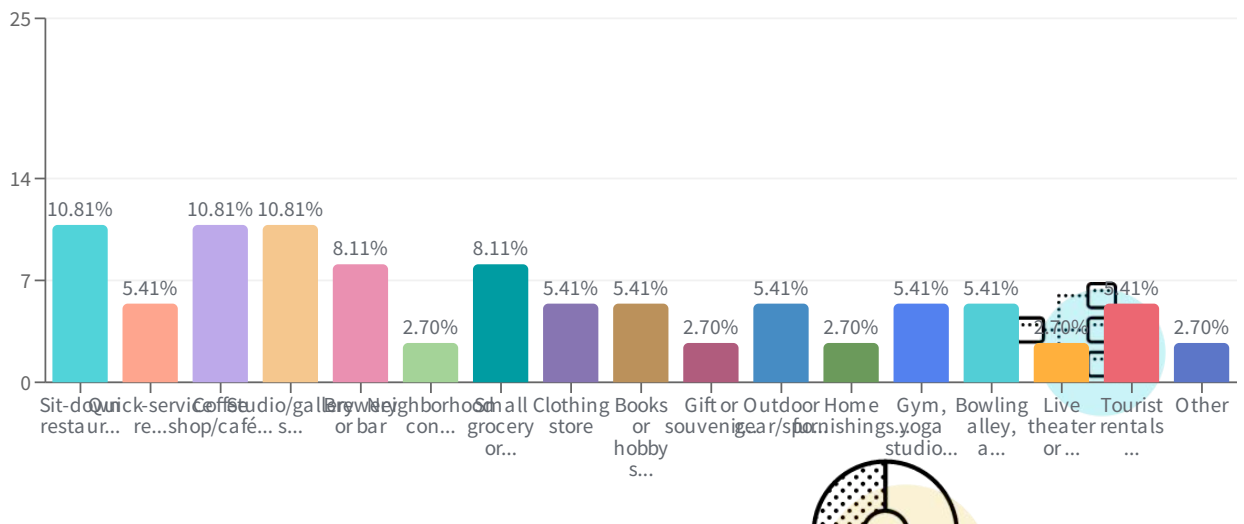


ANSWER CHOICES	RESPONSES	RESPONSE PERCENTAGE
Incubator/work space for new businesses/entrepreneurs	4	33.33%
Office suites for small-to-medium sized businesses (5-20 employees)	3	25.00%
Coworking office space with a variety of membership options and office types	3	25.00%
Individual offices for healthcare or personal services (dentist, therapy, massage, etc.)	1	8.33%
Other	1	8.33%

QUESTION 14 | MULTIPLE CHOICE

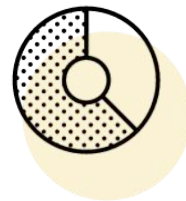
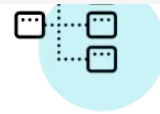
Retail, Restaurant, or Entertainment Space: What specific kind of retail, restaurant, or entertainment uses do you want to see in this space? (Please select all that apply. Select none if you do not believe retail or commercial space should be part of the reuse of the Canal District)

Answered: **4** Skipped: **0**



ANSWER CHOICES	RESPONSES	RESPONSE PERCENTAGE
Sit-down restaurant	4	10.81%
Quick-service restaurant	2	5.41%
Coffee shop/café/bakery	4	10.81%
Studio/gallery space for artists	4	10.81%
Brewery or bar	3	8.11%
Neighborhood convenience store	1	2.70%
Small grocery or specialty food store	3	8.11%
Clothing store	2	5.41%

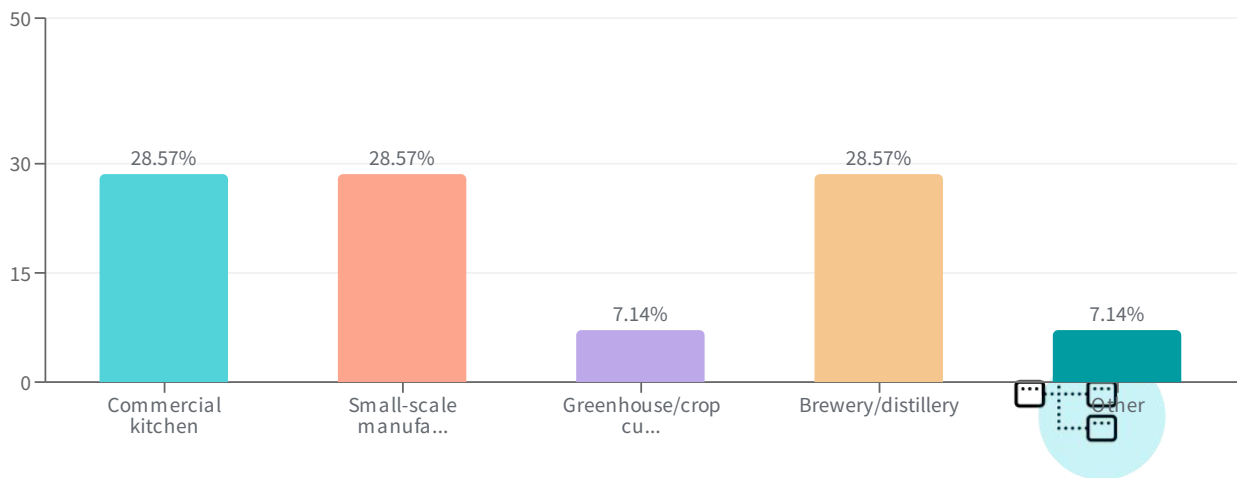
ANSWER CHOICES ▾	RESPONSES ▾	RESPONSE PERCENTAGE ▾
Books or hobby store	2	5.41%
Gift or souvenir store	1	2.70%
Outdoor gear/sporting goods store	2	5.41%
Home furnishings store	1	2.70%
Gym, yoga studio, or other fitness business	2	5.41%
Bowling alley, arcade, indoor mini-golf, or other indoor recreation	2	5.41%
Live theater or music hall	1	2.70%
Tourist rentals (hostel model, geared toward bike tours, etc.)	2	5.41%
Other	1	2.70%



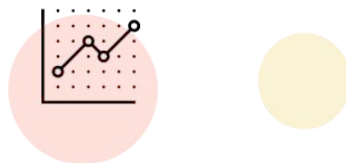
QUESTION 15 | MULTIPLE CHOICE

Industrial Space: What specific kind of industrial uses do you want to see in this space? (Please select all that apply. Select none if you do not believe industrial space should be part of the reuse of the Canal District)

Answered: 4 Skipped: 0



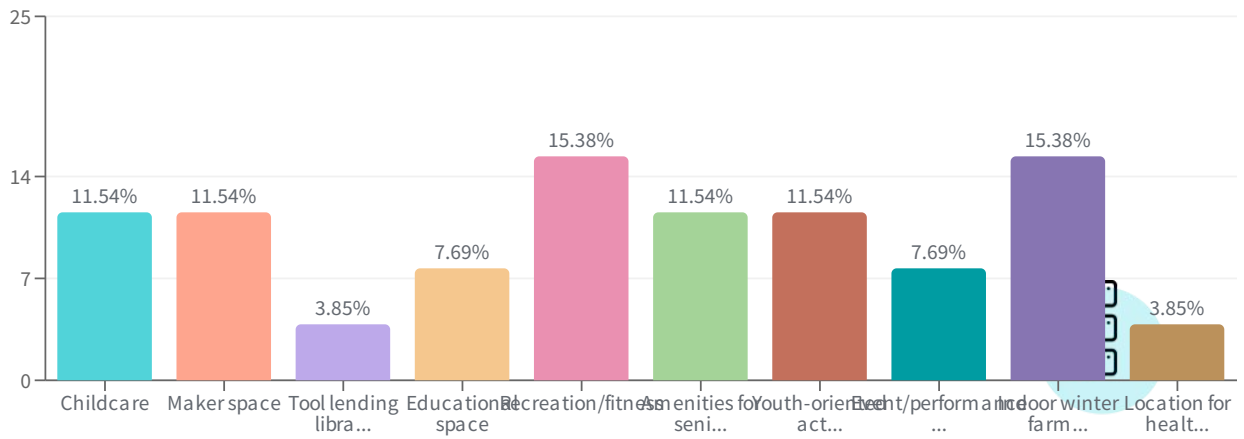
ANSWER CHOICES	RESPONSES	RESPONSE PERCENTAGE
Commercial kitchen	4	28.57%
Small-scale manufacturing	4	28.57%
Greenhouse/crop cultivation	1	7.14%
Brewery/distillery	4	28.57%
Other	1	7.14%



QUESTION 16 | MULTIPLE CHOICE

Community Space: What specific kind of community programs/activities do you want to see in this space? (Please select all that apply. Select none if you do not believe community program/activity space should be part of the reuse of the Canal District)

Answered: **4** Skipped: **0**



ANSWER CHOICES	RESPONSES	RESPONSE PERCENTAGE
Childcare	3	11.54%
Maker space	3	11.54%
Tool lending library	1	3.85%
Educational space	2	7.69%
Recreation/fitness	4	15.38%
Amenities for seniors	3	11.54%
Youth-oriented activities	3	11.54%
Event/performance space	2	7.69%

ANSWER CHOICES ▾

RESPONSES ▾

RESPONSE PERCENTAGE ▾

Indoor winter farmer's market

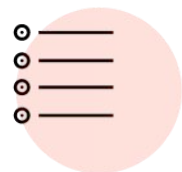
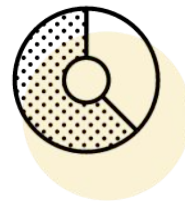
4

15.38%

Location for health care services or
community outreach

1

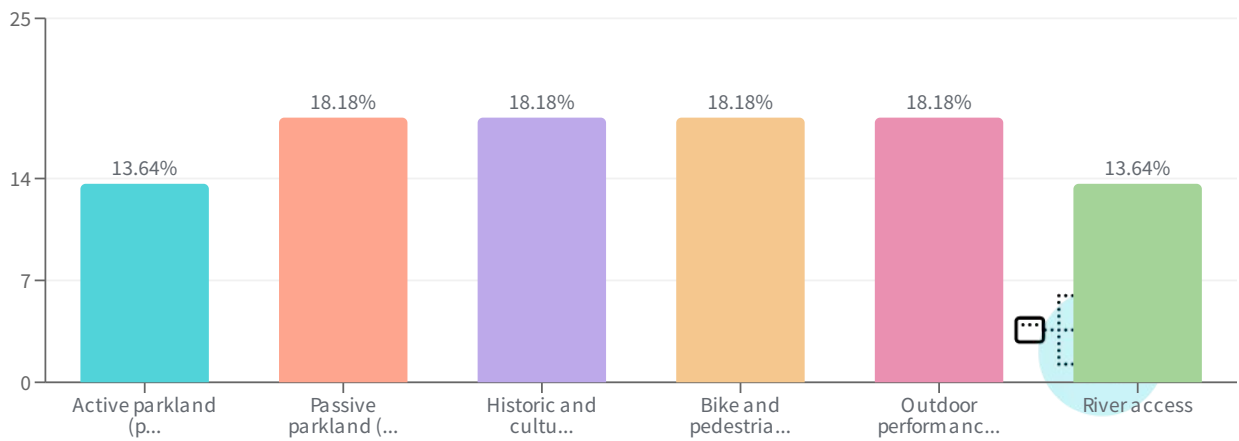
3.85%



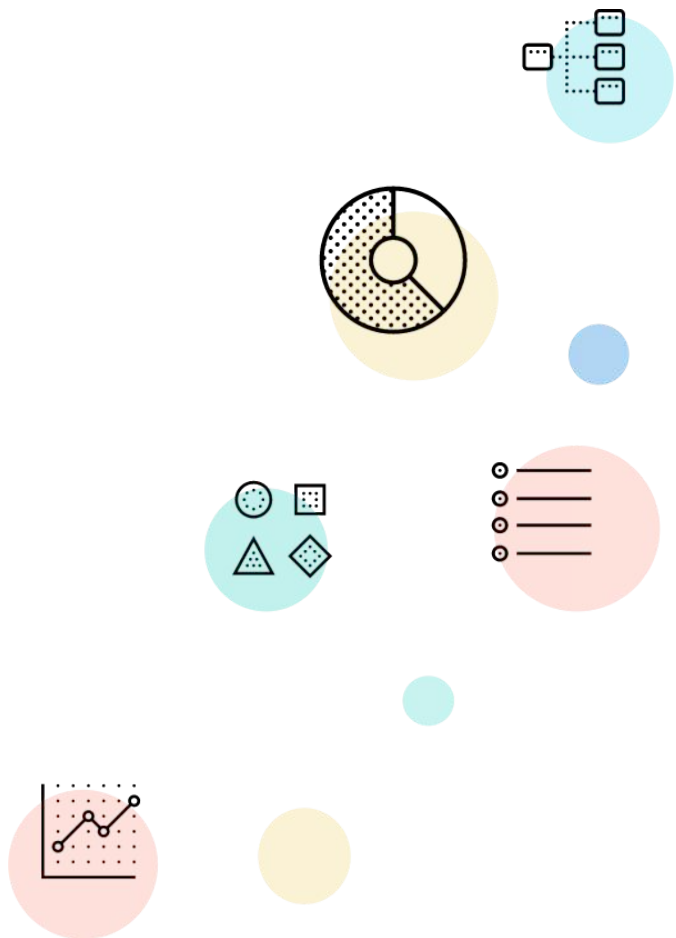
QUESTION 17 | MULTIPLE CHOICE

Open Space/Outdoor Recreation: What specific kind of community recreation space do you want to see in this space? (Please select all that apply. Select none if you do not believe community program/activity space should be part of the reuse of the Canal District)

Answered: **4** Skipped: **0**



ANSWER CHOICES ▾	RESPONSES ▾	RESPONSE PERCENTAGE ▾
Active parkland (playground, climbing structures, pump track)	3	13.64%
Passive parkland (benches, tables, walking paths)	4	18.18%
Historic and cultural interpretive information	4	18.18%
Bike and pedestrian connections between downtown and the Canal District	4	18.18%
Outdoor performance space	4	18.18%
River access	3	13.64%

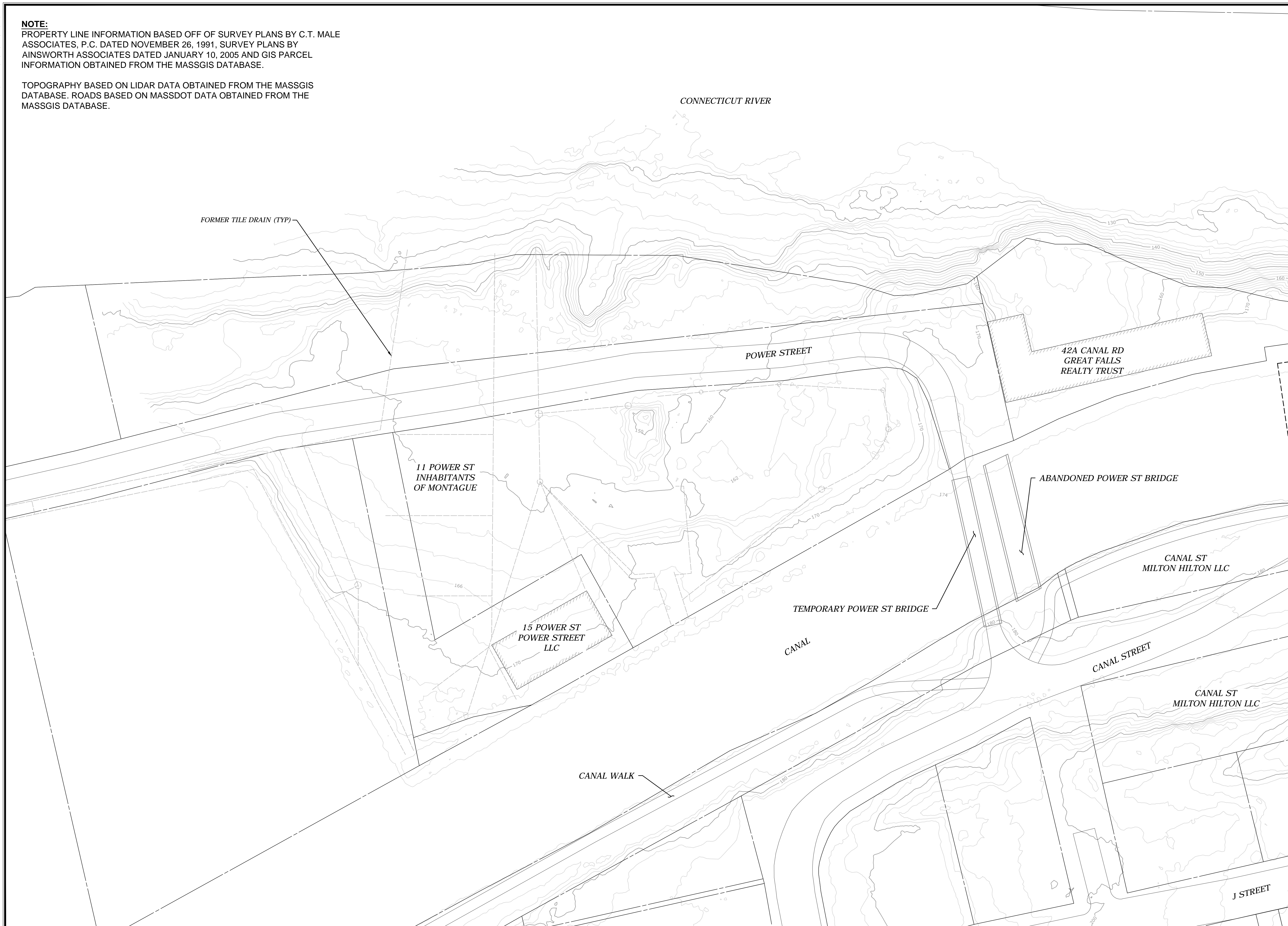


Appendix B

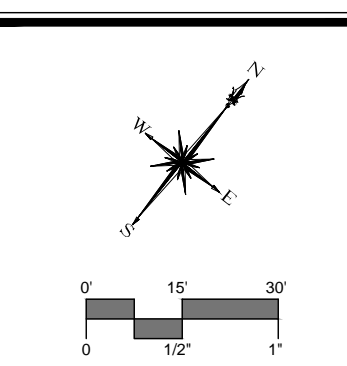
Existing Canal District Site Plan

NOTE:
 PROPERTY LINE INFORMATION BASED OFF OF SURVEY PLANS BY C.T. MALE ASSOCIATES, P.C. DATED NOVEMBER 26, 1991, SURVEY PLANS BY AINSWORTH ASSOCIATES DATED JANUARY 10, 2005 AND GIS PARCEL INFORMATION OBTAINED FROM THE MASSGIS DATABASE.

TOPOGRAPHY BASED ON LIDAR DATA OBTAINED FROM THE MASSGIS DATABASE. ROADS BASED ON MASSDOT DATA OBTAINED FROM THE MASSGIS DATABASE.



MATCHLINE - SEE SHEET SP-2



DESCRIPTION	DATE	BY

NOT FOR CONSTRUCTION

SITE PLAN
 CANAL DISTRICT MASTER PLAN
 POWER STREET & CANAL STREET
 TURNERS FALLS, MASSACHUSETTS

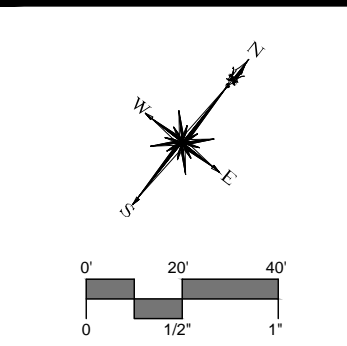
HMM DESIGNED	HMM DRAWN	MRG CHECKED
SCALE 1"=40'		
DATE JUNE 27, 2022		
PROJECT NO. 15898.00026		
SHEET NO. 01 OF 03		

SP-1

DATE PLOTTED: 06/27/2022 10:48:10 AM PLOTTER: HP DesignJet T1100PS



MATCHLINE - SEE SHEET SP-2



SLR
 1350 MAIN STREET, SUITE 1012
 TURNERS FALLS, MA 01376
 413.241.4800
 SLRCONSULTING.COM

DESCRIPTION	DATE	BY

NOT FOR CONSTRUCTION

SITE PLAN
CANAL DISTRICT MASTER PLAN
 POWER STREET & CANAL STREET
 TURNERS FALLS, MASSACHUSETTS

HMM DESIGNED	HMM DRAWN	MRG CHECKED
SCALE 1"=40'		
DATE JUNE 27, 2022		
PROJECT NO. 15898.00026		
SHEET NO. 03 OF 03		

SP-3

Appendix C

Received Documents Log

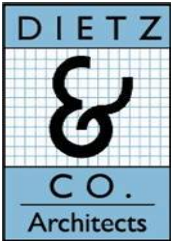
RECEIVED DOCUMENTS LOG

- 2000 History of Access to Strathmore Mill
- 2005 Strathmore Mill Feasibility Study
- 2008 Site Development Assessment
Strathmore Mills Redevelopment
- 2008 42 Canal Road Sewer Study
- 2009 Market Assessment Artist Live-Work Space
- 2011 Evaluation of Existing Bridge over Power
Canal
- 2013 Phase I Environmental Assessment
- 2014 Slum and Blight Inventory for the
Turners Falls Historical Industrial
District
- 2019 Permanent Solution Statement with
Conditions for 8 Canal Road
- 2019 The Industrial Park Masters Thesis
Final Project
- 2020 FirstLight Cabot Camp Carry-In
Launch Path Drawings
- 2021 Easement Plan at Canal Street and
Fifth Street Bridge
- 2021 Greater Springfield Regional
Housing Analysis
- 2021 Turners Falls Canal District North
End Renewal
- 2021 Hydroflower Application Planning Board
Decision
- 2022 Springfield & Pioneer Valley
Housing Phase II
- 2022 Turners Falls Hydroelectric Project
- 2022 Matrix of Easements - Turners Falls



Appendix D

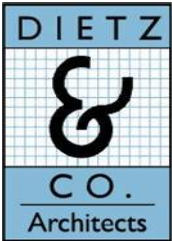
Public Meeting Decision Matrix



CANAL DISTRICT MASTER PLAN PUBLIC MEETING - DECISION MATRIX

9-Nov-22

PUBLIC COMMENT	RESPONSE	RESOLUTION
Can we save more of the Strathmore mill (Zone 3) than what is being depicted? More than the foundations and lower walls.	It would be ideal to save larger portions of the mill, but the design team for the Master Plan was not able to safely access all portions of the building to determine specific pieces to be saved.	Portions of Strathmore mill to be saved and stabilized will be determined during demolition when a structural engineer can access and review building.
What will the water level at the canoe/kayak access (Zone 1) look like in the future?	FERC relicensing is currently underway which will instill new regulations for water levels at this location in the Connecticut River.	Following FERC relicensing, the water levels will vary based on season but will generally see an increase in water levels.
What will the future use of the coal silo (Zone 2) ultimately be? Options such as a solar pendulum, illuminating, art installation, and climbing structure were mentioned.	The Master Plan study recommends the maintenance of the silo and cleaning of the surrounding site in preparation for any future use the Town may decide to use the coal silo for.	Future use of the coal silo to be determined following a RFP and study. Public to submit ideas to Town Planner and attend Public meetings to aid in decision making.
How can we know if the housing project (Zone 5) will maintain a visual language with the town?	Current design team cannot speak to the design of the future housing project as it is ultimately up the architect who works on this project to perform best practices.	Public to take part in developing design guidelines to be used in future housing project outcome.
Is it possible that 42 Canal Road can be utilized as an amenity for 11 Power Street? (Zone 5)	Yes, however, 42 Canal Road is currently privately held and would require that property be acquired by the Town.	Town to keep tabs on 42 Canal Road and any future opportunities that may arise.
Can the pathways and zones contain some elements such as a botanical exhibition or sculpture gardens?	Yes, the strategy of the Master Plan was to provide a clean and safe space for the Town to further develop as they see fit.	Additions to Zones 2 and 3 to be determined following RFPs and studies. Public to submit ideas to Town Planner and attend Public meetings to aid in decision making.



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PUBLIC MEETING - DECISION MATRIX

<p>Reuse of bricks from Strathmore to wrap coal silo (Zone 2) or build a new structure.</p>	<p>The bricks of Strathmore mill are over 100 years old and many of them depict signs of severe deterioration and water damage. It is unlikely most of the bricks can be used any significantly structural way.</p>	<p>Most bricks to be utilized for breaking down and regrading. Town can explore reusing some of the bricks for an art installation.</p>
<p>Reuse old equipment from Strathmore mill? (i.e. the boiler)</p>	<p>Yes, the reuse of old equipment such as the boiler from the Strathmore mill is a design strategy that would aid in interpreting the industrial history of the site.</p>	<p>During demolition, equipment to be salvaged and stored for future work when possible.</p>

Appendix E

Canal District Master Plan -
Investigation Memorandum

**INVESTIGATION PHASE MEMORANDUM FOR
CANAL DISTRICT MASTER PLAN**

**TURNERS FALLS, MA
FINAL REPORT: JULY 21, 2022**

Prepared For:
MassDevelopment
1350 Main Street,
Springfield, MA 01103
+
Montague Planning and Conservation Department
1 Avenue A,
Turners Falls, MA 01376



Prepared By:
Dietz & Company Architects, Inc.
55 Frank B Murray Street, Suite 201
Springfield, MA 01103

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 - 1.2 MassDevelopment
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 - 3.4 Building Assessment

- 4.0 Opportunities and Constraints**
 - 4.1 Primary and Secondary Markets Study
 - 4.2 Future Options Considerations

- 5.0 Appendices**
 - A Turners Falls Canal District Market Analysis by Camoin Associates
 - B Existing Canal District Site Plan by SLR Consulting
 - C Received Documents Log

1.0 ACKNOWLEDGEMENTS

The following individuals contributed to this report:

1.1 Montague Planning and Conservation Department

Walter Ramsey AICP, Montague Town Planner

Montague Planning Board

Ronald Sicard, Chair
Elizabeth Irving, Vice Chair
George Cooke, Member
Bob Obear, Member
Matthew Lord, Member

1.2 MassDevelopment

Claire O'Neill, Senior Vice President of Real Estate Planning
Ben Murphy, Program Manager of Real Estate Services

1.3 Design Team

Dietz and Company Architects, Inc., Architect

Kerry Dietz AIA, Managing Principal
Lee Morrissette AIA, Principal

PLACE Alliance, Master Planner and Landscape Architect

Andrew Bohne, Principal Master Planner and Landscape Architect

SLR Consulting, Civil Engineer

Michael Gagnon, Principal Civil Engineer

Camoin Associates, Economic and Market Analyst

Rachel Selsky, Vice President



2.0 EXECUTIVE SUMMARY

2.1 Project Introduction

The Canal District of Turners Falls, Massachusetts, was a part of a planned industrial mill town that was founded in the late 19th century. Situated along the Connecticut River, the site has waterpower from a bypass canal for industrial uses including a cutlery company, paper company, and co-generation power plant. The river powered six of these mills for over a century and continues to be a key hydropower generation facility in Massachusetts. See Image 2.1A for Study Area Map.

Within the last 80 years, however, the town has transitioned away from an industrial economy to a service economy, leaving much of the properties on the site underutilized or vacant. Many of the remaining mill buildings and utilities have degraded, due to lack of maintenance, into a state of distress. By 2014, the site had been designated as a “Slum and Blighted Area” by the Massachusetts Department of Housing and Economic Development. In addition, portions of the site contain construction debris and various other waste materials from previous demolition work. As the Canal District is a narrow island that sits in between the Connecticut River (to the north) and the hydro-power canal (to the south), the only access the site is by bridge. Most of the various pedestrian and vehicular bridges that connect downtown Turners Falls to the site are closed or have characteristics that severely limit their use.

It was determined by MassDevelopment and the Town of Montague that the Canal District presents an opportunity to reactivate the historic site and riverfront. The Canal District Master Plan study aims to provide options for future use of the Canal District in an effort to revitalize the site that would integrate with downtown Turners Falls and acknowledge the multiple industrial and cultural histories of the site. This investigation memorandum is intended to provide a brief summary of existing conditions of the Canal District of Turners

Falls, Massachusetts. These findings will be used for the purpose of evaluating the current conditions and developing short-term to long-term recommendations for the site.

In March 2022, the design team began their investigations. The following sections consist of summaries of the team’s findings during the investigation phase and an analysis of opportunities and constraints for the property in any future design work. The characteristics evaluated during the investigation phase include:

- Utilities and Infrastructure: Focusing on the conditions of existing roadways, bridges, parking, sewer, water, electric, and gas that would determine the feasibility of various potential uses on the site.
- Property and Easements: Focusing on a review of the property boundaries, easements, rights-of-ways that may impact redevelopment potential.
- Environmental: Review of environmental restrictions and hazardous materials.
- Building Assessments: Review of the existing buildings on the site to determine if the remaining portions of the buildings can be repurposed in future design work.
- Primary and Secondary Markets: Analysis to review the potential commercial and industrial reuses of the site.

The investigation of existing conditions described in this memorandum was prepared based on the following primary sources of information:

- Documents provided by MassDevelopment
- Documents provided by Montague Planning and Conservation Department
- Information provided during design team meetings on 03/15/2022, 04/22/2022, and 05/06/2022.
- Site visits by the design team on 3/24/2022 and 5/18/2022.

Note that detailed field testing, investigative demolition, and comprehensive surveys or structural assessments were not performed



2.2B Study Area Map

as part of this investigation and subsequent discussion is based only on the information and site visits noted previously.

2.2 Findings

The information collected for the Canal District has been consolidated and summarized in the following section, [3.0 – Key Observations](#). These findings assisted the design team in organizing a series of opportunities and constraints on the site in Section 4.0 that will be utilized in the following future Visioning Phase for the master plan.

With key observations of the existing conditions of the site and market, the team was able to consider future use groups that the district

could attract. The five uses considered, based on the market analysis, were business, residential, assembly (community gathering), industrial/storage, and non-occupied. Each of these use groups have a series of requirements that are necessary to make them feasible on the island. In overlapping the use requirements and the existing site conditions, the design team was able to determine five zones on the site and the best use or action required for that zone.

The summary of those five zones can be viewed in Table 2.2A and can be visually referenced in Image 2.2B.

In addition to this memorandum of the Investigation Phase, the design team developed existing site plan drawings which can be viewed in Appendix B.

Zone	Description	Use Opportunities
Zone 1		
Northern-most point of 8 Canal Road	Direct access to riverfront.	Activated recreational zone.
Zone 2		
Southern portion of 8 Canal Road	Vacant lot with vegetation and remaining foundations with very restricted access.	Use as a naturalized zone. Potential for a quiet reflection space and place to display public art.
Zone 3		
20 Canal Road, Most of Strathmore Mill Complex	Former mill facility with limited access. Buildings in distress.	Could perform selective demolition and create a space for historic interpretation of Turners Falls.
Zone 4		
Building 11 of 20 Canal Road	Most feasible building for reuse/repurposing.	Could be used as an industry or storage use.
Zone 5		
11 Power Street	Most options for access (vehicular and public).	Space allocated for residential use.

2.2A Key Findings Table



2.2B Zone Key Plan

3.0 KEY OBSERVATIONS

3.1 Utilities and Infrastructure

Site Utilities

Utilities from the Power Street corridor service the 42 Canal Road site including water, sanitary sewer, gas, and overhead electric. Water, sanitary sewer, gas, and overhead power are connected to the Southworth paper mill at 36 Canal Road from Turners Falls Road.

There is an existing water distribution system, primarily for fire protection at the 20 Canal Road and 8 Canal Road sites however, it was abandoned several years ago. The existing sanitary sewer system that includes a pumphouse located between 36 Canal Road and 20 Canal Road also has been decommissioned for several years.

Except for 42 Canal Road and 36 Canal Road, there is no gas service to the remainder of the site. Telecommunication services essentially do not exist for the vacant buildings. The hydropower facility at 16 Canal Road is a limited hydroelectric power facility with service to an overhead electric service that spans the channel to a substation located on 2nd Street.

It is questionable whether the existing water and sanitary sewer infrastructure could be utilized for future development given their age and duration of abandonment. All existing site utilities would require extensive evaluation and testing in support of future development with respect to capacity and meeting building code requirements.

Infrastructure and Access

Pedestrian Access

Pedestrian access in the Canal District is primarily along the Canalside Rail Trail, which runs along the southern edge of the power canal on the former rail bed. The 3.7-mile trail runs through the entire Canal District and provides views to

the project area looking across the canal. There is one pedestrian bridge crossing over the canal near Avenue A that is owned by First Light Power, which traverses the canal and provides riverfront access on the eastern edge of the island. Protective fencing and private ownership prohibit pedestrian access to the western portion of the island due to safety and liability concerns. There is no public pedestrian access to the island from Turners Falls Road. There is Pedestrian access to 11 Power Street by crossing over the Power Street bridge which does not have sidewalks or pedestrian separation from vehicular traffic. The 11th Street bridge, which is outside the project area, does have sidewalks and is a more indirect route to access the site.

River access in the Canal District is limited to one location that is offered on First Light-owned property. To access this section of the river, there is a pedestrian bridge crossing the canal behind the Great Falls Discovery Center and the Canalside Rail Trail. This river access is just downstream from the fish ladder and looks upstream towards the Turners Falls Dam and across the river, including Peskeomskut Island, which is in the middle of the river. This public river access is the proposed site for future investment and improvements by First Light for a canoe and kayak launch.

Vehicular Access

Vehicular access throughout the Canal District is driven by private ownership and easements. Limited access is allowed along a 10-foot-wide easement that runs along the canal wall edge and the narrow road is confined by the historic mill buildings that define the other side of the roadway. This narrow band of road is representative of the time this area was developed and oriented around rail freight and pre-automobile. The existing easement is for industrial uses and does not allow for public access. It is too narrow for public vehicular access and would also create safety issues, combining vehicular and pedestrian movement together.

11 Power Street is accessible from the Power

Street bridge from Canal Street or the 11th Street bridge which is west of the site and connects to a small neighborhood with a handful of side streets that connect to 10th street, which becomes Power Street.

Emergency Access

Emergency access to the island is limited and a critical concern for any potential redevelopment and future uses in this area. The 10-foot-wide Canal Road easement is a narrow road with very limited space for larger vehicles to turn around. Deteriorating building and structural conditions of 20 and 8 Canal Street pose safety concerns and are fenced off and boarded up to prohibit any access to these areas. The First Light pedestrian bridge on the rear of the industrial island is rated for vehicular access, however due to the size of the bridge, the types of vehicles it could manage is limited. 11 Power Street is accessible for emergency vehicles from the Power Street bridge from Canal Street or the 11th Street Bridge.

Bridges / Crossings

There are 8 bridges over the canal, 4 vehicular bridges, 3 pedestrian crossings, and an old railroad crossing. Turners Falls Road vehicular crossing is a temporary bridge that is currently proposed for replacement in the next few years. The Power Street Bridge is also a temporary bridge that is also proposed for replacement in the coming years. The former Power Street bridge remains in place and is fenced off for safety reasons. The 11th Street bridge is a vehicular bridge with sidewalks and is in good condition.

The First Light pedestrian bridge is located at the rear of Canal Street on the industrial island. This crossing is also rated for emergency vehicle access and is the only pedestrian access to the site. There is an elevated pedestrian crossing from 2nd Street to 20 Canal Road that is decommissioned and is slated for removal. The crossing is fenced off for safety concerns. The third pedestrian crossing runs adjacent to Turners Falls Road and is also closed and

fenced off due to safety concerns and is slated for removal.

There is a railroad crossing between Power Street and 11th street that used to provide rail access to both sides of the canal. This crossing is also closed and no longer in use.

See Image 3.1A for a diagram depicting existing site access.

3.2 Property and Easement Rights

The site is within the Turners Falls Historic Canal district in the Village of Turners Falls in Montague, Massachusetts. The specific parcels in this study include 11 Power Street, and 8, 20, 36, and 42 Canal Street.

Property

The Canal District contains a number of properties that vary in ownership. Based on research of Montague Assessor's record information, property ownership of the project area parcels is as follows:

Address	Owner	Assessors Record #	Current Use
16 Canal Road	Turners Falls Hydro, LLC	Property ID: 02-0-1C	Small active hydropower facility
36 Canal Road	Milton Hilton, LLC	Property ID: 03-0-002	Portion of property planned for a cannabis grow facility. Opportunity for more uses within space.
42A Canal Road	Great Falls Realty Trust	Property ID: 03-01-086	Privately owned structure
15 Power Street	Power Street, LLC	Property ID: 03-0-089	Privately owned structure
8 Canal Road	Inhabitants of Montague	Property ID: 02-0-06	Old coal silo and concrete structure. Viable for some reuse, with stabilization needed to ensure safety.
20 Canal Road	Inhabitants of Montague	Property ID: 02-0-01	Former Strathmore Paper Mill building, very poor condition, unsafe and is currently boarded off and fenced off to prohibit access.
11 Power Street	Inhabitants of Montague	Property ID: 03-0-027	Former site of Griswold Mill slated for redevelopment as affordable housing.
Rear Canal Road	First Light MA Hydro, LLC	Property ID: 02-0-04	Canoe kayak launch, old cellar structures to be closed off from access.
Canal Road, Lot 05	Milton Hilton, LLC	Property ID: 02-0-05	Land adjacent to 15 Power Street zoned for industrial use.
Canal Road, Lot 07	Milton Hilton, LLC	Property ID: 02-0-07	Steel industrial, utility building
Rear Canal Road	First Light MA Hydro, LLC	Property ID: 02-0-03	Land parcel along Connecticut Road, behind 8 Canal Road. River access
Rear Canal Road	Milton Hilton, LLC	Property ID: 02-0-1B	Water treatment plant on this land parcel

The privately owned properties on the site will play a major role in determining which areas will be available for future design work in addition to understanding physical and visual barriers. Properties owned by the town will be the focus for the design team in the Visioning Phase of the master plan, and their characteristics will determine all future use potential on each site.

Easement Rights

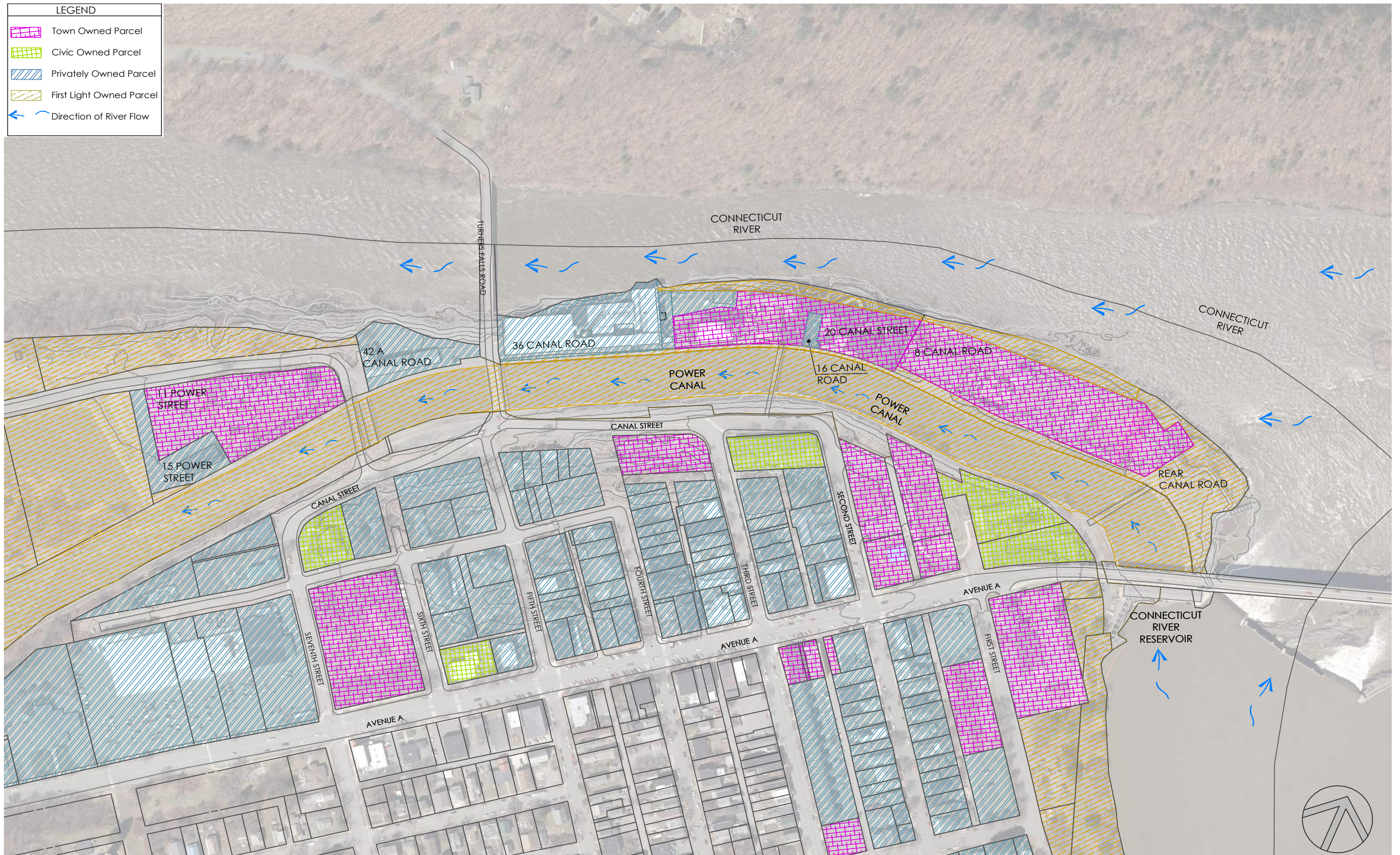
The Canal District also has a variety of easements related to the canal and its infrastructure, many

of which are remnants of the former mills' industrial energy needs that are no longer necessary. As stated in a previous section there is an access road and tunnel on the site that act as the two key easements on the site. The primary easement to note is the 10-foot-wide easement that runs along the northern canal wall edge that was once the Mill Owners' railroad track. There was a former railroad spur that ran the entire length of the complex along the canal wall. This easement provided access to the properties and are for industry uses. This easement does not currently allow for public

access to the sites.

There is an approximately 12-foot-wide easement in a tunnel through the basement of the building located at 36 Canal Road. The entrance of the tunnel is at the southeastern corner of the building by Turners Falls Road and exits the building at its northeastern corner.

These easements will play a significant role in how the design team can imagine future use of the district regarding access. See Image 3.2A for a diagram depicting existing property ownership and easements.



3.2A Existing Property and Easement Diagram

3.3 Environmental

Natural and Ecological Context

The Connecticut River defines the western edge of the project area. The river's presence has defined this area and has been used to harness energy that allowed for the industrial development of the area and is still utilized to generate power. The river is in a valley with steep slopes on both sides. Topography from the river to the downtown area changes significantly, with typically 40 feet of grade change between Avenue A and Canal Road. East of Avenue A the River is dammed and creates a large reservoir that is controlled to feed the canal and generate power. River flows below the dam fluctuate and at times the river's width is narrower than its natural conditions would be, exposing bedrock, as well as drier than it would otherwise be during regular unrestricted flows. Even with these impediments, the river is still a dynamic system that provides habitat and is a natural resource that is protected by environmental regulations. Natural Heritage has defined the river and its banks as a place that is inhabited by rare and endangered species and needs additional review to ensure any projects do not harm or limit the area these known species need to survive. Vegetation is typical of riverine conditions and consists of riparian forest and wetland species on the islands within the river and its banks. Overall, vegetation includes large canopy shade trees and understory vegetation, and areas that are beginning to naturalize are a mix of native and opportunistic invasive species.

Hydropower defines the area, from the Turners Falls Dam to the power canal and associated canal reservoirs downstream. The dams restrict river flows downstream to provide adequate flow through the canal for power generation. There are active and historic power intakes and outfalls that run through the buildings. Some are no longer in use, and others need further investigation to understand what infrastructure remains in place. Within the project area there is a standalone hydropower facility at 16 Canal Road. 20 Canal Road also has intake that runs underneath the building and drains into the

river. See Image 3.3A for a diagram depicting existing natural resource conditions.

Environmental Protection

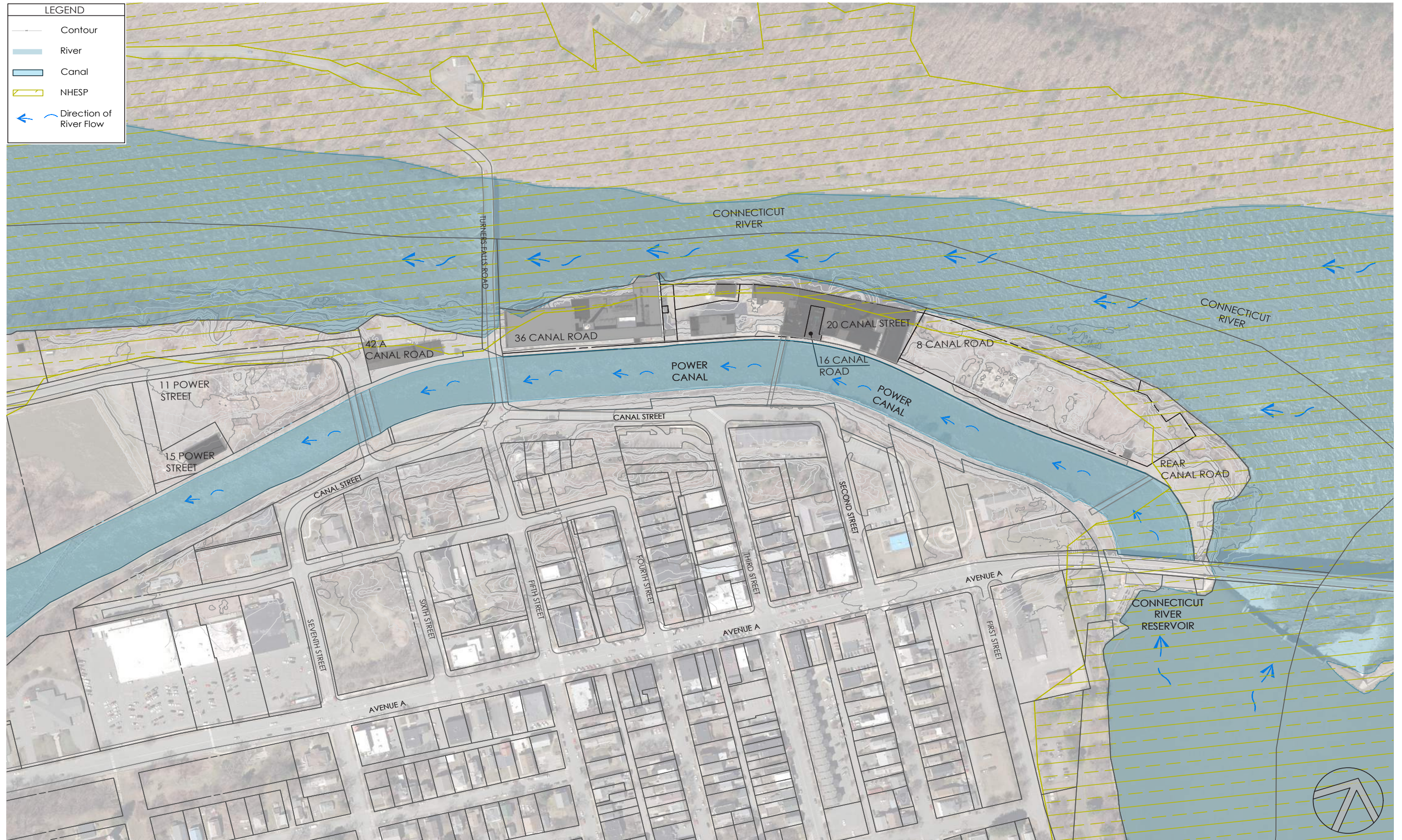
The project site runs along the eastern bank of the Connecticut River and therefore, virtually the entire project area is within the Massachusetts Wetlands Protection Act (WPA) 200-foot Riverfront Protection area. As such, any future development of the site would necessitate regulatory review under the WPA pursuant to 310 CMR 10.00.

Based on Massachusetts Information Geographic System (MassGIS) data layer information, the westerly fringes of the project area are within mapped Natural Heritage and Endangered Species Program (NHESP) Priority Habitats of Rare Species and Estimated Habitats of Rare Wildlife. Future development of the site will require NHESP review for potential impacts or takes of rare species and wildlife.

Hazardous Materials

The district, with its long history of industrial use, has consequently contained environmental contaminants. In 2020, a site wide abatement of hazardous materials / universal waste for the Strathmore Mill (20 Canal Road) was completed by Tighe & Bond and Air Quality Experts, Inc. The work completed in this project passed post-abatement visual inspection and air sample testing for asbestos. The remediation project also included the collection and disposal of other universal wastes such as containerized oils, light tubes, ballasts, and mercury sources.

There remain other portions of the canal district that have not seen such abatement project and also contain remnants of building and industrial material for structures that are no longer standing. It is recommended that environmental studies and abatement assessments for other portions of the site be required before any future work.



3.3A Existing Natural Resources Diagram

3.4 Building Assessment

As stated previously, the design team investigated the condition of both the site and its buildings, specifically the Strathmore Mill Complex, to determine whether the structures would be able to be restored and repurposed in any future work. The evaluation of the Strathmore Mill was based on previous studies, the team's experience with similar structures, photographic records, and visual observations done during site visits. Site observations were confined to select locations of the property due to access and safety concerns, and therefore this evaluation is not considered a comprehensive survey.

The Strathmore Mill Complex is located at 20 Canal Road. The facility of ten buildings, most of which are interconnected, were primarily constructed in the late 19th century to house a paper mill company, and ran until 1994. The mill has had several owners during its lifetime, but most of the property is now unoccupied. The remaining use is a hydroelectric generating plant in Building 9 owned and operated by a private company. These brick masonry buildings range in height from four to six stories and have a floor area of approximately 245,000 square feet.

A general evaluation of each building was undertaken, noting the general conditions of the major structural elements. These components include:

- Building Envelope: roofs, exterior walls, windows, and foundations
- Building Systems: electricity, plumbing, mechanical, and fire protection
- Framing Integrity
- Floors

Note that not all portions of the buildings were observed due to the safety of the team.

Buildings 1-8 at the facility generally appear to be in poor condition and can be considered in a failing state. Building 9 is privately owned, and was in accessible for observation. Building

11 appears to be in fair condition. For further description of the condition and next steps of each building on the Strathmore Mill Complex, see Table 3.4A.

Typical problems for all the buildings include extensive mortar decay in brickwork, cracks and openings on various floors, failed masonry window arches, moss growing on the exterior walls and foundations depicting water infiltration, deterioration of wood ceilings, dated and depleted membrane roofing systems, cracks along the envelope, and portions of the brickwork in a crumbled state leaving the interior exposed to outside elements. Buildings 1, 2, and 11 also exhibit signs of fire damage as a consequence of Building 10 burning down in 2007 due to arson.

In previous studies conducted in 2005 and 2008, the buildings were evaluated to be in fair to poor condition which depicted select areas of deterioration, with signs of water infiltration throughout. Tighe and Bond's structural analysis within the 2005 study noted specific problem areas, and provided schematic-level demolition plans for portions of the mill complex. These demolition plans focused on removing portions buildings 5, 6, and 8 and providing a new retaining wall. It is important to note that this plan was completed before the fire that destroyed building 10 and consequently left portions of the complex with damage and exposure that it did not previously have. With the 2014 designation of the site as blighted by the Massachusetts Department of Housing and Community Development (DHCD), it is clear that the building envelopes are exhibiting an escalation of deterioration due to lack of maintenance and disinvestment. These exterior walls are the primary, structural elements for these load bearing, brick masonry buildings as they maintain the integrity of the interior wood framing, floor systems and roof systems. As the envelope appears to be in a state of disrepair for large portions of the site, it is unlikely that reuse of the whole property is possible. Building 11 appears to be in the best position for renovation and reuse as its envelope appears to have maintained structural integrity

Building Number	Condition	Next Step	Notes
1	Poor	Partial / Full Demolition	Five story, brick masonry building. Severe mortar and brick deterioration due to water infiltration at river-facing side. Cracks within floor assembly. Failing vaulting and window arches.
2	Poor	Partial / Full Demolition	Five story, brick masonry building. Severe mortar and brick deterioration due to water infiltration at river-facing side. Fifth level floor and framing depicting fire damage. General floor damage and collapsing.
3	Poor	Partial / Full Demolition	Five story, brick masonry building. Severe mortar and brick deterioration due to water infiltration at river-facing side. Deterioration of wood ceiling due to moisture. Roof beams showing signs of water damage.
4	Poor	Partial / Full Demolition	Four story, brick masonry building. Mortar joints deteriorated and soft in many locations throughout building.
5	Poor	Partial / Full Demolition	Five story, brick masonry building. Mortar joints deteriorated and soft in many locations throughout building. Aged roof assembly.
6	Poor	Partial / Full Demolition	Four story, brick masonry building. Mortar joints deteriorated and soft in many locations throughout building. Failing roof assembly.
7	Poor	Partial / Full Demolition	Four story, brick masonry building. Deteriorated mortar joints and portions of brick from exterior walls were missing/ displaced. Failing roof assembly.
8	Poor	Partial / Full Demolition	Two story, brick masonry building. Mortar joints deteriorated and soft in many locations throughout building. Wood flooring is warped and showing water damage. Steel cables supporting second level installed to prevent the columns shifting. Aged roof assembly. Remainder of smoke stack that was partially demolished down the second level is deteriorated. Outer wythe of brick masonry is falling out. Partially inaccessible.
9	Unknown, Exterior Appears Stable	Assessment & Stabilization	Four story, brick masonry building. Currently houses Eagle Creek Hydro Plant. Not observed during site visit.

3.4A Strathmore Mill Complex Building Matrix

that is not as apparent at other buildings on the site. Previous to any work being completed at this property, the design team recommends that a comprehensive, structural survey of the building be performed by a structural engineer to determine which portions of the facility are safe for reuse or stabilization. See Appendix C for Existing Conditions Photos of the Strathmore Mill Complex.



1 Building 3 Deteriorated Brick and Mortar



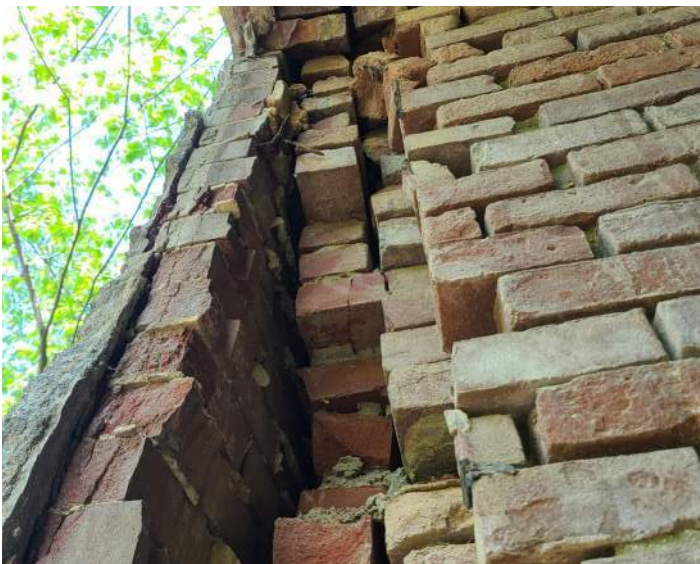
2 Building 1 Failing Window Arches



3 Building Exterior Wall's Outer Wythe Falling Out of Base



4 Building 11 Addition Collapsed Roof



5 Building 2 Deteriorated Exterior Brick Wall System



6 Building 1 Collapsed Floor System



7 Building 5 Exterior Brick Failure



8 Building 7 & 8 Deteriorated Exterior Walls



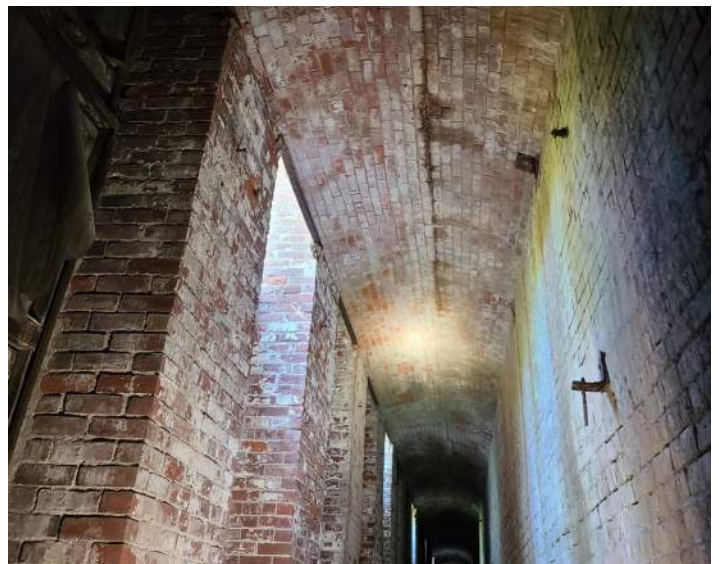
9 Building 1 Failing Window Arches and Elevator Shaft



10 Building 6 Crumbling Brick and Utilities



11 Building 2 Deteriorated Exterior Brick Wall System at River-side



12 Building 3 Failing Vault



13 Building 2 Collapsed Ceiling



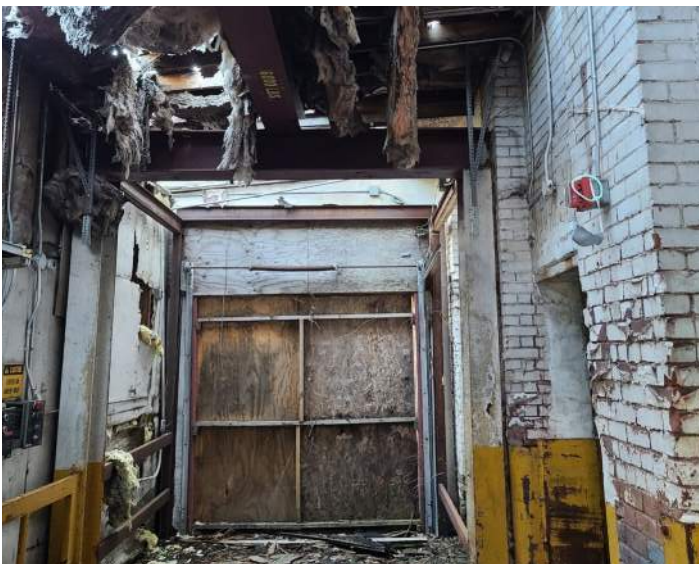
14 Building 1 Wall of Elevator Shaft Separating



15 Building 11 Failing Ceiling and Deteriorated Interior Finishes



16 Building 11 Floor Assembly Failing at Corners



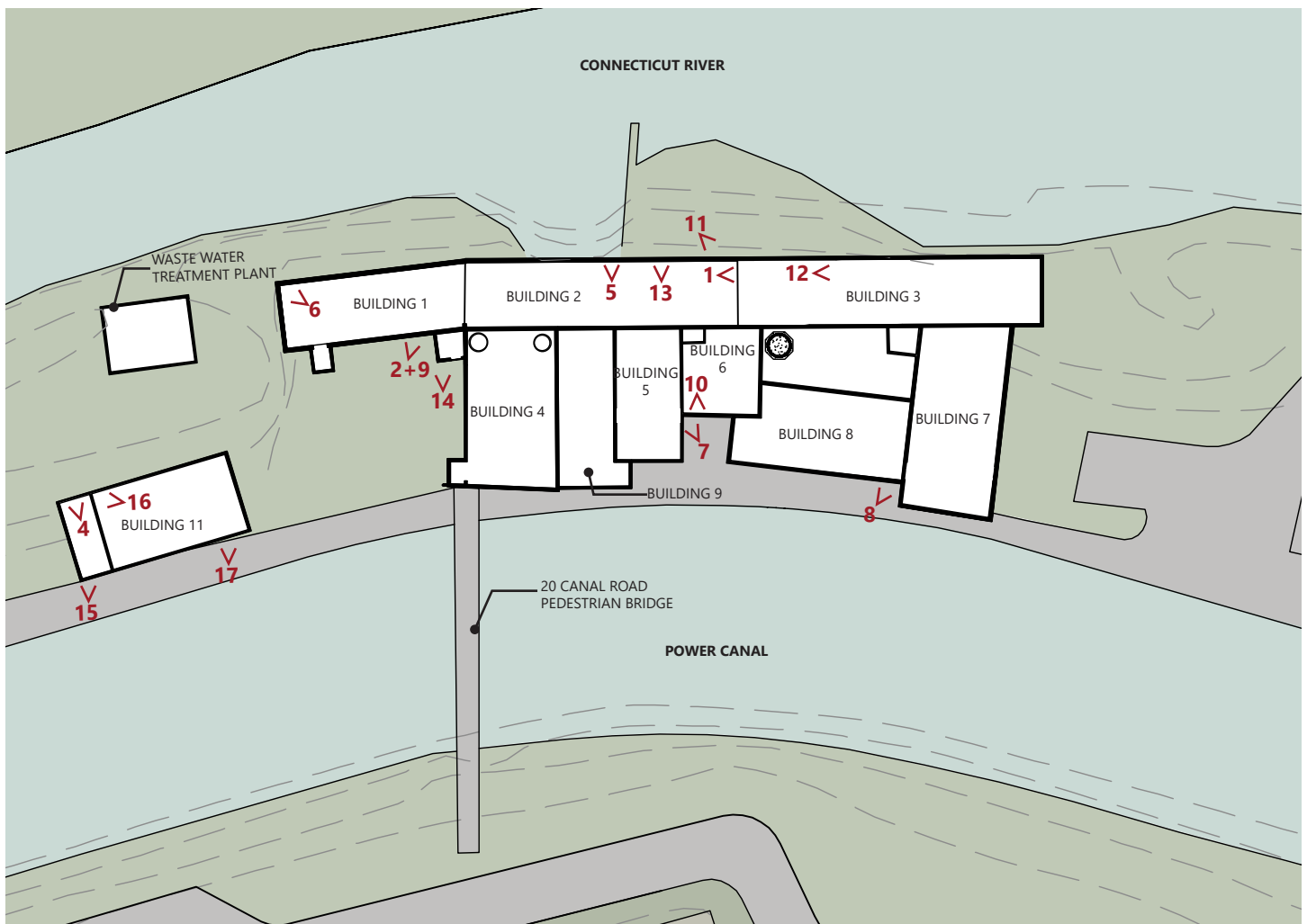
17 Building 11 Loading Dock

It is important to note also that accessibility and general egress issues were considered in the assessment. Basic access to the site is fairly limited. The narrow, 10-foot easement that runs along the northern edge of the island is only permitted for industrial use. Public access is not provided through this easement, and therefore it is likely any potential future use will be limited due to the access restrictions. The pedestrian footbridge that stretches from downtown Turners Falls (in between Second and Third Street) and abuts the fourth level of Building 4 is closed and no longer available for public use. The bridge provided utility connections across the canal to the mill buildings from the downtown area. Those utilities have also been disconnected as part of the bridge's abandonment. The buildings would also require significant upgrades to meet current code

to make the building fit for occupancy. ADA Accessibility standards were not implemented until the late 20th century and the facility currently does not comply to its requirements.

All building systems were disconnected and non-functional with the possible exception of a building fire alarm system. Due to the deterioration of the buildings in general, reuse of the utilities on site is likely not feasible. New connections and system replacement would likely be required for any future occupied use.

See Image 3.4B for Existing Building Locations at the Strathmore Mill Complex.



3.4B Strathmore Mill Facility Key Plan (Zone 3 and 4)

4.0 OPPORTUNITIES AND CONSTRAINTS

4.1 Market Study

As part of the Investigation Phase for the Turners Falls Canal District Master Plan, Camoin Associates conducted a market analysis to draw preliminary conclusions about existing and potential demand in the Town of Montague and surrounding region. This analysis includes the following items:

- Demographic Profile
- Economic Profile
- Residential Market
- Retail/Commercial Market
- Industrial Market

This full report describing these findings can be found in Appendix A of this memorandum.

Through data review of the market analysis, public surveys and discussions with local stakeholders, the need and desire for additional residential space stands out as one of the foremost priorities for any future Canal District development. Affordability is an issue with nearly half of all households spending over 30% of their income on housing. The need for new residential construction is underscored by the vintage of the existing building stock where median age has reached 70 years. The specific type of new housing is less defined. Redevelopment of the existing mills may lend itself to artist or craft work/loft space – possibly including a gallery. This would certainly address the expressed goal of maintaining the unique character within the community. Addressing the issue of affordability, however, shifts the focus to workforce housing. Although local rental rates register substantially below the statewide average, the same is true for incomes. Creation of new reasonably priced units on the site would in turn facilitate the ability of people to live in the community where they work. Alternatively, the area has also demonstrated the marketability of for-sale multifamily condominiums. This type of development would likely prove to be the most

easily financed.

As for commercial development, surveys reveal a desire for additional retail space and that need is born out in analyzing local spending patterns. Most notable is the area's ability to support new dining capacity which would serve as a market driven opportunity while also facilitating connections within the community. Also showing potential are personal services such as hair and nail salons and dry cleaners. Development of office or flex space has the potential to serve as an incubator for new businesses. Adding shared use maker-space or a commercial kitchen has also been shown to promote entrepreneurial start-up companies in their early days.

For the northern area of the Canal District which faces significant constraints to vehicular access, a separate commercial application may be the installation of a battery energy storage facility. The dam, along the canal, produces a steady flow of electric power for First Light Energy who operates and maintains this generating capacity. Utility-scale electric storage is charged when consumers and business require less power but can then be drawn from during times of peak demand.

Less commercially driven, community-oriented uses which would be welcome include childcare, parkland, development of a historical interpretive center, outdoor perform space, and/or river access.

Aside from the physical and site-specific limitations found within the Canal District, broader economic and demographics constraints play a role in the viability of any proposed redevelopment. The town, along with the larger region, has seen declining population and stagnant levels of employment. Income growth fall well short of the statewide pace and the community is aging. Market oriented responses to the redevelopment on the island will need to remain cognizant of these challenges. Addressing community driven needs could also require public sector support and the securing of financing.

4.2 Future Use Considerations

Based on the potential use options provided by the market analysis, the design team examined a few basic use groups and the requirements they would need to make that use feasible. The five uses explored were business, residential, assembly, industrial/storage, and non-occupied which ranged from most restrictive to least. The requirements outlined in Image 4.2A ultimately aided the team in determining how the site's various conditions would provide opportunities or create limitations for different uses.

As the design team began moving towards the Visioning Phase of the Master Plan, a series of opportunities and constraints based on the existing conditions of the site and with the requirements of various use options was determined. The characteristics of the site that were considered included:

- Vehicular Access
- Public Access

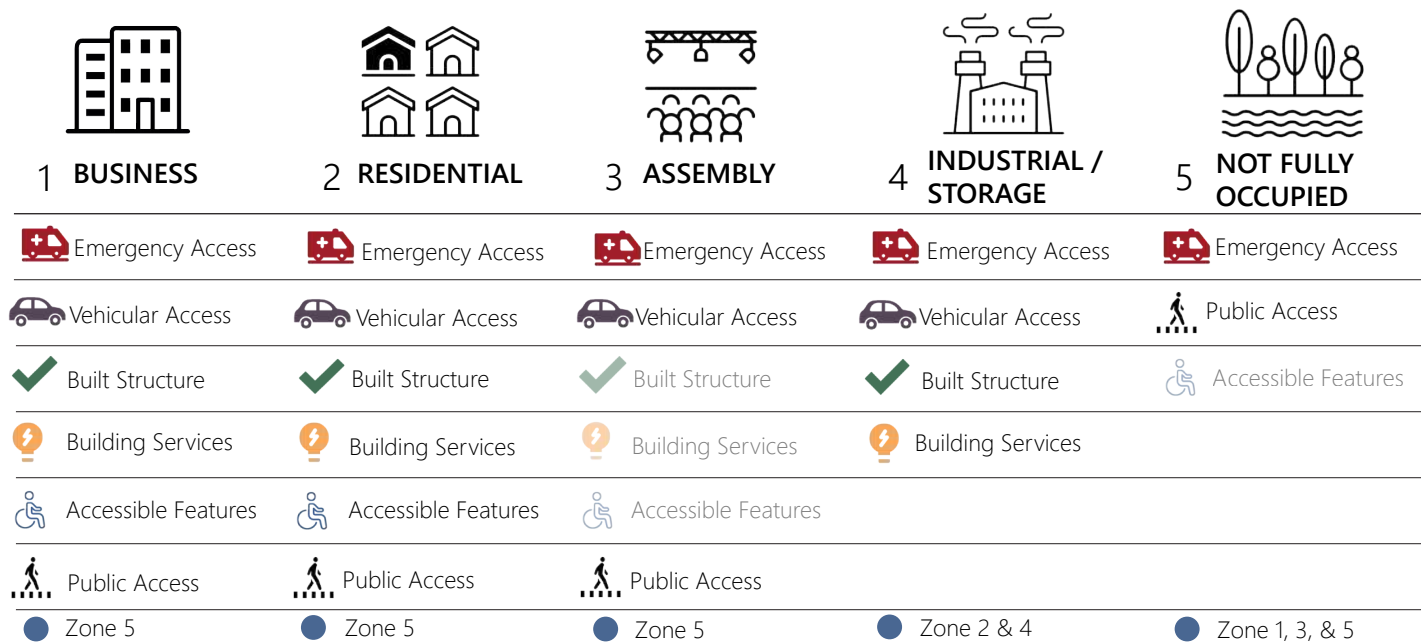
- Water Access
- Existing Building Conditions
- Existing Site Conditions
- Views

These characteristics aided the team in designating five different zones on the Canal District and the most likely use for that zone. These zones can be viewed on Image 4.2B and will be described in the following paragraphs.

Zone 1

Located at the most northern portion of the site (also part of 8 Canal Road), Zone 1 provides the greatest opportunity for water access. This area already has public river access, and has proposed improvements by First Light for a canoe and kayak launch. In addition, because it has the only remaining pedestrian footbridge (First Light pedestrian bridge), it will likely act as the entry point for pedestrians for the remainder of the site. The location of this zone will provide users the opportunity to access

TURNERS FALLS CANAL DISTRICT FUTURE USE OPTIONS



4.2A Use Characteristics Diagram

views looking upstream towards the Turners Falls Dam and Peskeomskut Island. This zone, consequently, may become a very activated area for recreational use.

Zone 2

Located adjacent to Zone 1 (and is the remaining portion of 8 Canal Road) is the area of the site that has very few remaining buildings. There are however ruins from a pre-existing coal power plant and the silo. Zone 2 has utility fee simple ownerships on both sides of the waterfronts that restrict public, vehicle, and emergency access. Due to this condition, this area is limited to uses that would likely not require typical access. This zone has a significant grade change, and it is important to note that providing an accessible route would be difficult and costly. In addition, the remaining ruins would need to be safely secured. As much of this zone is already in a condition where occupied development would be challenging, it has the potential to become a naturalized area. This more naturalized area could utilize the existing ruins and silo as well as the remaining area within this zone to depict public art. Zone 2 likely will be a less active space, with the opportunity to provide a quiet place for reflection or ceremony and an additional walking path along the Canalside Rail Trail that would be available to users at their own risk.

Zone 3

Zone 3 contains 20 Canal Road (or the Strathmore Mill Complex). As stated in Section 3.4 – Building Assessment, due to the lack of structural integrity of the buildings, it is unlikely that the existing buildings can be reused and repurposed for occupancy. The complex is in a state of disrepair that would be unsuitable for standard renovation. There is a great opportunity, however, after the buildings are assessed by a structural engineer for selective demolition and restabilization of small portions to occur. These fragments along with creative design work could provide the district with a site that interprets the historic use of the island. Providing a space to acknowledge the history

of the town and the island was a critical request from the inhabitants of Turners Falls, and this zone provides space to interpret and experience the site. A key consideration for this opportunity would mean understanding how the demolition of the buildings would affect the intake and outfalls of the canal. In addition, there is still restricted public access on the canal side and no pedestrian connection at this zone, meaning that users of this area would be required to access the island at Zone 1 and walk through Zone 2 to access it. It is also critical to note that this zone also contains 16 Canal Road (or the Eagle Creek Hydro Plant) which will remain on the site. Any future work on the Strathmore Mill Complex will require careful consideration to maintain stabilization of the hydro plant. This plant provides another opportunity for this interpretation site by allowing visitors to view from the exterior how a hydropower plant runs.

Zone 4

This zone contains the only building that the team considers feasible for reuse. This is Building 11 of the Strathmore Mill Complex. Access is still limited at this location, but if the building is considered for uses that allow for access of the 10-foot fee simple ownership off the canal wall, it is possible to get adequate access. There is also a possibility to have limited access to the site by way of the Southworth tunnel easement. While Building 11 shows the highest possibility of reuse, it is critical to note that the building will require significant work to the building envelope and structure as well as to make updates to address building and accessibility codes. Utilities would also need to be reconnected at this site.

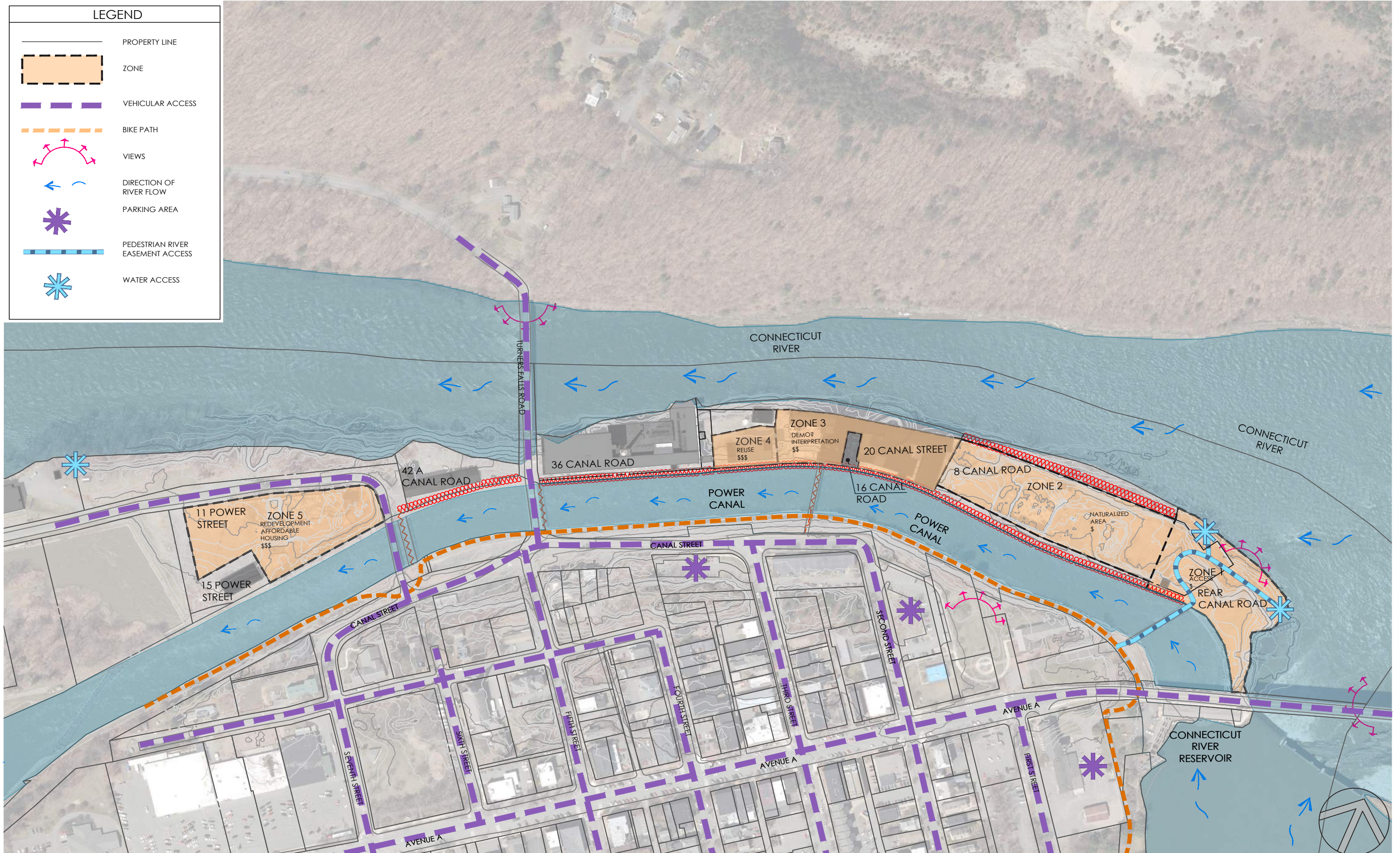
Zone 5

Zone 5 which contains 11 Power Street poses the greatest opportunity for redevelopment into residential use. The property was a former mill site that was cleaned up by the EPA in 2021, giving this site the best opportunity for housing development. Directly to the north of the site, there is the 6t Street Bridge. This bridge is slated to be replaced by MassDOT in

a 2027 project, which can provide direct access to this portion of the island. Easements that would make public access challenging do not reach this area of the site giving the zone plenty of access opportunities. Based on the market study, providing more housing is a critical need for this area of Turners Falls. The zone currently does not have water or sewer service and would need to be connected this new use. Another physical constraint for this zone is by a subsurface tile drain system that drains the adjacent power canal.



4.2B Zone Key Plan



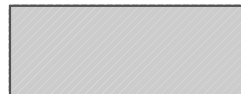

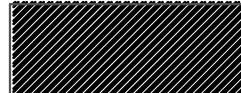



4.2B Opportunities and Constraints Diagram

Appendix F

Strathmore Building Chronology Plan
by SLR

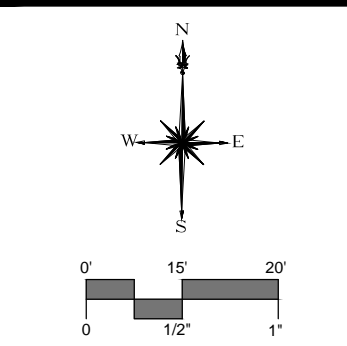
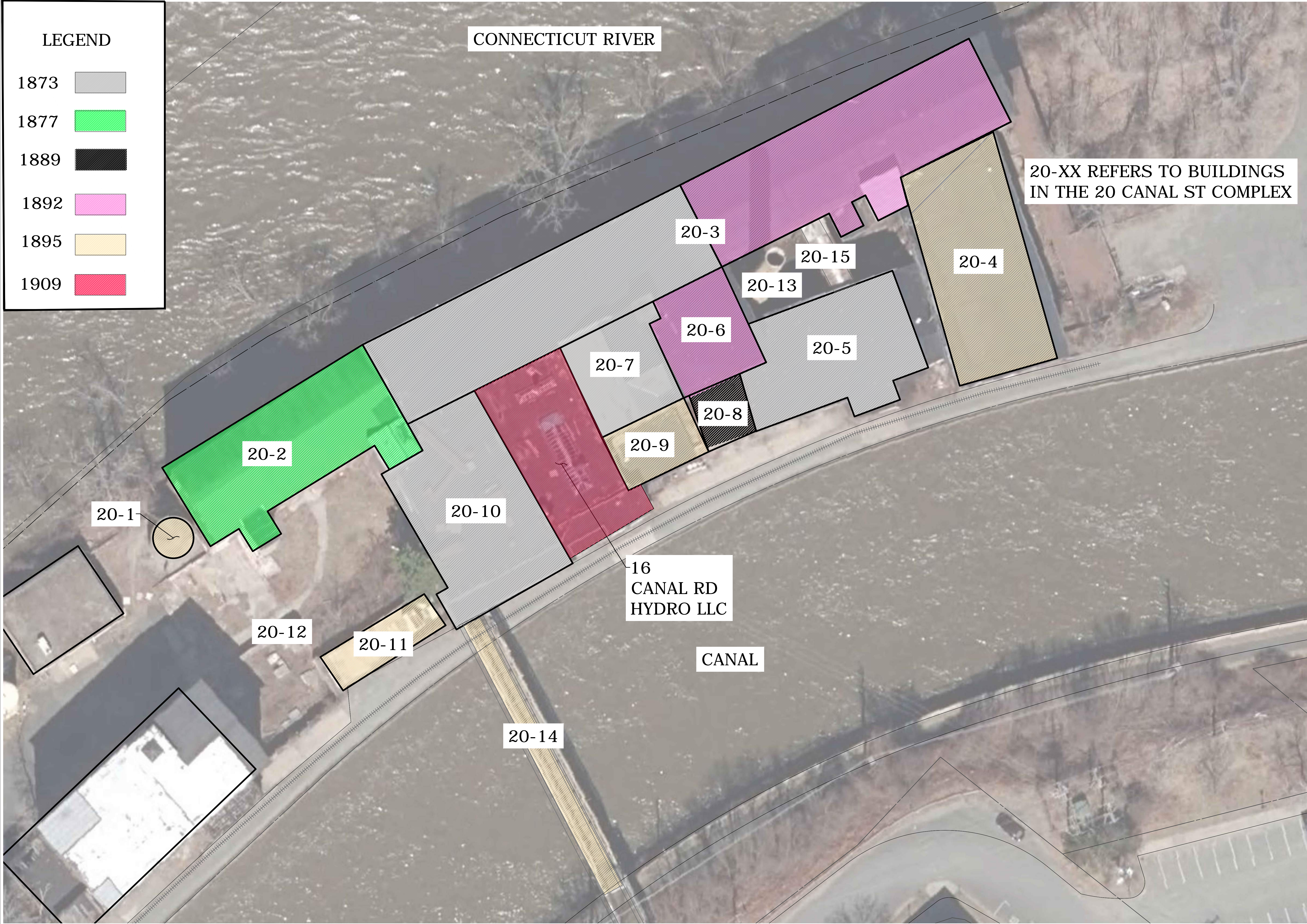
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PROJECT: 15898.00026
DRAWING: 01 OF 02

LEGEND

- 1873 
- 1877 
- 1889 
- 1892 
- 1895 
- 1909 

CONNECTICUT RIVER

20-XX REFERS TO BUILDINGS
IN THE 20 CANAL ST COMPLEX



DESCRIPTION	DATE	BY

BUILDING CHRONOLOGY
MILL DEMOLITION
20 CANAL STREET
TURNERS FALLS, MA

HW DESIGNED	HW DRAWN	HM CHECKED
SCALE 1"=20'		
DATE OCTOBER 14, 2022		
PROJECT NO. 15898.00026		
DRAWING NO. 01 OF 02		

SHEET NO.
01