



2023

Greater Lowell Annual Comprehensive Economic Development Strategy Annual Report



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2023 Greater Lowell Comprehensive Economic Development Strategy (CEDS) Annual Performance Report

Grantee:	Northern Middlesex Council of Governments
Project Title:	2023 Greater Lowell Comprehensive Economic Development Strategy (CEDS) Annual Performance Report
Project Number:	01-79-15054/115679 (CARES Act grant)
CEDS Performance Year:	10/19/2020 to 4/19/2023 (CARES Act grant)
Reporting period end date:	12/31/2022
Report Prepared by:	Christopher Glenn Hayes, Economic Development and Housing Planner
Five-year CEDS Time Period:	2020-2024

This document was prepared by the Northern Middlesex Council of Governments (NMCOG) using Federal funds under award 01-79-15054/115679 from the Economic Development Administration, U.S. Department of Commerce. The statements, findings, conclusions, and recommendations are those of the author(s) and do not necessarily reflect the views of the Economic Development Administration or the U.S. Department of Commerce.

Cover Photos (From left to right)
Lighthouse School Ribbon Cutting, Chelmsford
49 Main Street, Recently Renovated and for Lease, Pepperell
Mochinut Grand Opening, Lowell

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Section 1

Introduction

1.1. About the Greater Lowell CEDS for 2020-2024

The Greater Lowell Comprehensive Economic Development Strategy (CEDS) is a guide for Greater Lowell's municipalities, nonprofits, agencies, education providers, and other strategic partners to enhance regional economic resiliency, sustainability, inclusivity, and success. It contributes to effective economic development in our communities through a locally-based, regionally-driven economic development planning process. Where appropriate, it seeks to integrate or leverage other regional planning efforts, including the use of state and federal funds, and leverage private sector resources and investment.

The 2020-2024 CEDS planning process was led by the Northern Middlesex Council of Governments (NMCOG). NMCOG has been designated by the Economic Development Administration (EDA) of the U.S. Department of Commerce as the regional economic development entity for the Greater Lowell region and has been developing the Greater Lowell CEDS since the *2004-2008 Greater Lowell CEDS*. The Plan was developed in accordance with EDA regulations 13 C.F.R. § 303.7 and under guidance issued on January 21, 2015.

The CEDS provides a vehicle for private industry and individuals to engage in meaningful discussion with Greater Lowell's economic development partners to identify capacity-building efforts that would best serve economic development in the region. The CEDS planning process began in May 2019, and included significant revisions to address the evolving COVID-19 pandemic before the Plan's approval by the EDA in September 2020. The process included four meetings with the Greater Lowell CEDS Committee as well as three Strengths-Weaknesses-Opportunities-Threats (SWOT) Analysis sessions to receive input from the business community, public agencies, and the public on the economic future of the Greater Lowell region. The three SWOT Analyses and creation of the Summary Background were largely completed by February 2020—prior to full COVID impacts. On March 10, 2020, Governor Baker approved a state of emergency, and on March 29, 2020, President Trump approved a disaster declaration for Massachusetts. The Strategic Development and Action Plan was completed after that date and reflects the change in the public health and economic situation.

At that time, there were no available data sources to accurately reflect the serious, developing repercussions to our regional economy, small businesses, and workforce. Based upon the timeframe for the completion of the CEDS, we moved forward with data available at that time and expected to provide updated statistics with the submission of annual performance reports, including this *2023 Greater Lowell CEDS Annual Performance Report*.



City of Lowell, Courtesy Greater Merrimack Valley Chamber of Commerce

1.2. About the 2023 Greater Lowell CEDS Annual Performance Report

This *2023 Greater Lowell CEDS Annual Performance Report* (CEDS Annual Report for short) is the second of four annual performance reports on the progress of the CEDS implementation. Our CEDS Annual Reports will track our progress in completing the actions recommended in the plan, track evaluation measures to determine whether our actions are having a positive impact, and evaluate whether changing economic conditions necessitate changes in the CEDS. This CEDS Annual Report covers the period between the EDA Acceptance of the CEDS on September 2, 2020 and December 31, 2021.

The CEDS Annual Report includes the following sections:

1. **Introduction**
2. **Adjustment to the Strategy:** Updated socioeconomic data; major events since the CEDS completion including impacts from the COVID-19 Pandemic; and any necessary changes to the CEDS
3. **Report on Economic Development Activities:** A summary of the activities undertaken by the CEDS Committee or its partners to advance the CEDS and their successes since the previous year
4. **Evaluation of Progress on Action Plans and Goals:** A summary of progress toward the specific goals and objectives in the CEDS and report of the performance measures articulated in the CEDS
5. **Next Steps:** A 2023 action plan, including challenges and mitigation and required EDA assistance

This CEDS Annual Report extensively utilized the *Economic Recovery and Resiliency Plan* (ERRP) Phase 2, which made use of robust data, surveys, and public agency input to identify the economic injury to the Greater Lowell region caused by COVID-19. It also made recommendations, outlining steps to take to address these issues and to prepare for potential future impacts associated with this pandemic or similar major emergencies and economic shocks.

The CEDS Annual Report was created by NMCOG staff under the guidance of the CEDS Committee.



Carbon Colors Apparel ribbon cutting, Town of Dracut

1.3. Greater Lowell and the *Greater Lowell CEDS* Vision Statement

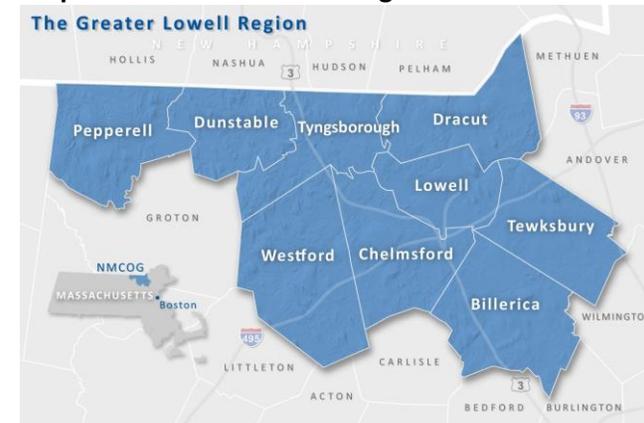
The Greater Lowell region consists of the City of Lowell and the Towns of Billerica, Chelmsford, Dracut, Dunstable, Pepperell, Tewksbury, Tyngsborough, and Westford. The region is located along the Concord and Merrimack Rivers in northeast Massachusetts and is bordered by Essex County to the east, by southern Middlesex County to the west and south, and by New Hampshire's Hillsborough County to the north. The City of Lowell is located 26 miles from Boston and is well-served by U.S. Route 3, Interstates 93 and 495, the MBTA Commuter Rail, and the Lowell Regional Transit Authority (LRTA).

The Greater Lowell region has extensive assets that include an ideal location accessible to the rest of New England through a well-organized highway network, a highly educated workforce, an established framework of banking institutions, and an integrated educational network offering pre-K to PhD instruction led by the University of Massachusetts at Lowell (UMass Lowell) and Middlesex Community College (MCC).

The vision articulated in the CEDS for the Greater Lowell region is to build upon the region's cultural history and economic characteristics to develop a regional economic framework that supports:

- The creation of **high skill, well-paying jobs** that are sustainable and resilient;
- **Affordable and market-rate housing** to provide housing options for the regional employment base;
- An integrated **economic development, workforce development, and education system** that builds upon the industry clusters in the region and prepares students and workers for today's jobs and employment in the future, based on evolving demand for certain skills;
- Private and public investment in the region's **physical infrastructure** – transportation, sewer, water, utilities, internet, etc. – and **social infrastructure** – day care, skill training, transportation services, etc. – to improve the quality of life in the region;
- An **inclusive and racially diverse workforce** that encourages economic success; and
- An economic foundation and governmental structure that **is well-prepared to respond to evolving situations** brought about by change in market conditions, a natural disaster, public health emergency, or other unforeseen circumstances.

Map 1: The Greater Lowell Region



Source: MassGIS/NMCOG (town boundaries);
MassDOT/NMCOG (roads)

Section 2

Adjustment to the Strategy

The CEDS is meant to be a flexible document. It may be adjusted to respond to changing economic conditions. To this end, this section of the CEDS Annual Report will describe any changes in the region's economic conditions and whether this necessitates adjustments, including the following:

1. A snapshot of socioeconomic data and how it has changed since the last Annual Report;
2. Major economic events, including but not limited to those arising from the COVID-19 Pandemic;
3. Any changes to the CEDS Committee or staff since the last Annual Report; and
4. A summary of the above updates and whether they necessitate a change in activities, priorities, or the evaluation framework.

2.1. Socioeconomic and Housing Data

About the Data

The CEDS Annual Report contains a snapshot of socioeconomic and housing data for Greater Lowell and how it has changed since the CEDS was adopted. Our region can best be characterized as a large, central city (Lowell) surrounded by smaller towns. To clarify trends that may be obscured if the data were broken out by each of the nine communities, we analyzed data for the region as a whole, Lowell specifically, and the region outside Lowell. Information is also presented for the United States and the Commonwealth of Massachusetts for comparison when appropriate. The data is broken into four major categories:

1. **Demographic Data** chart the changes in population, race/ethnicity, and educational attainment in the region. This primarily uses the U.S. Census Bureau's American Community Survey (ACS) five-year data. As the most recent data is from the years 2017-21, it does not reflect impacts due to recent events or activities. Instead, this report will analyze whether any long-term trends have changed since the last CEDS Annual Report and whether that impacts the CEDS in any way.
2. **Housing Data** charts the type and affordability of housing in the region. It also uses five-year ACS data. However, number of sales and median sales price uses Warren Group data, which is collected monthly and current through 2022. This data may reflect recent developments and will be noted as such.
3. **Commerce and Industry Data** represents businesses located in our region. This primarily uses Employment and Wage (ES-202) data from the Commonwealth of Massachusetts Department of Unemployment Assistance. It is current to Quarter 1 (March) 2022 and may reflect recent developments.
4. **Employment Data** represent workers over age 16 living in our region. It uses a combination of ACS and Local Area Unemployment Statistics (LAUS) data, which is current to November 2022.

Finally, while a brief summary of highlights for each socioeconomic subject are provided in this section, Appendix 1, **Socioeconomic Data**, contains a set of charts and tables with additional analysis.

DATA SOURCES AND LIMITATIONS
Much of the demographic data comes from federal programs, including the U.S. Census Bureau's American Community Survey (ACS) Five-year Estimates, the U.S. Bureau of Labor Statistics' Quarterly Census of Employment and Wages (QCEW) also known as the ES-202, and the Local Area Unemployment Statistics (LAUS) program.

The ACS dataset is released annually and derived from household survey responses collected over a five-year period. In other words, Five-Year ACS samples a subset of the community and essentially represents estimates of the average condition over five years. The most recent dataset was collected from 2017 through 2021, which is two years after the dataset used in the previous CEDS Annual Report (2015 through 2019). Therefore, changes in trends can be noted, but any changes due to recent impacts will not be in this dataset.

The QCEW data is published quarterly and covers private and public sector employers with Unemployment Insurance coverage. Self-employed workers, agricultural workers on small farms, and others are excluded from this data. LAUS data is published monthly and has the most up-to-date information.

Demographics

2021 marked an important change in our region – it was the first year the one-year ACS estimated a decline in our region’s population. It showed a population decrease between the 2020 Decennial Census and 2021 ACS for the city of Lowell (-1.4%), Middlesex County (-1.1%), and Massachusetts (-0.6%). The United States continued to grow during that time, but by a smaller rate than previous years (0.1%). This likely means that COVID-19 disproportionately impacted our region, but more study is needed to know whether changes to out-migration to more rural areas, in-migration from other countries, and/or a higher death rate was the driving factor or factors.

Regardless, other long-term trends appeared to continue, with only a few exceptions. For example, although the region’s population aged 19 and below has been shrinking over the past years, the 2017-21 ACS estimated that that population in the city of Lowell grew so much it offset the decline for the first time in many years. The next age category, people aged 20-44, grew both inside and outside the city of Lowell. As this age group has been growing steadily over the last decade, it represents a potential strength area. As the Baby Boom generation ages, the number of people aged 65 and over continues to have the highest growth rate, mirroring national trends.

The region continues to have a higher level of educational achievement than the U.S.—the region’s level of population with a Bachelor’s degree and above is 4 points higher than the U.S. As in the previous CEDS Annual Report, although there is a gap in both education and income between the city of Lowell and the rest of the region, both measures are improving region-wide. In fact, the 2017-21 ACS noted an accelerated growth in the city of Lowell in the proportion of people with a Bachelor’s degree or above since 2015-19. However, this growth is not distributed evenly. For example, the percentage of foreign-born residents without a high-school degree actually increased slightly in the city of Lowell since the 2015-19 ACS.

Finally, regional trends in race and ethnicity continue to echo national trends, with a declining share of the population who is “white, not Hispanic or Latino/a”. Notably, the proportion of Hispanic or Latino/a in the city continued its trend of decreasing, and as of the 2017-21 ACS, is at the proportion it was in 2009-13.

Housing

The mix of housing in Greater Lowell is important, as it reflects Objective 2.5 (supporting diverse rental units) and, more broadly, represents the ability to house families with diverse preferences, incomes, and needs—important to both quality of life and the workforce.

Although the previous CEDS Annual Report noted that housing development had accelerated since 2011-15, that development may have slowed considerably since the pandemic. This is a recent change, as the increase in units between 2015-19 and 2017-21 was even larger than between 2013-17 and 2015-19—concentrated mostly in buildings containing 10 or more units (6.3% growth between 2015-2019 and 2017-21 vs. 2.8% overall in the same period). However, permitting activity shows a very large slowdown in the last year, with 10-20 units permitted per month in the region compared to 60-80 before summer 2020. The city of Lowell’s permitting activity has been especially low as compared to previous years. That said, many of the units permitted in previous years are under construction now. In addition, several large projects throughout the region are currently in pre-permitting.

Although housing prices have jumped considerably, the volume of home sales has dropped recently. Median single family home sales prices had previously been increasing between 3% and 9% annually. However, they jumped 11%-16% in 2020 and 15%-22% in 2021. In 2022, sales increased by 8% - 11% (Dunstable and Westford both had outlier years of no price growth but otherwise conformed to this pattern). This may be because of the constrained supply. Possibly because of these prices and high interest rates, the region experienced a 15% drop in sales volume of single family homes and 18% drop in condos, after years of more-or-less consistent sales volumes that varied only by +/- 4% annually.

A household is considered “burdened” when it pays more than 30% of its income on housing. The 2017-21 ACS estimated Improvement for renters and roughly similar rates of burden for owners compared to 2015-19. However, even though this is the most recent data available, it uses surveys administered partially before home prices and rents made their largest jumps in 2020 and 2021. That said, even the 2017-21 data indicated a slight increase in proportion of owners burdened in the city of Lowell.

Commerce and Industry

The measure of number of people employed by Greater Lowell firms does not seem to be recovering to pre-pandemic levels. Although national employment has almost returned to pre-pandemic levels as of Q1 2022, employment in Massachusetts was 3.4% below the number measured in Q1 of 2020 and the region is and 2.4% below Q1 2020.

Greater Lowell's major industries by employment still include Education and Health Services; Professional and Business Services; Trade, Transportation and Utilities; and Manufacturing. These were among the hardest hit by the COVID-19 Pandemic. Although the sectors of Manufacturing and Trade, Transportation and Utilities have both recovered, growing 25% and 2% respectively by number of employees between Q1 of 2020 and Q1 of 2022, the sectors of Professional and Business Services and Education and Health Services both shrunk during that period, by -2% and -6% respectively. In addition, the sectors of Information and Leisure and Hospitality were particularly hard-hit, losing -12% and -15% from their pre-pandemic levels. That said, business growth in 2021 was better than 2020. Only the sectors Professional and Business Services and Financial Activities lost employees between Q1 of 2021 and Q1 of 2022. Others sectors grew during that time, but not by enough to make up for losses the year prior.

Notably, part of the lack of growth can be attributed to a dip in number of employees between 2021 Q4 and 2022 Q1 in the suburbs outside of Lowell (employment within the city of Lowell improved that quarter). It is unclear if this is the beginning of a trend or a seasonal anomaly, as the city's growth in employees was below that of the region until that time.

Regardless, the overall number of firms and average wage growth have continued their upward trend. This includes the strong growth in establishments in the city of Lowell—the number of establishments in the City grew by 3.6% between 2021 Q1 and 2022 Q1 compared to 2.0% in the rest of region during the same period. Weekly wage growth had a general upward trend as well, albeit with a gap persisting between the suburbs and Lowell. Wages within the city of Lowell have usually measured between 80% and 87% of the suburban wages since Q1 of 2019 with only a few exceptions.

Employment

As observed in previous years, per capita income, which simply divides the total wages made in a community by the number of people, was above the U.S. in every Greater Lowell community except the city of Lowell. However, for the first time in at least ten years, the city of Lowell's per capita income was not low enough to qualify as distressed. In other words, it was above 80% of the U.S. per capita income. This is the result of city of Lowell incomes growing since the 2015-19 ACS and through the 2017-21 ACS. This measure is now at \$30,620, or 81% of the U.S. per capita income. The region as a whole has a per capita income of \$43,152. It should be noted certain census tracts still qualify as “distressed.”

Regardless, the city of Lowell continues to trail the rest of the region partially because the city's occupation mix contains proportionally more production, food service, and “other” occupations, which tend to be lower-paid, while the region outside Lowell has a larger-than-average proportion in the Management and Technical occupations.

Further, the gap between the city of Lowell's unemployment rate and the rest of the region's unemployment rate has shrunk considerably. While the region as a whole has an unemployment rate of 2.7%, Lowell's is 3.3%. That said, this is among the smallest the gap has been since 2012—the gap has only been smaller occasionally in 2017, 2018, and 2019. The regional unemployment rate is an improvement from last year, which was already at a low 4.4%. However, regional labor force numbers, which measures all people over 16 living in the region and working or looking for a job, had not recovered as of November 2022. The number increased from 167,302 in November 2021, then to 168,044 in November 2022, but is still well below the 10-year high of 171,684 in June 2019.

The CEDS Annual Report also examines unemployment claimant data. The number of monthly claimants continued to shrink. It shrunk 87% between May 2020 and May 2021, and another 50% between May 2021 and May 2022. Notably, Construction has the largest number of claimants in our region, as its decline in claimants was only 10% compared to 16%-76% in other industries.

2.2. Major events

In this subsection, NMCOG summarizes major impacts and other influences on the regional economy in 2022. Over the past year, national GDP rates have fluctuated from over 6% in 2021 Q4 to two consecutive quarters of negative GDP growth (a common definition of recession) in 2022 Q1 and Q2, followed by a return to positive growth in 2022 Q3. Despite these erratic growth rates coupled with Federal Reserve rate hikes and the highest inflation rate in decades, unemployment has remained near record lows regionally, statewide, and nationwide. It is in this context that all impacts and influences must be examined.

Inflation and Supply Chain Disruptions

During the first year of the COVID-19 pandemic, demand for most goods plummeted as layoffs occurred, businesses were shuttered, and emergency measures required social distancing and work from home where possible. Manufacturing capacity was cut, workers were displaced, and transportation and shipments slowed. By late 2020, additional supply chain problems became apparent. Manufacturing and construction industries, both of which have high concentrations in Greater Lowell, were heavily impacted by these supply chain issues. The complex system that transports raw materials and finished products was significantly disrupted, and shortages of components and surging prices of raw materials further impacted manufacturers, builders, and businesses in other industries.

Following the economy's reopening, renewed demand for a range of goods and services exacerbated supply chain problems. Coupled with other factors, this led to substantial growth in inflation in 2021 and 2022. Inflation continued to rise even before the February 2022 Russian invasion of Ukraine and subsequent trade restrictions, which drove additional price increases in oil, gasoline, and natural gas, and therefore transportation and shipping. The most immediate impacts this shock had upon Greater Lowell is that real incomes were reduced and the cost of business operations grew substantially.

Interest Rate Hikes

In order to combat inflation, the Federal Reserve began raising the Effective Federal Funds Rate (EFFR), which jumped from 0.08% in March 2022 to 3.83% in November 2022. As of the drafting of this Annual Report, this had yet to have a significant impact on inflation broadly, though it has raised the cost for businesses to borrow money and for homebuyers obtaining mortgages.

Housing Prices

As mortgage rates have increased with the Federal Funds Rate hikes, the number of monthly home sales have declined in Massachusetts. For example, monthly single-family homes sales in Massachusetts declined 16.2% between September 2021 and September 2022, though monthly median single-family home sale prices in Massachusetts climbed 7.8% during that same time period, according to the Warren Group. However, according to Redfin, monthly median sale prices in Massachusetts have declined from their high in June 2022. Full information on housing prices in the region is reported in Appendix 1: Socioeconomic Data.

Environmental Sustainability and Resilience

As in previous years, climate change and environmental degradation pose significant challenges to economic prosperity and the well-being of communities in the region. Communities in Lowell and the surrounding towns will need to engage in proactive planning, today and into the future, to effectively and equitably address these challenges. Given the urgency of environmental issues, this critical planning work has already begun in communities throughout the region.

Looking forward, it will be critical for the region to continue to holistically incorporate environmental goals into all planning efforts. This includes ensuring the timely update of state-approved Hazard Mitigation, Net Zero, Open Space and Recreation, and Stormwater Management Plans where relevant. Currently, the only town without an approved Hazard Mitigation plan is the town of Dunstable, whose plan expired in 2020.

TABLE 1: ENVIRONMENTAL PLANNING EFFORTS BY MUNICIPALITY

Community	Hazard Mitigation Plan	Open Space and Recreation Plan	Net Zero Plan	Stormwater Management Plan	Environmental Chapter in Master Plan
Billerica	Current HMP	Current OSRP		Current SMP	Yes
Chelmsford	Current HMP	Current OSRP	Completed Net Zero Plan	Current SMP	Yes
Dracut	Current HMP	Expired OSRP		Current SMP	Yes
Dunstable	HMP Expired in 2020	OSRP Technical Document		Current SMP	Yes
Lowell	Current HMP	Current OSRP			Yes
Pepperell	Current HMP	Expired OSRP	Started Net Zero Plan		Yes
Tewksbury	Current HMP	Current OSRP		Current SMP	Yes
Tyngsborough	Current HMP	Expired OSRP		Current SMP	Yes
Westford	Current HMP	Expired OSRP	Completed Net Zero Plan	Current SMP	Yes

Source: NMCOG. Blank entries indicate the specified plan was not found for that community.

Four communities have expired Open Space and Recreation Plans. The Town of Dunstable does not have a full OSRP, rather they present a technical Open Space and Recreation document that states an update to the OSRP is forthcoming though no expected publishing date is provided. Within the region, the Towns of Chelmsford and Westford completed Net Zero Plans and Pepperell is starting a planning effort as a part of the Green Communities Program. The Town of Pepperell and City of Lowell are the only communities without an existing Stormwater Management Plan. All communities dedicate a chapter to Natural Resources in their Master Plans; many of these plans were created by NMCOG. Table 1 summarizes all of these plans.

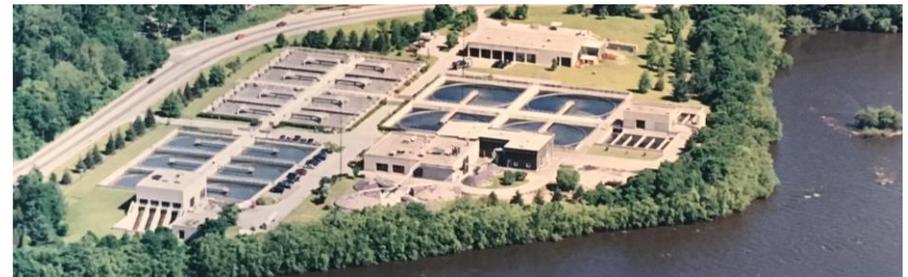
Impact of PFAS on Communities

One of the greatest challenges within the sphere of environmental degradation occurring within the region and beyond, is identifying and remediating water contaminated with per- and polyfluoroalkyls (PFAS). PFAS are synthetic chemical compounds used in industry and consumer products for over 70 years, and pose a variety of health hazards and economic hurdles. Every jurisdiction within our region recognizes the threat of PFAS and have begun to engage their residents by providing basic information on the risks of PFAS. Some communities have also begun testing drinking water wells and reporting results electronically. Though these actions represent significant progress, discrepancies in public engagement information and PFAS reporting methodologies are likely

obstacles in efforts to take further action, such as pursuing funding or creating a regionalized approach.

Water and Wastewater Infrastructure

Beyond the impact of PFAS on water supply, broader water, stormwater, and sewer constraints have become an increasingly critical issue within the region. Further study is needed—and planned—to fully understand existing capacity and how it limits economic growth. That said, examples of infrastructure impacting economic development include a moratorium on major development in Chelmsford due to reaching its limit on its sewer license with the Greater Lowell Wastewater Utility and public concern over water supply impacting the Town of Pepperell’s ability to add housing. More information about this issue and progress toward addressing it is provided under Goal 4: Infrastructure in Section 4.1.



Duck Island Clean Water Facility, Courtesy City of Lowell

Need for Broadband Access

The 2022 Massachusetts Broadband Strategic Plan stated, “The COVID-19 pandemic has brought heightened attention to the importance of broadband access and adoption in almost every facet of daily life. Access to affordable broadband service is no longer considered a luxury, but an essential utility. The need for broadband in the 21st century is often compared to the need for electricity or phone service in previous centuries.” It noted a 2020 Brookings Institution report that stated broadband infrastructure is now considered essential infrastructure. Examples of the essential uses of broadband in our region include:

- Participation in remote work and school
- Telehealth medical services
- Online job fairs and job interviews
- Online opportunities for civic engagement
- Digital services such as banking, bill payment, and other services

The 2022 Massachusetts Broadband Strategic Plan linked broadband access to positive outcomes including economic outcomes, healthcare, educational attainment, and likelihood of voting and engagement with government. However, within our region, the CEDS Annual Report identifies several issues that contribute to a gap in digital equity. This includes a lack of:

- Affordability, especially for low-income populations
- Access to laptops and computers, especially for low-income populations
- Access to appropriate levels of bandwidth for larger, often intergenerational families
- Digital literacy, especially for older community members, newcomer populations, and low-income populations
- More than one high-speed provider option in many geographic areas, especially in lower-income or less-dense neighborhoods

Layoffs

An important consideration when measuring economic distress and considering mitigation of distress are understanding layoffs. The MassHire Department of Career Services issues weekly notices of layoffs meeting the criteria of the Worker Adjustment and Retraining (WARN) Act. In calendar year 2022, the following two layoffs met that criteria:

- 64 layoffs by Peloton Interactive, Inc. in Billerica; 2/8/22 (NAICS Code 339920, Miscellaneous Manufacturing, Sporting and Athletic Goods)
- 32 layoffs by Starry, Inc., in Lowell; 10/21/22 (NAICS Code 517311, Telecommunications, Wired Telecommunications Carriers)

2.3. Change to CEDS Committee or Staff

Since the completion of the CEDS, the CEDS Committee has met at least quarterly to discuss a variety of topics, including the Economic Recovery and Resiliency Plan Phase II, various grant opportunities, and the CEDS Annual Report. During this time, five people left their positions or changed roles at their agencies and five agencies joined the committee, resulting in the following changes:

- Ali Carter, Economic Development Director for the City of Lowell replaced Yovani-Baez Rose
- Bobby Tugbiyele, Executive Director of the Leap Network, LLC, joined the Committee
- Bill Lipschitz, Director of Real Estate Operations of CTI/Common Ground retired
- Erika Jerram, Director of Planning and Community Development of the Town of Billerica, replaced Clancy Main
- Charles Smith, Director of the Entrepreneurship Center at CTI, joined the Committee
- Jay Linnehan, Executive Director of the Greater Lowell Community Foundation, joined the Committee
- Kevin Coughlin, Executive Director of the MassHire Greater Lowell Workforce Board, replaced Meelyn Wong
- Sothea Chiemruom, Executive Director of the Cambodian Mutual Assistance Association, joined the Committee
- Stacie Hargis, Professor at Middlesex Community College, resigned from the Committee
- Jennifer Gingras, Town Planner of the Town of Pepperell, joined the Committee
- Yun-Ju Choi, Executive Director of the Coalition for a Better Acre, joined the Committee

In addition, Beverly Woods, NMCOG Executive Director, retired. She was replaced by Jennifer Raitt, NMCOG Executive Director. She joins Christopher Glenn Hayes, NMCOG Economic Development and Housing Planner, and Jeff Owen, NMCOG Regional Planner, in overseeing CEDS communication and implementation.

2.4. Summary of Regional CEDS Updates

The most prominent event in the 2022 CEDS program year has undoubtedly been continued economic impacts caused by the COVID-19 pandemic, partially contributing to continued inflation and the increase of interest rates. That said, high interest rates have not—as of the most recent data release—impacted housing prices downward. In fact, regional housing prices significantly increased for the third consecutive year. In 2022, this combination of high prices and interest rates resulted in a substantial decline in home sales, which in turn limited housing options for people with lower and moderate incomes. In fact, the high cost of housing, lack of housing mobility, and lack of housing options may be the most critical economic issue facing the region. This has contributed to an increased number of unhoused people, negative quality of life impacts, and limitations on economic prosperity.



Center for Hope and Healing Ribbon Cutting, Lowell, Courtesy Lowell Development and Finance Corporation (LDFC). The LDFC is one of more than 25 organizations, businesses, and municipalities represented on the CEDS Committee.

It is unknown whether the population loss estimated in 2021 continued into 2022. It is also unknown how much housing costs contributed to that population loss. However, it is clear that a labor shortage that began prior to the pandemic continued through 2023. Greater Lowell's major industries by employment still include Education and Health Services, Professional and Business Services, Trade, and Manufacturing. These were among the hardest hit by the Pandemic. The number of workers employed in Greater Lowell firms had not recovered to their pre-pandemic levels as of the most recent data release, let alone to the level it might be if pre-pandemic trends had continued. That said, unemployment has recovered to pre-pandemic levels, even in the city of Lowell, where the pandemic's impacts on unemployment were worst.

These two indicators taken together suggest one of the largest issues facing the region is not a lack of jobs, but a lack of workers. This is echoed in feedback from firms. This labor shortage may be partially the result of high housing prices, but may have other contributing factors, such as a skills-labor mismatch, limited transportation options, lack of affordable childcare, changes in international immigration patterns, lack of competitive wages or benefits, or cultural mismatch. A strategy that includes job creation must contend with this labor shortage.

The aging of the population may also play a part in the labor shortage. As in previous years, the 2017-21 ACS measured a proportional increase in people over the age of 65. That said, as measured by that five-year ACS, the absolute number of working-age people in our region was growing, especially in the city of Lowell. In addition, the 2017-21 ACS measured increases in education nearly across the board. There were only a few exceptions, such as the proportion of immigrants from another country without a high school degree increasing slightly since 2015-19. Due to margins of error in the one-year data, it is difficult to know whether the trend of these indicators changed during pandemic recovery.

Infrastructure is another critical issue facing our region, including transportation and water and wastewater. Transportation may be a factor contributing to the labor shortage, as declining use of transit coupled with vehicle congestion may prevent potential workers from reaching jobs in the region. This would contribute not only to the labor shortage, but also to quality of life concerns. Meanwhile, capacity limits of the water and wastewater infrastructure, compounded by PFAS contamination in several communities, may present barriers on denser housing production at affordable costs. Even if the labor shortage was eased, the construction of new office and industrial buildings would be limited by these infrastructure constraints.

NMCOG recorded many other negative impacts on the health sector, on food security, and on general quality of life in the 2022 Economic Resiliency and Recovery Plan (ERRP) Phase 2. Many of the impacts were difficult to measure and ranged from a decline in transit use to impacts on education to negative physical and mental health outcomes. However, some impacts might be mixed or positive, such as the impact of telecommunication to expand options for people to learn or work from home. These impacts were not distributed evenly, and some groups have suffered disproportionately due to the ongoing COVID-19 pandemic. The ERRP Phase 2 makes a number of recommendations not only to aid in the post-pandemic recovery, but also to increase the region's

resiliency for future health emergencies. Many of these recommendations have been chosen as regional priorities in the 2023 Schedule of Goals.

Finally, similar to the last reporting period, the overall number of firms and average wage growth has been generally steady through Q1 2022. As in the previous reporting period, the city of Lowell had exceptional growth in number of firms in the two-year period, outpacing the region and the state. This may reflect small business creation and/or firms moving to the city. However, those firms still tend to pay less than in the rest of the region.

In conclusion, as most long-term trends have not seemed to have changed, the CEDS Committee believes the Strategy and Action Plan has remained relevant. However, the heightening of certain trends—such as housing costs, infrastructure limitations, transportation limitations, and inequitable health outcomes—indicate certain actions should be prioritized in 2023. These will be explored in Section 5, Schedule of Goals for 2023.

Section 3

Economic Development Activities

3.1. Summary of Accomplishments

As the District Organization of Greater Lowell, NMCOG develops and tracks an annual “Schedule of Goals” that is based on the Action Plan in the five-year CEDS and prioritized by the region’s economic development strategic partners. This includes activities undertaken by regional partners such as local jurisdictions, public agencies, and nonprofits and sometimes utilize EDA or state economic development funding. An evaluation of how these actions and others advanced the goals of the CEDS is in Section 4, Progress on Plan and Goals.

TABLE 2: 2022 SCHEDULE OF GOALS OUTCOMES

Activity or Project	Task	Lead Agency or Actor	Objective(s) Advanced	Outcome
Economic Recovery and Resiliency Plan	Evaluate progress on ERRP Phase 1 actions and recommend priorities for phase 2 evaluation.	NMCOG	1.1	The ERRP Phase 1 evaluation was completed April 2022.
	Complete Phase 2 of the ERRP.	NMCOG	1.1	The ERRP Phase 2 was completed September 2022 and endorsed by the NMCOG Council October 2022.
MBTA Community Multi-Family Compliance	Complete presentation to Select Boards or City Council.	Designated MBTA Communities	6.1	All MBTA communities completed presentations to Select Boards or City Council and achieved interim compliance by May 2022.
	Complete Action Plan toward compliance by DHCD's required date and Submit to DHCD.	Designated MBTA Communities	6.1	DHCD extended the deadline for Action Plan submission to January 30, 2023. As of December 30, Dracut, Lowell, and Westford had submitted their Action Plans with all communities on track to submit by January 30.
	Provide technical support through the DLTA program to identify ideal locations for zones, potential capacity for zones, and other data needs as requested by local communities. Draft zoning amendments may be included or may be developed in 2023.	NMCOG	6.1	NMCOG provided support through educational presentations at joint board meetings, assistance with utilization of the DHCD compliance model, and mapping of key features for planning purposes. Multiple communities have expressed interest in receiving additional assistance in 2023.
Revitalization of Regional Network of Village and Neighborhood Centers	Evaluate the feasibility of applying for regional technical assistance through the Complete Neighborhoods Program of Mass Housing Partnership. This could potentially advance the ERRP goal of identifying, reusing, and revitalizing vacant properties and development of multifamily housing near employment centers and public transportation.	Local Communities	2.1, 5.3, 6.1	NMCOG held several meetings, resulting in applications to the program from Lowell and Westford. Westford was not selected.

TABLE 2: 2022 SCHEDULE OF GOALS OUTCOMES

Activity or Project	Task	Lead Agency or Actor	Objective(s) Advanced	Outcome
	<p>Complete study investigating expanding multifamily and mixed-use zoning in Pepperell's Main Street Corridor/Railroad Square area, including the investigation of 40R through the DLTA program, and apply for funding to implement infrastructure recommendations for Main Street Corridor/Railroad Square area.</p>	Pepperell	2.1, 6.1	<p>Pepperell is working with a consultant to draft zoning changes to potentially allow multi-family by right in the commercial areas, this is scheduled to be completed in 2023. In November 2022, Pepperell brought a 40R article to Town Meeting, however, the article failed. Pepperell received a \$400,000 grant from Complete Streets and a \$200,000 grant from Shared Streets & Spaces program to make sidewalk, crosswalk and safety improvements to the Main Street Corridor/Railroad Square area.</p>
	<p>Prioritize and identify implementation first steps of Local Rapid Recovery Plans to enhance amenities, marketing, coordination, visual appearance, and access.</p>	Dracut	2.1, 2.5	<p>Dracut's Economic Development Committee continues to focus on the Navy Yard and has worked with a University of Massachusetts student group to implement recommendations.</p>
Lowell	<p>Lowell has dedicated \$750,000 in funds for wayfinding signage fabrication and installation; planning a program for parklets and outdoor dining; holding monthly meetings with the LDFC/Lowell Plan staff and CTI E-Center staff; planning the rollout of an ARPA-funded façade improvement program in early 2023; tracking commercial vacancies; successfully received a TDI program in the Acre; and will be reviewing the zoning use table this year to make zoning recommendations that are current and appropriate for a downtown with expanding housing uses. Downtown Mixed Use district zoning amendments to allow up to 10 residential units on upper floors by right with no parking requirement have been voted to go to full City Council for approval.</p>			
Pepperell	<p>Pepperell has created a Wayfinding Working Group that will also develop a plan for marketing local businesses.</p>			
Tyngsborough	<p>Tyngsborough have chosen sign bylaw recommendations and wayfinding as next step priorities and are working internally on the former and seeking funding for the latter.</p>			

TABLE 2: 2022 SCHEDULE OF GOALS OUTCOMES

Activity or Project	Task	Lead Agency or Actor	Objective(s) Advanced	Outcome
	Develop improvement plans for neighborhood centers.	Lowell	2.1, 2.5	The Lowell Neighborhood Plan was completed and \$9 million in ARPA money was earmarked for its implementation. The plan will include directed funding for eligible parks projects, water & sewer infrastructure projects, and neighborhood business district improvements across Lowell’s neighborhoods, with a focus on Qualified Census Tracts (‘QCT’).
Evaluate and Improve Regional Zoning and Permitting Practices	Analyze Land Use and Zoning Conflicts in Chelmsford and recommend changes that will result in a process and outcomes that will encourage and support both housing and economic development opportunities.	Chelmsford, NMCOG	2.5, 6.1, 6.2	A draft of the study was completed in 2022 and will be finalized based on feedback from the Planning Board in 2023.
	Continue work on comprehensive zoning review with the Zoning Review Committee and consultants	Tyngsborough	2.5, 6.1, 6.2	Tyngsborough successfully passed a suite of administrative amendments at Fall Town Meeting as a first step in this process. It intends to advance additional amendments in 2023.
	Update Pepperell's current subdivision regulations and site plan review process to clarify and modernize language.	Pepperell, NMCOG	2.5, 6.1, 6.2	NMCOG completed draft amendments for subdivision regulations and site plan regulations in December 2022. NMCOG and Pepperell are discussing a project in 2023 to review these amendments with multiple committees prior to bringing them to a Planning Board vote in early 2023.
	Advance Dracut rezoning study to streamline permitting and investigate Inclusionary Zoning and/or 40R districts as part of the process through the DLTA program	Dracut, NMCOG	2.5, 6.1, 6.2	Dracut has worked with consultants to advance the rezoning study and intends to bring amendments to Spring 2023 town meeting. NMCOG developed educational materials for Inclusionary Zoning and plans to conduct an Affordable Housing Public Workshop in early 2023.
Industrial and Mixed-Use Development	Implement marketing, branding, and other initiatives for the Route 129 Business Park in Chelmsford	Chelmsford	2.5	The Town of Chelmsford created an action plan for its Route 129 corridor to identify tasks and a communication outreach for accomplishing private/public initiatives. Chelmsford also established a branding campaign with signage, a logo, web-site and video.

TABLE 2: 2022 SCHEDULE OF GOALS OUTCOMES

Activity or Project	Task	Lead Agency or Actor	Objective(s) Advanced	Outcome
	Continue supporting private development along Kendall and Middlesex Roads in Tyngsborough, which may include 93 Kendall Road, 54 Locust Avenue, 406 and 422 Middlesex Road, overflow lots of Pheasant Lane Mall, Westford Road, and/or other opportunities.	Tyngsborough	4.1, 5.1	424 Middlesex Road received special permit approval, but site work has not started due to larger economic issues. 93 Kendall is being considered by the planning board. 54 Locust is not likely going to be developed in the short-term. Locust Road would need improvements prior to development.
Regional Partnerships for Workforce Development	Convene a meeting among NMCOG and regional planning agencies of Lawrence and Nashua, NH, to discuss regional approaches to workforce and economic development.	NMCOG	2.3, 3.1	NMCOG met neighboring regional planning agencies and used this input to begin drafting a potential study of factors impacting workforce availability.
	Convene a meeting among regional workforce boards in NE MA, educational institutions, industries, and unions to discuss possible funding for a regional workforce plan. This could potentially advance the ERRP recommendation to develop a comprehensive regional workforce system.	NMCOG	1.1, 3.1	NMCOG staff consulted with workforce development partners including the MassHire Greater Lowell Workforce Board and the Middlesex 3 Coalition to identify critical assistance needs. These meetings along with discussion with the CEDS Committee and neighboring regional planning agencies were used to begin development of the workforce availability study. In addition, NMCOG participated in the MassHire Greater Lowell Workforce Board meetings and began discussions related to such a regional meeting among workforce boards that participate in the Northeast "Superregion."
	Strengthen regional ties along Middlesex 3 Corridor by joining Middlesex 3 Workforce Development subcommittee.	NMCOG, Middlesex 3	2.3, 3.1, 4.4	NMCOG joined the Middlesex 3 Workforce Development subcommittee and attended a meeting of that subcommittee in fall 2022.

TABLE 2: 2022 SCHEDULE OF GOALS OUTCOMES

Activity or Project	Task	Lead Agency or Actor	Objective(s) Advanced	Outcome
	Implement other Workforce Development actions recommended by the ERRP.	MassHire GLWFB	3.1, 3.2, 3.3	<p>MassHire GLWFB advanced the actions of (1) aligning workforce efforts to address industry needs; (2) working with higher education and non-profit institutions; (3) providing training targeting low-income and minority residents; (4) working regionally; (5) connecting laid-off and unemployed workers with training; (6) linking low-income workers to supportive services such as transportation; (7) and support in-school and out-of-school youth.</p> <p>Some examples include initiating a pilot transportation program, creating a health care hub targeting healthcare training, piloting an early education certificate program to both provide jobs and create more workers that will hopefully increase the availability of childcare, and multiple jobs programs including fully locating a staff member at Lowell Housing Authority.</p>
	Support Northeastern University's BioConnects New England, a cluster-based program to create leadership in bio-manufacturing that is accessible to communities and individuals that have been excluded from that industry, including its Phase 2 Build Back Better application.	University of Massachusetts Lowell, NMCOG, Partners	3.1, 3.2, 3.3	NMCOG and other agencies provided letters of support, but Northeastern University did not receive funding for its Phase 2 Build Back Better application. NMCOG is in discussion with the team that put together this application to determine whether there are any possible next steps for the coalition.
	Support the Bio+Health+Tech Training Program that centers on technical training, student training, and start-up company training, including University of Massachusetts Lowell's Good Jobs Challenge application.	University of Massachusetts Lowell	3.1, 3.2, 3.3	NMCOG and other agencies provided letters of support, but UML did not receive funding for its Good Jobs Challenge application. NMCOG is working with UML to help support its program in other ways.
Economic Development District Application	Continue pursuing Economic Development District (EDD) designation with the EDA and examine opportunities available under a Revolving Loan Fund (RLF) program to be approved by EDA.	NMCOG	2.2	NMCOG remained in contact with EDA about EDD designation in 2022 and will continue pursuing designation in 2023.
Preparation for the 2023 CEDS Annual Report	Increase the number of CEDS committee members to enhance diversity of organizational types represented; socioeconomic, racial, and ethnic backgrounds; and industries represented.	NMCOG	2.2	Five new agencies were added to the CEDS Committee, four of which represent agencies that are led and/or primarily serve people of color.

TABLE 2: 2022 SCHEDULE OF GOALS OUTCOMES

Activity or Project	Task	Lead Agency or Actor	Objective(s) Advanced	Outcome
	Develop and track the number of square feet constructed in major industrial and commercial projects before and after COVID to determine if patterns of industrial and commercial development have changed due to the Pandemic or other changes in the economic landscape.	NMCOG	1.2, 2.6	NMCOG collaborated with the City of Lowell to provide CoStar reports on vacant and occupied square footage of retail, industrial, and office properties within the region.
	Determine which communities have public water system PFAS testing needs or water supplies that are limited by PFAS contamination, list necessary actions and activities to test for or mitigate contamination, and encourage communities with needs to apply for MassDEP resources.	Local Communities	1.1	NMCOG undertook a survey of PFAS-related activities among Greater Lowell communities and produced recommendations for 2023, including the development of a PFAS working group.
	Investigate and summarize NMCOG communities' sustainability plans, hazard mitigation plans, climate goals, or other work toward climate change mitigation and adaptation.	NMCOG	1.1, 1.2, 4.2, 4.3	NMCOG undertook a survey of local HMPs, OSRPs, Net Zero plans, and other plans related to ecological sustainability.
Housing Production Plans	Create Housing Production Plans for the Towns of Tewksbury and Westford utilizing the DLTA program.	NMCOG, Tewksbury, and Westford	6.2	The Town of Westford's Housing Production Plan was approved in October 2022. The Town of Tewksbury's draft Comprehensive Needs Assessment was completed in December 2022, with HPP completion expected in March 2023.
	Create Housing Production Plans for the Town of Dunstable and the City of Lowell utilizing the DLTA program.	NMCOG, Dunstable, and Lowell	6.2	The Town of Dunstable's draft Comprehensive Needs Assessment was completed in December 2022, with HPP completion expected in March 2023. The City of Lowell's HPP process was rescheduled to better align with "Lowell Forward," its comprehensive Master Plan process anticipated to be complete in early 2024.
Local Technical Support	Complete DLTA XV projects not covered above including Mapping Water/Sewer Parcels in Tyngsborough, Completing the Route 40/Groton Road Corridor Study in Chelmsford, and complete Brownfield Inventory in Westford.	NMCOG, Local Communities	4.1, 4.3, 4.4, 5.1	NMCOG has created drafts of the Tyngsborough and Chelmsford studies and intend to present final versions in early 2023. NMCOG completed a scope for the Brownfields study which is anticipated to be completed in 2023.
Business Continuity Training Program	Identify a lead agency to assist small businesses in creation of business continuity/preparedness plans that includes risk management, attraction/retention for workforce, technology adaptation, and business planning.	NMCOG, Entrepreneurship Center	2.2	NMCOG discussed this need with stakeholders in the region but did not identify a lead agency to assist in creation of business continuity plans. This may be undertaken in 2023.

TABLE 2: 2022 SCHEDULE OF GOALS OUTCOMES

Activity or Project	Task	Lead Agency or Actor	Objective(s) Advanced	Outcome
Enhance Tourism and Visitation	Identify partners for a regional Marketing and Tourism Working Group.	NMCOG	7.2, 7.3	NMCOG created a CEDS Marketing and Tourism Subcommittee in September 2022 and facilitated three meetings of this Subcommittee September-December 2022. The group provided recommendations for activities to prioritize in the 2023 Schedule of Goals.
	Complete the Merrimack Riverwalk Phase 2, Concord River Greenway Phase 3b, and Connector Trail.	Lowell	5.3, 7.1	The Merrimack Riverwalk Phase 2 and Concord River Greenway Phase 3b were completed in Spring and Summer 2022, pending punchlist items.
	Complete the Mosaic Lowell plan for the Creative Economy.	Mosaic Lowell	7.3	The Mosaic Lowell cultural economy plan was completed in fall 2022. Building on more than a year of extensive community engagement, the plan seeks to unite a broad cross-section of art and cultural practitioners and patrons, neighborhoods, businesses, and organizations from across Lowell.
Regional Energy Planning Assistance and Access to Regional Coordination	Prepare Green Communities Annual Reports for Billerica, Dracut, Dunstable, & Tewksbury.	NMCOG	1.1, 5.2	Reports for all communities were submitted by the November 4, 2022 deadline. NMCOG is awaiting feedback from DOER regional coordinators.
	Perform community greenhouse gas (GHG) inventories for Chelmsford & Pepperell.	NMCOG	1.1, 5.2	Completed April 2022.
	Assist Chelmsford, Pepperell, & Westford with planning for net-zero municipal operations.	NMCOG	1.1, 5.2	NMCOG began the planning efforts in 2022 and anticipates completion of net zero municipal operations plans in May 2023.
	Assist Chelmsford & Pepperell with preparation and scoping work for community net-zero plans.	NMCOG	1.1, 5.2	NMCOG is providing assistance with community net-zero planning efforts and anticipates completion in May 2023.
	Provide monthly training on energy efficiency and clean energy programs	NMCOG	1.1, 5.2	Training was provided for first-time homebuyers as part of a Merrimack Valley Housing Partnership program in spring 2022 and will be provided again in spring 2023.
	Host two regional clean energy workshops.	NMCOG	1.1, 5.2	NMCOG hosted a regional clean energy workshop in October 2022, and is working to host its second in February 2023.
Northern Middlesex Stormwater Collaborative	Host annual Good Housekeeping training for municipal staff.	NMCOG	1.1, 4.1	Completed May 2022.
	Host one technical training related to the requirements of the Year 4 MS4 Permit.	NMCOG	1.1, 4.1	Completed April 2022.
	Work with communities to submit the Year 4 MS4 Permit.	NMCOG	1.1, 4.1	NMCOG provided support to communities in filing their required Year 4 MS4 Permit filings.

Section 4

Progress on Plan and Goals

The 2020-2025 CEDS defined seven **goals**, each with several objectives based on the region's vision statement. Each of these objectives contained multiple activities to advance that objective. These activities seek public investment and are to be pursued over a five-year period by the governmental entities or non-profit organizations that are championing them. In addition, the CEDS defined an evaluation framework. This framework contains **performance measures** that were selected to allow NMCOG to analyze whether each of the seven goals and their associated objectives were being met.

This section analyzes our progress as a region toward achieving these goals in two sub-sections. **Action Plan Updates** provides updates on the actions NMCOG and regional agencies made and how they advanced the **goals** in the previous years. **Evaluation Framework Measurements** provides updates on the **performance measures**.

4.1. Action Plan Updates

Goal 1: Economic Resiliency

Incorporate long-term measures that bolster the region's ability to withstand or avoid a shock and enhance the region's capability and ability to respond to recovery needs following an incident.

NMCOG advanced the objective to implement steady-state initiatives by utilizing EDA CARES Act funding to complete a Phase II Economic Recovery and Resiliency Plan (ERRP) with CEDS partners. Without addressing the public health impacts and needs, there's little chance of returning the Greater Lowell economy to its pre-COVID 19 pandemic state. As part of this effort, NMCOG initiated technical assistance and capacity building initiatives that will enable the region to be prepared for future natural and economic disasters. Phase I of the ERRP was completed submitted to EDA in January 2022. Between April 2022 and September 2022, NMCOG staff facilitated discussion about progress on Phase I with health care, economic development, housing, and food security stakeholders. This built on the public and stakeholder input that informed Phase I, and formed the framework for the Phase II ERRP, which was completed in October 2022. The Phase II Report includes a broad focus on resiliency planning and preparation for future disasters. Recommendations developed for Phase II are integrated into this CEDS Annual Report and the full Phase II Report is in Appendix 2.

The City of Lowell's ARPA Economic Resilience Grant program prioritizes project proposals that enhance public health outcomes, address climate change concerns, or improve business/nonprofit ability to respond to adverse impacts. Projects that address COVID-19 impacts are also a priority of the City's ARPA grant program, and is open to disproportionately impacted industries. The City has also been working with Energy Advocate to promote energy audits at commercial establishments through the Mass Save program, and adopted and promotes Mass Development's Property Assessed Clean Energy program. Finally, a Small Business Equipment grant through Mass Development's Transformative Development Initiative program supports purchase of equipment and capital improvements in the Acre neighborhood.



*Lala Books ribbon cutting, City of Lowell.
Lala Books opened during the pandemic.*

Lowell Community Health Center has undergone a third-party exploration to assure pay equity. As a result, they have assured that all of its more than 400 employees are paid at least the 50% market median. This will address retention, recruitment and their commitment to equity. LCHC has also been offering video and telehealth visits, addressing access and helping those with limited transportation or who have difficulty taking time off from work for health visits. Their CDC-funded REACH LoWell (Racial and Ethnic Approaches to Health Care) program, focusing on the Khmer and Latino/a communities, is working with community partners to promote COVID, Flu, and routine immunizations, and address food insecurity.

Goal 2: Economic Development

Restore the regional and local economies devastated by the COVID-19 pandemic and build economic resilience through a diversified economy that includes science, health and technology innovation, advanced manufacturing, biotech, and prosperous small businesses.

In the previous CEDS Annual Report, revitalization of a regional network of village and neighborhood centers was identified as a key priority for economic development in the region due to their role in quality of life, small business creation, and traditionally denser patterns of development that allow for multiple modes of active transportation. To those ends, the Towns of Dracut, Pepperell, and Tyngsborough and the City of Lowell are making progress on several Local Rapid Recovery Plan (LRRP) initiatives. Funded by the DHCD's Massachusetts Downtown Initiative Program in 2021, LRRPs identify interventions that could accelerate COVID recovery in the short term and protect from future economic shock in the long term. Lowell's progress in LRRP implementation includes designing a program for permitting outdoor dining that complies with applicable regulatory requirements; drafting an RFP for wayfinding signage; implementing an ARPA funded façade improvement program; and tracking commercial vacancies. In addition, Lowell has already adopted LRRP zoning recommendations and a three-year MassDevelopment Transformative Development Initiative program for its Acre neighborhood.

Pepperell has created a Wayfinding Working Group to explore a design for signage throughout the Town and develop a plan for marketing local businesses. Dracut's Economic Development Committee continues to focus on the Navy Yard and has worked with University of Massachusetts to implement LRRP recommendations. The town has established a partnership with UML wherein professors and students in the Business Department on North Campus, which lies half a mile from Dracut's Navy Yard. The fledgling partnership opens a dialogue between the district and the college with the hope that it will lead to mutually beneficial results, including a pipeline of possible temporary employees for businesses struggling to find workers. Ideas that students and the Navy Yard business community are working on include the college hosting a festival in the Navy Yard; taking the lead in having a mural painted on the side of a mill building that would welcome people to Dracut; tree plantings; and working with business owners to improve or create websites and social-media presence.



Triton Systems ribbon-cutting, Chelmsford.

The Town of Chelmsford created an action plan for its Route 129 corridor to identify tasks and a communication outreach for accomplishing private/public initiatives. Chelmsford also established a branding campaign with signage, a logo, web-site and video. The website and video builds on the image of the Route 129 corridor and showcased the Town's important partnerships with major employers, property owners, and business occupants. The Town also achieved an elevation of its bio-readiness and life science status to Platinum.

Dracut Economic Development uses its website and social-media presence, as well as the InsideLowell website, to promote and market businesses in town, through periodic feature articles and by establishing a Business of the Month program, which, in turn, generates traffic to the website. Dracut Economic Development is also pursuing methods to improve communication among businesses in town. One method is by facilitating the creation of a Dracut Business Association, an independent, nongovernmental agency, the charge of which would be to unite business owners to work toward the common good. Several owners of a diverse cross-section of businesses have expressed an interest in taking a lead in this endeavor. Dracut Economic Development also partners with local realtors to fill empty storefronts by reaching out to businesses potentially interested in Dracut and by helping business owners already in Dracut to find more suitable locations in town.

The Town of Westford Economic Development Committee has engaged local property owners, builders, developers, and brokers on the impact of COVID-19 to their tenants as well as recovery status and outlook for future operations. Occupancy rates which dropped in 2020 and 2021 have significantly recovered and several new businesses (both retail and office) are entering Westford. In the 2023 the EDC will be extending outreach to individual businesses to assess operating status and outlook.

The Town of Tewksbury permitted two distribution facilities in 2022. The Burt Road project is 167,000 SF and currently under construction. The Commerce Way facility is 87,000 SF and was permitted through the Planning Board in late 2022. In Pepperell, three properties on Main Street are being developed, redeveloped or remodeled with estimated private investments of more than \$8 million. The Town of Billerica created a mixed-use zoning district that includes areas along a Boston Road and the Town Center, permitted a major mixed-use project on Boston Road, and permitted the clean-up redevelopment of a distribution center.

Goal 3: Workforce Development and Employment Support

Ensure that workforce initiatives align with current and future employment opportunities; that training supports workforce resiliency and the ability to shift between jobs and industries; and the necessary support services - day care, transportation, language training, etc. – are in place to overcome barriers to employment.

The project scope for the ERRP reflected the importance of the workforce development system working collaboratively with the economic development sector in order to make an effective match for unemployed and underemployed workers, as well as for businesses requiring a newly trained workforce. Therefore, NMCOG staff consulted with workforce development partners including the MassHire Greater Lowell Workforce Board, the Middlesex 3 Coalition, and neighboring Regional Planning Agencies centered in Lawrence, MA and Nashua, NH to identify critical assistance needs related to the post-pandemic labor shortage in the region such as high

housing costs, transportation access, skills mismatch, language barriers, childcare shortages, and recruitment challenges. These meetings along with discussion with the CEDS Committee were used to begin development of the scope for a regional workforce development study. NMCOG will continue work on developing this regional workforce development study in 2023.

The MassHire Greater Lowell Workforce Board and Career Center piloted a number of other innovative programs in 2022. This includes the **Health Care Hub**, in which the MassHire Lowell Career Center has placed 17 customers in healthcare training, exceeding its 15 customer goal. All 17 customers have completed the training and 15 are currently employed in the healthcare field. In addition, MassHire Lowell piloted a program with the CARES Institute to feed individuals into the **Early Education Certificate** program at Middlesex Community College. MassHire Lowell referred 19 individuals to the program and five have completed it and are EEC certified. It also participated in the Commonwealth of **Massachusetts Future Skills program**, which is designed to expand training opportunity in multiple occupation areas. MassHire Lowell is offering training in numerous careers such as plumbing, electronics, CNC, welding, auto tech, and nursing. Finally, it began the **Jobs Plus** pilot, a partnership with Lowell Housing Authority (LHA) to fully-locate a staff member at the LHA to assist residents in finding sustainable employment or discovering new career paths. Another MassHire program centered on transportation, referenced under Goal 5.

The Town of Chelmsford worked with a consultant to create a workforce development guide for Chelmsford and hosted a Route 129 job fair that is planned as a yearly recurring event. Similarly, the Town launched ‘Chelmsford Works’ with MassHire as a recurring monthly program for drop-in support at Chelmsford Town Hall for job seekers and employers. The City of Lowell worked with partners at MassHire, the Lowell Career Center, Project Learn, Middlesex Community College, and UMass Lowell to promote employment opportunities and make state-level workforce development programs available to Lowell employers.

The Westford Economic Development Committee has hosted representatives from MassHire and will incorporate their programs in discussions with individual businesses in town. Westford participated in a five-town consortia with a grant from Massachusetts DHCD to provide funding for families to secure child care enabling them to return to work. Additionally, the Nashoba Valley Technical High School gave a brief to the EDC on the Governor’s Workforce Skills Cabinet’s Career Technical Initiative that provides opportunities for youth and adults to retrain for skilled occupations that were hardest hit by COVID.

In addition, one of the two Good Jobs Challenge grant applications that NMCOG provided support for was approved: the team of the Boston Office of Workforce Development (OWD) and the Metropolitan Area Planning Council (MAPC) had a successful application, and the resulting project will include childcare workforce training in the Greater Lowell region.

Finally, NMCOG continued participating in the Greater Lowell MassHire Workforce Board committee meetings. The GLWFB is one of 16 Workforce Boards throughout Massachusetts. In addition to serving as a forum to build



*MassHire Greater Lowell Career Center
“Connecting Activities” Program,
Courtesy Chelmsford Public Schools.*

relationships between employers, job-seekers, and training providers, they offer a wide range of services to employers, job seekers and youth. The GLWFB will work closely with the Good Jobs Challenge team described above, with NMCOG providing any support when needed. Similarly, NMCOG joined the Middlesex 3 Coalition’s Workforce Committee to collaborate across regional borders on workforce issues.

Goal 4: Infrastructure

Build upon the existing sewer, water, telecommunication and public utility infrastructure to increase capacity and address gaps in the existing infrastructure so that businesses can grow in the future.

During the ERRP development process, NMCOG communities made clear that infrastructure, in particular water and sewer capacity limits, are limiting their economic recovery. For example, the Town of Chelmsford has a moratorium on new sewer connections for particular types of development because it is at capacity. Several towns cannot achieve BioReady designations because of limited public water and sewer. Water service in the Town of Pepperell has been strained due to PFAS contamination and drought, and the City of Lowell is struggling to reduce combined sewer overflow (CSO) events that are predicted to become more unpredictable due to the changing climate.

The Town of Tewksbury has committed \$9 million in ARPA funds to water distribution upgrades and a water distribution project on Whipple Road has been bid and is currently in progress. The Town of Chelmsford is in the process of creating a sewer-bank policy to establish and manage available sewer capacities. In Dracut, an analysis is underway to determine sewer capacities and recommendations for future service. A major phased inspection and lining of sewer mains is also underway to address inflow and infiltration concerns. Using DLTA funding, NMCOG staff contacted Tyngsborough water and sewer utilities for customer lists, analyzed the data, and mapped water and sewer coverage at the parcel level in Tyngsborough.

Lowell was awarded \$9 million in ARPA money to fund the Lowell Neighborhood Improvement Plan. The plan will include directed funding for eligible parks projects, water and sewer infrastructure projects, and neighborhood business district improvements across Lowell’s neighborhoods, with a focus on Qualified Census Tracts (‘QCT’). Lowell was also awarded \$10.6 million in ARPA money for improvements to the city’s water and sewer system. Investments will also be made in water infrastructure and to purchase heavy machinery to better maintain the water and sewer systems.

The Northern Middlesex Stormwater Collaborative continued to disseminate information to members through quarterly meetings and other communications. Collaborative members we provided information about municipal separate storm sewer system (MS4) permit updates and how to check and update their municipality’s bylaws for stormwater management and best practices for implementing a successful stormwater outreach and education program. Members have also engaged in discussions surrounding the creation of a PFAS working group within the Stormwater Collaborative.



Lord Overpass/Gateway to Lowell Project under construction

Furthermore, the importance of digital connectivity for telehealth, education, and remote work was highlighted during the pandemic while shortfalls in broadband service became apparent. In late 2021, Massachusetts Broadband Institute (MBI) announced two major programs utilizing \$50 million of state American Rescue Plan Act (ARPA) funding to advance digital equity and position communities to best utilize the roughly Digital Equity Act funding Massachusetts is receiving. A partnership between NMCOG and the Metropolitan Area Planning Council (MAPC) was approved as a vendor for one of the programs, the Municipal Digital Equity Planning Program. This program can provide planning services to identify needs of people who face barriers to internet use, such as affordability, availability of equipment such as computers, and training. This planning will position communities to compete for planned Digital Equity funding and utilize the funding to implement recommendations. University of Massachusetts Lowell (UML) led an application with several regional partners for the other program, the Digital Equity Partnerships Program. If selected, UML will work with community agencies to implement digital equity projects.

Goal 5: Transportation

Develop the transportation infrastructure to ensure that the Transportation Network supports economic development needs and accommodates future economic growth and address evolving mobility technology, which is trending toward driverless cars, ride sharing, telecommuting and electrification.

The Northern Middlesex Metropolitan Planning Organization (NMMPO) was established to carry out the transportation planning process in accordance with federal and state regulations. The NMMPO is the federally-designated transportation planning and programming agency for the Greater Lowell region. In addition to the Chairperson of NMCOG serving on the board of the NMMPO, NMCOG staff serves as the transportation planning staff for the NMMPO.

Through the Transportation Improvement Program (TIP) and other funding sources, NMCOG, local, and state jurisdictions advanced Objective 5.1 (Invest in the Regional Highway System to Enhance Access to Municipal and Employment Centers). This includes projects listed in Table 3 below.



Dragonfly Café ribbon cutting, Lowell, in newly-refurbished Thorndike Exchange, an example of Transit-Oriented Development (165 Thorndike).

TABLE 3: REGIONAL HIGHWAY IMPROVEMENT AND BRIDGE PROJECTS (NOT COUNTING INTERSTATE/HIGHWAY RESURFACING PROJECTS)

Town	Project	Status
Billerica	Boston Road Improvements	Anticipated Complete in 2026
Billerica	Middlesex Turnpike Improvements	Anticipated Complete in 2023
Billerica	Intersection improvements at Boston Road/Lexington Road and Glad Valley Road	Under Development or Design
Chelmsford	Route 3A/4 Improvements from Richardson Road to Technology Drive	Under Development or Design
Chelmsford	Route 110 Corridor Improvements	Under Development or Design
Chelmsford	Intersection Improvements at Route 110 & I-495	Under Development or Design
Chelmsford	Intersection Improvements at Route 129 And Riverneck Road	Completed in 2022
Chelmsford	Bridge replacement, Gorham Street over I-495 and Westford Street over I-495	Under Development or Design
Dracut	Nashua Road Improvements	Anticipated Complete in 2024
Dracut	Lakeview Avenue Safe Routes to Schools Sidewalk Improvements	Under development or Design
Dracut	Route 110 Resurfacing in Methuen, Dracut and Lowell	Under Development or Design
Dunstable	Route 113 Improvements	Anticipated Complete in 2023
Lowell	Rourke Bridge Replacement	Under Development or Design
Lowell	Replacement of Bridge on Gorham Street over I-49	Under Development or Design
Lowell	VFW Highway Bridge Over Beaver Brook	Completed in 2022
Lowell	VFW Highway Resurfacing	Under Development or Design
Lowell	Pawtucket Street Corridor Improvements	Under Development or Design
Lowell	Lowell Connector Reconstruction from Thorndike Street to Gorham Street	Under Development or Design
Lowell/ Tewksbury	Route 38 Intersection Improvements around I-495 interchange	Under Development or Design
Tewksbury	Route 133/River Road Intersection Improvements	Anticipated Complete in 2024
Tewksbury	Resurfacing and sidewalk reconstruction on Route 38 from Colonial Drive to Old Boston Road	Anticipated Complete in 2023
Tewksbury	Intersection Improvements at Main Street/Pleasant Street & East Street/North Street	Under Development or Design
Westford	Rehabilitation of Boston Road	Under Development or Design
Westford	Rehabilitation of Stony Brook Road Bridge over Stony Brook	Under Development or Design
Westford	Route 110 Improvements from Minot's Corner to Powers Road	Under Development or Design

In addition to the highway and bridge projects listed above, partners in the region advanced many multimodal projects addressing Objectives 5.2 and 5.3 related to transit and alternative transportation. The City of Lowell released its “Go Lowell” Plan that prioritizes alternative transportation improvements including bicycle projects, pedestrian projects, and transit projects. It is currently planning design of some of those improvements.

Trail projects advanced or completed in 2022 include those listed in Table 4.

TABLE 4: REGIONAL TRAIL PROJECTS

Town	Project	Status
Billerica	Yankee Doodle Bike Path	Under Development or Design
Dracut	Route 110 Multiuse Path	Under Development or Design
Lowell	Merrimack Riverwalk Phase II	Completed in 2022
Lowell	Centralville River Path	Under Development or Design
Lowell	Connector Trail (First Phase of River Meadow Brook Trail)	Completed in 2022

The MassDOT Complete Streets Funding Program provides technical assistance and funding to municipalities with approved Complete Streets Policies and Prioritization Plans. According to MassDOT, a Complete Street provides safe and accessible options for all travel modes, ages, and abilities. Streets such as these contribute to the economic vitality of communities.¹ Currently, all Greater Lowell communities have achieved this eligibility status, all but Dunstable have received project funding at least once, and the Towns of Pepperell and Tewksbury were each awarded a 2022 grant for a project to be completed in 2023:

- Pepperell received a \$400,000 Complete Streets grant in 2022 to make sidewalk and crosswalk improvements at the Main Street rotary including new, safer crosswalks, high visibility warning signage, and ADA compliant curb ramps.
- Tewksbury also received a \$400,000 Complete Streets grant in 2022 to construct a sidewalk that will provide a safe pedestrian connection for an elementary school.

In addition to Complete Streets funding, many projects funded by the Shared Streets and Spaces program improved both quality of life and increased bicycle and pedestrian infrastructure. Those projects are briefly described under Goal 7.

The Westford Economic Development continued to maintain dialogue with the Cross Town Connect program that focuses on "last mile" transportation connecting rail and work. In addition, Westford, acting through its Electric Vehicle Working Group, has been exploring the needs and feasibility for charging stations in Westford, which would expand on the Clean Energy and Sustainability Committee’s Climate Roadmap goals. The group also explored funding strategies, incentives, installation, and other information for EV charging and reviewed current building and zoning regulations to explore possible bylaw changes.

Finally, MassHire Greater Lowell initiated a pilot program to address what it has identified as the most critical workforce/employment issue in the Merrimack Valley – employment transportation. The program is expected

¹ MassDOT, Complete Streets Complete Streets Funding Program Guidance, January 2016

to explore the barriers and obstacles prevalent on this issue. They anticipate the local pilot will result in Federal and State recommendations and pilot programs.

Goal 6: Housing

Create more market-rate and affordable housing throughout the region to ensure that businesses can expand and relocate to the region with the assurance that their workforce will be able to own, lease or rent affordable, quality housing.

In 2022, NMCOG worked with the Towns of Dunstable, Tewksbury, and Westford and the City of Lowell to draft Housing Production Plans (HPP). Westford’s HPP was completed in September 2022, while Dunstable and Tewksbury’s HPPs are scheduled to be completed in the spring of 2023. The City of Lowell’s HPP is scheduled to be completed in 2024.

Although not under consideration at the time of drafting the CEDS, the Annual CEDS Report identified a critical economic development need under Objective 6.1 as promoting compliance with the new Section 3A of MGL c. 40A, commonly known as the “Multi-Family Zoning Requirement for MBTA Communities.” This requires zoning districts that allow multi-family housing as-of-right in “MBTA Communities”, which include communities with Massachusetts Bay Transit Authority (MBTA) bus or rail service or that abut municipalities with MBTA service. Throughout the spring of 2022, municipal staff made presentations to six Select Boards and the Lowell City Council on complying with the new legislation. In addition, NMCOG and state staff held additional presentations for designated MBTA community staff on steps to comply with the legislations. NMCOG staff also provided additional technical assistance to three municipalities on complying with MBTA community requirements, including assistance in developing an Action Plan and identifying steps to create and adopt compliant zoning. All seven MBTA communities met interim compliance requirements and are now working on developing compliant districts.

Four Greater Lowell communities utilized Housing Choice Initiative grants in 2022. The Housing Choice Initiative provides incentives, rewards, technical assistance, and targeted legislative reform to encourage and empower municipalities to build diverse housing units. To receiving Housing Choice designation, communities must have either had a 5% increase in housing units or built 500 units in five years. Table 5 lists the Housing Choice status of NMCOG communities.



Dracut Centre School ribbon cutting, Town of Dracut. This development created nine new units of affordable housing.

TABLE 5: HOUSING CHOICE COMMUNITY STATUS

Town	Last Designated	Current Status as of March 2021	Permitted Units in 5 years as of April 2022	Grant Project in FY23
Billerica	2020	Housing Choice Community	802	None
Chelmsford	2022	Housing Choice Community	314	\$250,000 - continue to advance design plans for the Vinal Square Transportation Improvement project including improvements to circulation, mobility, streetscape and safety.
Dracut	2019	Housing Choice Community	524	None
Dunstable	Unknown	Housing Choice Community	Unknown	None
Lowell	2020	Housing Choice Community	982	\$50,000 - create an Open Space Maintenance Master Plan to strategically allocate funds and resources for the upkeep of the City's parks, facilities, and public open spaces. This Maintenance Master Plan will help the City prioritize the areas based on criteria of social, economic, and environmental resiliency.
Pepperell	N/A	Not Housing Choice Community	Unknown	None
Tewksbury	2020	Housing Choice Community	540	None
Tyngsborough	2020	Housing Choice Community	236	\$250,000 - continue to make improvements to the Town Common, including increasing accessibility over Flint Pond, design and construction of an ADA compliant walkway from the corner of Winslow Road and Kendall Road to the dam over Flint Pond and over the dam to the corner of Kendall Road & Middlesex Road, and new footbridge over the existing dam for accessibility.
Westford	2020	Housing Choice Community	581	\$75,000 - amend zoning bylaw to address the requirements of new Section 3A in M.G.L. Chapter 40A for MBTA communities and identify the most appropriate areas to incorporate a district while providing considerations for design standards, climate resiliency measures, infrastructure limitations, access to MBTA services in nearby communities, and other public amenities.

Source: <https://www.mass.gov/info-details/housing-choice-designation>

To advance housing, economic development, and quality of life goals, the Town of Westford and the City of Lowell applied for the Mass Housing Partnership’s Complete Neighborhoods Program. Unfortunately, Westford did not receive funding, but as mentioned above, Lowell committed \$9 million in ARPA money to implement the Lowell Neighborhood Improvement Plan. In addition, Lowell adopted zoning amendments in its Downtown Mixed Use district to allow 10 residential units on upper stories by right with no parking requirement.

In addition to taking actions to increase housing stock in general, several towns have taken steps to increase their subsidized, income-restricted units. Typically, these are eligible for the DHCD Subsidized Housing Inventory (SHI). In November 2022, Pepperell brought a Smart Growth Overlay District article to Town Meeting; however, the article failed. However, Pepperell is now working with the Massachusetts Housing Partnership to develop an RFP for a developer to lease land currently occupied by Pepperell’s Senior Center to construct 24 units of 100% affordable age 65+ senior rental housing. Pepperell is also working with a consultant to suggest changes to the zoning to potentially allow multi-family by right in the commercial areas. Similarly, in August 2022, the Town of Dunstable put out an RFP for development of up to 60 rental units including at least 25% affordable at 80% of

the Area Median Income. In Westford, multiple housing projects are currently under construction, including 5 new subdivisions and the Helena Crocker Residences, which features 18 affordable senior housing units. Over the last year, the Balsam Circle development (24 units total including 7 affordable, supportive senior housing units) finished construction. Finally, working under the DLTA program, NMCOG worked with Dracut to study multiple options to develop inclusionary zoning.

Goal 7: Community and Quality of Life

Maintain the community character in the region by preserving and protecting the region’s natural, cultural and historic resources and by encouraging balanced growth.

Mosaic Lowell, a local cultural organization, completed the Mosaic Lowell plan for the arts, cultural, and creative economy in 2022. Building on more than a year of extensive community engagement, the plan seeks to unite a broad cross-section of art and cultural practitioners and patrons, neighborhoods, businesses, and organizations from across the City of Lowell to work together to amplify the City’s creative and cultural offerings and those who produce them. In October 2022, the Barr Foundation announced its commitment of \$1 million to support the plan’s implementation.

During COVID-19, new needs for outdoor, walkable space that could support social distancing measures arose. To address these needs, several NMCOG communities utilized the MassDOT Shared Streets and Spaces grant program in 2022 to create outdoor restaurant seating and bicycle/pedestrian/transit improvements, including:

- Pepperell received \$200,000 in Shared Streets & Spaces Program funding to install improved warning signage at the Nashua River Rail Trail crossing, as well as to expand the existing sidewalk along Main Street to make space for benches, planters, outdoor dining, and wayfinding signage to improve bicycle and pedestrian safety in the historic Railroad Square area.
- Tyngsborough received \$134,723 in Shared Streets & Spaces Program funding to realign a roadway to improve the safety of an intersection, to install an ADA-accessible walkway to connect a residential neighborhood with the Town beach, commercial district, and bus routes, and to install a bus shelter and bike rack to serve the Lowell Regional Transit Authority.

Finally, in fall 2022, a CEDS Marketing and Tourism Subcommittee composed of business leaders, nonprofit representatives, municipal officials, and other stakeholders was established. This group met in September to discuss and prioritize strategies related to visitation metrics, regional branding, regional marketing, festival and event coordination, and other steps to support the region’s quality of life and leisure, hospitality, and retail sectors. This included data collection on these economic sectors and consultation on a cultural economy plan with the Greater Lowell Community Foundation. Follow-up meetings in October and December focused on developing an action plan and creating recommendations to be integrated into this 2023 CEDS Annual Performance Report. The Subcommittee also focused on events, activities, and outdoor, historic, and cultural

assets that contribute to the quality of life for residents. Marketing developed to increase tourist visits to the assets will also raise local awareness about the resources. Next steps for the Subcommittee include identifying these assets across the region.

4.2. Evaluation Framework Measurements

The seven CEDS Goals and Objectives were summarized in the Strategic Direction and Action Plan. Outlined below are the specific measures, indicators, and 2020 and 2021 quantities for each indicator. The timeframe each measurement represents differs from indicator to indicator depending on the data source, which is noted in the final column. The performance indicators will reflect whether the specific measures have been positive, negative or unchanged. Notably, occasionally the quantity reported in the previous CEDS is adjusted as data sources have adjusted their preliminary numbers.

TABLE 6: EVALUATION FRAMEWORK

Goal	Measure	Indicator	2020 Quantity	2021 Quantity	2022 Quantity	Change between most recent periods	Note
1	Update hazard mitigation plans	Number of hazard mitigation plans or projects completed during CEDS	3	6	8	+2 plans	The number represents the number of current HMPs as of December 31 each year.
2	Attract and grow small businesses	Total number of establishments	9,776	10,186		+410 establishments	This number represents the total number of private establishments of all types in Q4 of the preceding years (2020 Q4 and 2021 Q4).
2	Increase employment	Total number of Jobs	123,703	126,644		+2,941 employees	This number represents the average monthly employment for all public and private establishments in Q4 of the preceding years (2020 Q4 and 2021 Q4)
2	Improve wages	Average wages	\$1,633	\$1,742		+\$109	This number represents the average weekly wage of all public and private establishments in Q4 of the preceding years (2020 Q4 and 2021 Q4)
2	Reduce unemployment rate	Unemployment rate	9.3%	5.6%	3.4%	-2.3 points	This number represents the region's average unemployment rate for the first 11 months of the year (2020, 2021, 2022) as reported by the Local Area Unemployment Survey <i>*Final month of data not available at time of updates</i>
2	Expand Opportunity Zone investments	Number and amount of Opportunity Zone investments	0	0	0	+0 investments	This represents the number and total estimated value of major projects <u>commenced</u> in the opportunity zone each year (projects may be completed in future years) as provided by the City of Lowell

TABLE 6: EVALUATION FRAMEWORK

Goal	Measure	Indicator	2020 Quantity	2021 Quantity	2022 Quantity	Change between most recent periods	Note
3	Increase workforce training participation	Number of residents served by GLWFB	196	232	320	+88 enrollments	This number represents the Total Enrollments of Workforce or Skills Training Programs of the MassHire Greater Lowell Workforce Board in the previous fiscal year (FY 20). Note that data prior to FY 20 was not available for comparison.
3	Enhance workforce training services for businesses	Number of businesses receiving services from GLWFB	564	515	929	+414 employers	This number represents the Total Employers Receiving Services from the MassHire Greater Lowell Workforce Board in the previous fiscal year (FY 20). Note that data prior to FY 20 was not available for comparison.
3	Increase level of skills training certification	Number of industry-recognized certifications and credentials Issued by GLWFB	179	146	275	+129 certifications	This number represents the Total Industry Certifications from the MassHire Workforce Board in the previous fiscal year (FY 20). Note that data prior to FY 20 was not available for comparison.
5	Increase population served by transit	Unlinked LRTA Trips	634,926	656,458	665,619	+9,161 trips	These numbers are the sum total per calendar year.
5	Improve bridge conditions	Number of structurally deficient bridges	N/A	24/248 (9.7%)	24/253 (9.5%)	-0.2 points	This number represents the number of structurally deficient bridges and total bridges on the MassDOT Bridge Inspection Management System. Note that numbers prior to 2021 were not available for comparison.
5	Increase walking and bicycle trails	Number and miles of walking and bicycle trails	N/A	342	343	+1 mile	NMCOG regional trails database as of 12/29/2021. Mileage excludes shared bike lanes (sharrows). Mileage is based on the total length of trail segments in the GIS data. Note that mileage prior to 2021 was not available for comparison.
6	Increase number of housing units	Number of housing units permitted	449	292	239	-53 units	The numbers are the sum total preliminary housing unit building permits for each year reported by HUD's State of the Cities Data Systems
6	Increase affordable housing units	Number of affordable housing units	11,428	11,556	11,597	+41 units	These are snapshots provided by DHCD of the SHI in July 9, 2020; June 22, 2021; and May 5, 2022
7	Increase economic footprint of cultural businesses	Total wage of selected industries	\$213,508	\$250,613		+\$37,105	This is the sum total of all wages paid in Arts, Entertainment, and Recreation Industry and Accommodation and Food Services Industry in the preceding years (2020 and 2021) in thousands of dollars

Section 5

Schedule of Goals for 2023

5.1.2023 Action Plan and Next Steps

This section describes the anticipated and priority actions to be undertaken in 2023. These activities have been selected due to their importance to increase the region’s resiliency, workforce availability, equity, and flexibility in the face of constantly changing economic conditions. In addition, they follow the recommendations in Local Rapid Recovery Plans and the Economic Resilience and Recovery Plan whenever possible. Activities were nominated by NMCOG based the analysis in Sections 3 and 4 and stakeholder input, then refined by a working group of CEDS Committee members.

In addition to these activities or projects, communities and agencies will undertake other economic development activities, such as but not limited to continuing business support and recruitment, regular workforce development activities, and infrastructure maintenance and construction.

TABLE 7: 2023 SCHEDULE OF GOALS

Activity or Project	Task	Lead Agency or Actor	Objective(s) Advanced	Milestone Target
1. Planning for housing at the local and regional levels	1.1. Form a coalition of municipalities, housing providers and developers, and nonprofit partners to develop a Regional Housing Strategy.	NMCOG	6.2, 6.3	Jul 2023
	1.2. Undertake and advance the first phase of a Regional Housing Strategy Plan that would include a shared vision, goals for number and type of housing created in each community, policy recommendations to achieve those goals, and visualizations, case studies, and stories to assist in public education.	NMCOG	6.2, 6.3	Dec 2023
	1.3. Undertake a public education campaign on homes and housing as guided by the first phase of the Regional Housing Strategy Plan, focused on building a shared understanding of the region’s housing needs and breaking down housing-related myths	NMCOG, Local Housing Organizations, Municipalities	6.2, 6.3	Continuous
	1.4. Continue the best practices for housing creation identified in the ERRP Phase II, Section 3.	NMCOG, Local Housing Organizations, Municipalities	6.1, 6.2, 6.3	Continuous
	1.5. Complete Tewksbury Housing Production Plan.	Tewksbury, NMCOG	6.2	Mar 2023
	1.6. Complete Dunstable Housing Production Plan.	Dunstable, NMCOG	6.2	Apr 2023
	1.7. Complete Phase 2 of Lowell Housing Production Plan Project.	Lowell, NMCOG	6.2	Dec 2023

TABLE 7: 2023 SCHEDULE OF GOALS

Activity or Project	Task	Lead Agency or Actor	Objective(s) Advanced	Milestone Target
2. Supportive housing with wrap-around services	2.1. Develop a phased plan to create 300 supportive housing units for those experiencing chronic homelessness, including identifying and obligating funding toward rehabilitation of uninhabitable units; prioritizing units affordable to extremely low incomes; adding appropriate wrap-around services; and identifying private partners to dedicate existing units to extremely low incomes. This plan should be committed to by all parties, including municipalities, and publicly shared.	CTI, GLCC, Lowell Plan, SMOC, GLCF, NMCOG	6.2, 6.3	Jul 2023
	2.2. Identify and undertake at least one project in implementation of that plan.	CTI, GLCC, Lowell Plan, SMOC, GLCF, NMCOG	6.2, 6.3	Dec 2023
3. MBTA Community Multi-Family Compliance	3.1. Provide technical support through the DLTA and other state funding programs (including MHP) to identify appropriate locations for zoning districts, potential capacity of zones, and other data as requested by local communities. Draft zoning amendments may be developed as part of this process.	NMCOG	6.1	Dec 2023
	3.2. Develop and adopt TOD overlay district that would change parking requirements, building height stipulations, and the removal of special permitting processes to expedite development of land around the Gallagher Station to encourage economic development for businesses with foot traffic for their success; encourage mode shift for environmental resiliency; and produce housing to combat unaffordability and homelessness.	Lowell	2.5, 6.1, 6.2	Dec 2023
4. Local and Regional Water and Wastewater Infrastructure Plan and Implementation	4.1. Apply for funding for a Regional Water System Expansion and PFAS mitigation system for Dunstable, Groton and Pepperell.	Pepperell, Dunstable	4.1	Apr 2023
	4.2. Inventory existing wastewater and stormwater capacity and needs for each community and develop a report that may be used for future planning, grantwriting, and coordination.	NMCOG	1.1, 4.1, 4.3	Jun 2023
	4.3. Create a PFAS task force for the region that will be charged with 1. Creating PFAS outreach materials 2. Standardizing testing and reporting methods 3. Creating an online repository for actual and historical records, outreach materials, and potential funding opportunities	NMCOG	1.1, 4.3	Jun 2023
	4.4. Identify possible alternative measures to increase wastewater and stormwater capacity, including both on-site and off-site storage and/or treatment and identify resources required for such alternative measures.	NMCOG, Municipalities	1.1, 4.1, 4.3	Dec 2023
	4.5. Host annual Good Housekeeping training for municipal staff.	NMCOG	1.1, 4.1	Dec 2023
	4.6. Host one technical training related to the requirements of the Year 5 MS4 Permit.	NMCOG	1.1, 4.1	Dec 2023
	4.7. Submit the Year 5 MS4 Permit.	Municipalities, NMCOG	1.1, 4.1	Dec 2023

TABLE 7: 2023 SCHEDULE OF GOALS

Activity or Project	Task	Lead Agency or Actor	Objective(s) Advanced	Milestone Target
5. Regional Energy and Sustainability Planning and Coordination	5.1. Develop a regional sustainability collaborative among towns in the NMCOG region modeled on the Northern Middlesex Stormwater Collaborative and possibly building on other regional and statewide efforts such as the North Central Climate Change Collaborative (NC4).	NMCOG	1.1, 5.2	Dec 2023
	5.2. Complete Net Zero Municipal Plans for Chelmsford, Pepperell, and Westford.	Chelmsford, Pepperell, Westford, NMCOG	1.1, 5.2	May 2023
	5.3. Assist communities with holistic environmental and sustainability planning, this includes 1. Ensuring that all municipalities have up-to-date and approved plans 2. Managing timely updates to Municipal Vulnerability Assessments and Plans, Open Space and Recreation, Hazard Mitigation, Stormwater Management, and Net Zero Plans or the assisting in the creation of those plans if one does not already exist 3. Creating a shared online repository for current and past plans 4. Working with municipalities to create a regionalized approach where relevant (e.g. where there may be shared open space or other natural resources)	NMCOG, Municipalities	1.1, 5.2	Continuous
	5.4. Identify a lead agency or agencies that may assist businesses in creating sustainability plans, including solid waste plans taking advantage of state or federal resources.	NMCOG, Small Business Centers	2.2	Jun 2023
6. Enhance Regional Transportation Planning	6.1. Complete the Long-range Regional Transportation Plan, Envision 2050.	NMCOG	5.1, 5.2, 5.3	Jul 2023
	6.2. Collect existing Complete Streets and other transportation infrastructure prioritization plans for municipalities within the NMCOG region, track updates and progress on those plans, and assist interested municipalities in prioritization and/or identifying funding for transportation projects.	NMCOG, Communities	5.2, 5.3	Continuous
	6.3. Evaluate journey to work commuter flows and off-peak flows (to services, entertainment, amenities, or shopping) in the region.	NMCOG	5.1, 5.2, 5.3	Dec 2023
	6.4. Implement Safe Streets and Roads for All Grant award to develop a Regional Safety Action Plan.	MVPC, NMCOG	5.1, 5.2, 5.3	Oct 2024

TABLE 7: 2023 SCHEDULE OF GOALS

Activity or Project	Task	Lead Agency or Actor	Objective(s) Advanced	Milestone Target
7. Transit and Alternative Transportation Connections	7.1. Evaluate transit rider comfort, which may include shelters, signage, ADA Accessibility, connectivity to other transit options, and public communications/ announcements throughout system.	NMCOG, LRTA	5.2	Dec 2023
	7.2. Coordinate with transit and paratransit providers in the region to ensure access to health care service for individuals without access to automobiles. Provide a report related to barriers for the 2024 CEDS Report.	NMCOG; LRTA; GLHA; HCPs; CBOs, COAs	1.1, 5.2	Continuous
	7.3. Evaluate Transportation Network Companies (TNCs) in the region, including their use and possible roles in providing alternative transportation to groups or individuals.	NMCOG, MassHire	5.2	Dec 2023
	7.4. Address first-mile, last-mile connections through the Regional Transportation Plan process and in collaboration with private companies and other regional partners.	NMCOG; LRTA; Middlesex 3 Coalition, MassHire	5.2	Jul 2023
	7.5. Facilitate discussion between communities, LRTA, and MBTA of rerouting or rescheduling fixed route bus routes to improve efficiency or connect additional destinations/users.	NMCOG, LRTA, Communities	5.2	Continuous
	7.6. Develop an implementation schedule for the GoLowell Multimodal Plan including funding sources and align with Complete Streets priority plan.	City of Lowell	5.2	Dec 2023
	7.7. Designate a subcommittee to develop CEDS recommendations for regional bicycle improvements based on the Regional Transportation Plan and for actions to leverage existing bicycle assets for economic development.	CEDS Committee	5.2	Sep 2023
	7.8. Determine status of and continue to advocate for Capital Corridor Commuter Rail extension or alternatives and roadblocks to progress and continue advocacy or study as appropriate.	NMCOG, MassDOT, MBTA, NHDOT, MAPCNRPC, Southern NH RPC, MVPC, NH Office of Energy, Central New Hampshire Regional Planning Commission, MAPC	5.2	Continuous
8. Continue Focus on Transportation Safety and State of Good Repair on Projects of Regional Importance	8.1. Seek design funding for engineering improvements to the intersection at Gorham, Central, Appleton, and Green Streets in Lowell in order to advance this as a TIP-eligible project.	Lowell	5.1	Jul 2023
	8.2. Seek funding sources to repair key automotive and pedestrian bridges throughout Lowell that carry inter-regional traffic and/or are in Environmental Justice neighborhoods.	Lowell	5.1, 5.3	Jul 2023
	8.3. Continue advancing the Rourke Bridge Replacement Project, communicating updates to all stakeholders.	All partners	5.1	Continuous

TABLE 7: 2023 SCHEDULE OF GOALS

Activity or Project	Task	Lead Agency or Actor	Objective(s) Advanced	Milestone Target
9. Regional Partnerships for Workforce Recruitment, Retainage, and Development	<p>9.1. Complete a scope of work proposal that includes a system dynamics study of the connection between housing, education, childcare, quality of life, and workforce; estimate the gap between available and desired workforce in number and skills; and estimate needed housing units for the “gap” in order to create recommendations for targeted investment to improve workforce recruitment and retainage, with a focus on historically underserved communities within our region.</p>	<p>NMCOG</p>	<p>1.1, 2.3, 3.1, 4.4</p>	<p>Jun 2023</p>
	<p>9.2. Work with Greater Lowell healthcare providers and workforce training providers to ensure training is available to increase the talent pipeline of clinical and non-clinical healthcare professionals. Include a report of training programs available, including number of seats available and actual participation, for 2024 CEDS report.</p>	<p>Greater Lowell Health Alliance (GLHA); MassHire Greater Lowell Workforce Board (GLWB); Health care providers (HCPs)</p>	<p>1.1, 3.1, 3.2</p>	<p>Dec 2023</p>
	<p>9.3. Continue developing, updating, and seeking funding for a regional workforce strategy through coordination with MassHire Workforce Boards in northeast Massachusetts and in partnership with stakeholders, including educational institutions, comprehensive high schools, technical schools, industry-specific associations, and unions.</p>	<p>NMCOG; MassHire Workforce Boards</p>	<p>1.1, 2.3, 3.1, 3.2, 3.3, 4.4</p>	<p>Dec 2023</p>
	<p>9.4. Create a business contact database of the regions’ largest employers that includes estimated number of workers and mission of firms based on proprietary, state, and local data.</p>	<p>NMCOG, Communities</p>	<p>1.1, 2.6, 3.1</p>	<p>Dec 2023</p>
	<p>9.5. Explore possible CEDS 2024 action steps to create stronger career ladders in culinary arts with technical schools, workforce development programs, and other stakeholders.</p>	<p>GLWB, NMCOG, Educational Agencies</p>	<p>2.6, 3.1</p>	<p>Dec 2023</p>
	<p>9.6. Reach out to the region’s technical schools to receive an assessment of needed resources to include in future CEDS planning.</p>	<p>NMCOG</p>	<p>3.1</p>	<p>Sep 2023</p>

TABLE 7: 2023 SCHEDULE OF GOALS

Activity or Project	Task	Lead Agency or Actor	Objective(s) Advanced	Milestone Target
10. Strengthen partnerships for regional equity in health, food access, and economic outcomes	10.1. Track health outcomes, including evaluating whether health outcomes are equitable across the region. This could include the impacts of active transportation, air quality, access to open space, or other community health measures.	NMCOG	2.2	Jul 2023
	10.2. Track economic outcomes, including evaluating economic outcomes by race and ethnicity, newcomer status, and limited English proficiency for use in developing 2024 priorities.	NMCOG	2.2	Jul 2023
	10.3. Support contingency planning by and coordination of emergency food organizations, councils on aging, faith-based organizations, and other providers to prepare for and handle spikes in demand for groceries, meals and food delivery.	NMCOG; CBOs	1.1, 2.4	Continuous
	10.4. Identify a single community-based or regional organization to lead the dissemination of information about locations and hours of operation of emergency food providers and places where WIC, SNAP and HIP are accepted. Information should be up to date, available in multiple languages and in multiple media formats including online and flyers for distribution or posting in targeted locations.	CBOs	1.1, 2.4	Dec 2023
	10.5. Seek funding to increase the communications capacity of organizations engaged in emergency food, including trainings on the use of remote technologies for improved dissemination of information and food resources.	NMCOG; CBOs	1.1, 2.4	Dec 2023
	10.6. Expand food security programs and subsidies by working with the private and non-profit sectors.	NMCOG; CBOs	1.1, 2.4	Dec 2023
	10.7. Work with partners to increase the number of places where Supplemental Nutrition Assistance Program (SNAP) and the Healthy Incentives Program (HIP) are accepted, particularly at small businesses, farmers markets, and farm stands.	NMCOG; CBOs; Business Assistance Providers	1.1, 2.4	Dec 2023
	10.8. Perform outreach to emergency food providers to identify culturally appropriate foods for their clients and to inform their clients about preparation of unfamiliar ingredients.	CBOs	1.1, 2.4	Dec 2023
	10.9. Provide resources to ensure public information is translated in multiple languages and that interpreters are provided to break down barriers to further access.	GLHA; HCPs; CBOs; interpreter/translation companies and certification providers	1.1	Dec 2023
11. Implement the ERRP Phase II to strengthen the resiliency of regional healthcare systems	11.1. Identify locations for emergency spillover testing and vaccination sites in case of future need, including benefits and deficiencies of the sites such as accessibility for people without automobiles. This may also include identification and evaluation of sites for distribution of supplies such as home tests, personal protective equipment such as effective face masks, or cleaning supplies as appropriate.	NMCOG; GLHA; HCPs; Municipalities	1.1	Dec 2023
	11.2. Investigate, document, and strengthen strategies that address hospital bed shortages during health crises.	GLHA; HCPs	1.1	Dec 2023
	11.3. Expand telehealth services to meet demand for remote health care including mental and behavioral health care services.	GLHA; HCPs; CBOs	1.1	Dec 2023
	11.4. Increase telehealth options for people experiencing homelessness, people who make lower incomes, people with limited internet access, and people with limited English proficiency.	GLHA; HCPs; CBOs; interpreter/translation companies and certification providers	1.1	Dec 2023

TABLE 7: 2023 SCHEDULE OF GOALS

Activity or Project	Task	Lead Agency or Actor	Objective(s) Advanced	Milestone Target
12. Strengthen childcare networks to support employment opportunities and economic mobility for child guardians	12.1. Ensure zoning bylaws are compliant with as-of-right childcare uses and provide reasonable regulatory reviews under MGL Chapter 40A Section 3, the Dover Amendment.	NMCOG; Municipalities	3.3	Continuous
	12.2. Identify barriers in local permitting processes to support new and existing childcare providers and to remove barriers to opening additional facilities.	NMCOG; Municipalities	3.3	Dec 2023
	12.3. Identify barriers to home-based, family childcare providers operating in rental housing, including through outreach and potential incentives for landlords.	NMCOG; Municipalities; CBOs	3.3	Dec 2023
	12.4. Work with the business community to identify employer best practices for supporting childcare options for employees.	NMCOG; CBOs; Local Development Organizations	3.3	Dec 2023
13. Regional Digital Equity Plan	13.1. Investigate the needs of the people who have barriers to broadband internet and support initiatives to fill those needs, allowing equitable access to essential internet services. The population facing barriers may include seniors, people who make low incomes, people with limited English proficiency, people experiencing homelessness, and other communities. Initiatives may include providing education toward computer and internet literacy, appropriate equipment such as computers or routers, financial assistance to pay for access at appropriate speeds, education and enforcement addressing security and privacy risks, or other initiatives as appropriate.	NMCOG; Municipalities; CBOs; Local Housing Organizations	1.1, 4.1	Dec 2023
14. Grant Application and Administration Capacity Building	14.1. More closely identify top project priorities throughout the region; research, assess, and identify federal, state and other funding opportunities; review grant application guidelines and preparation of applications; identify needed procurement services; and assess municipal grant reporting capacity and determination if assistance is needed.	NMCOG	2.4	Continuous
15. City of Lowell Master Plan	15.1. Complete Lowell Forward, the update of the Comprehensive Master Plan for the city of Lowell with a goal to increase participation of the community and create very thorough implementation strategies that align with the community’s expectations as a city while catering to their unique needs as neighborhoods with specific characteristics and socioeconomic compositions.	Lowell	1.1, 2.1	Dec 2023

TABLE 7: 2023 SCHEDULE OF GOALS

Activity or Project	Task	Lead Agency or Actor	Objective(s) Advanced	Milestone Target
16. Revitalization of Regional Network of Village and Neighborhood Centers	16.1. Complete the Westford Brownfield project of inventorying and making recommendations for brownfield sites in the Graniteville Neighborhood.	NMCOG, Westford	2.1	Jun 2023
	16.2. Seek funding for wayfinding signage and streetscape improvements for Railroad Square.	Pepperell	2.1, 7.1	Dec 2023
	16.3. Complete a feasibility analysis of creating a pedestrian mall in downtown Lowell.	NMCOG, Lowell	2.1, 5.3, 7.1	Dec 2023
	16.4. Implement neighborhood infrastructure programs and Economic Development programs to help local businesses increase their sales, fund equipment repairs, and improve general business practices to contribute to their success.	Lowell	2.1, 2.6, 5.3, 7.1	Dec 2023
	16.5. Coordinate with arts and culture communities for improved design, coordination, and local branding/ identity.	NMCOG; Municipalities, Local Development Organizations; Business Assistance Providers	7.1, 7.2, 7.3	Dec 2023
	16.6. Seek funding for sidewalk expansion from the Senior Center at 37 Nashua Rd down Mill Street and Main Street toward the Main Street Rotary.	Pepperell	2.1, 5.3, 7.1	Dec 2023
	16.7. Explore methods of inventorying vacant storefronts in the regional network of village and neighborhood centers.	NMCOG	2.1, 2.5, 2.6	Dec 2023
17. Evaluate and Improve Regional Zoning and Permitting Practices	17.1. Evaluate development environment and identify barriers to development, which may include education and policy, with a focus on supporting sustainable development	Municipalities, NMCOG	2.5, 6.1, 6.2	Dec 2023
	17.2. Continue work on comprehensive zoning review with the Zoning Review Committee and consultants	Tyngsborough	2.5, 6.1, 6.2	Continuous
	17.3. Update Pepperell's current subdivision regulations and site plan review process to clarify and modernize language.	Pepperell, NMCOG	2.5, 6.1, 6.2	Apr 2023
	17.4. Advance Dracut rezoning study to streamline permitting and investigate Inclusionary Zoning and/or 40R districts as part of the process through the DLTA program	Dracut, NMCOG	2.5, 6.1, 6.2	Apr 2023
18. Industrial and Mixed-Use Development	18.1. Analyze the market for Tanner Street and evaluate future EDA funding opportunities to advance the Ayer's City Industrial Park (ACIP) Urban Renewal Plan.	Lowell	2.1	Dec 2023
	18.2. Continue a focus on developing the remaining vacant parcels of the Hamilton Canal Innovation District, including continual outreach to potential developers.	Lowell	2.5	Continuous
	18.3. Investigate feasibility and evaluate scope of a cost-benefit analysis for construction of a southbound exit on Route 3 near the New Hampshire state line.	Tyngsborough	2.1	Dec 2023
	18.4. Determine a potential Project Beneficiary of transportation improvements on Locust Avenue and continue to seek funding for those improvements.	Tyngsborough	2.1	Dec 2023
	18.5. Evaluate the approach to promotion and utilization of Opportunity Zones through case studies or other methods.	NMCOG, Lowell	2.4	Dec 2023

TABLE 7: 2023 SCHEDULE OF GOALS

Activity or Project	Task	Lead Agency or Actor	Objective(s) Advanced	Milestone Target
19. Enhance Coordination among Businesses, Small Business Assistance Providers, and Municipalities	19.1. Identify a lead agency to assist small businesses in creation of business continuity/preparedness plans that include risk management, attraction/retention for workforce, technology adaptation, and business planning. This may include identifying programs that may be undertaken by local, regional, or state agencies to assist small businesses in one or more of these areas.	NMCOG, Small Business Centers	2.2	Dec 2023
	19.2. Share knowledge on the best methods to share ARPA and other direct small business support to continue economic recovery.	Municipalities, NMCOG, Small Business Centers	2.4, 2.6	Continuous
	19.3. Share knowledge about promoting and/or identify barriers to retaining small businesses as they grow within the region.	Municipalities, NMCOG, Small Business Centers	2.4, 2.6	Continuous
	19.4. Provide and promote up-to-date information about available resources for small businesses through municipal and regional websites and evaluate the feasibility of creating a one-stop website or clearinghouse for business assistance and grants in each town or throughout the region.	NMCOG, Middlesex 3, Small Business Centers	2.6	Dec 2023
20. Enhance Tourism and Visitation	20.1. Define the region, a vision for the region, and identify common "themes" or an "identity" which could be referenced in marketing campaigns by local and regional entities.	NMCOG; Greater Lowell Chamber of Commerce; Nashoba Valley Chamber of Commerce ; Middlesex West Chamber of Commerce; Local Dev. Organizations; Municipalities	7.2, 7.3	Dec 2023
	20.2. Evaluate existing local and regional marketing, determine where the gaps are, and coordinate marketers.	GMVCVB	7.2, 7.3	Dec 2023
	20.3. Provide technical assistance and support to local organizations or municipalities to establish, develop, or sustain marketing, branding, and promotional programs.	NMCOG; GLCC; NVCC; MWCC; Business Assistance Providers; Municipalities; Local Development Organizations; MTWG	7.2, 7.3	Continuous
	20.4. Develop cross promotional regional theme or event (or anchor event with offshoots) that would encourage visitors to tour the entire region.	GMVCVB	7.2, 7.3	Dec 2023
	20.5. Expand Shop Local programs to promote local businesses and attract visitors to the region.	NMCOG; GLCC; NVCC; MWCC; Local Development Organizations; Municipalities; MTWG	2.6, 7.2	Dec 2023
	20.6. Provide support in state-wide initiatives such as the Statewide Trail Mapping program or development of the regional or statewide trail networks.	NMCOG, Lowell Parks & Conservation Trust	7.1	Dec 2023
21. Economic Development District Application	21.1. Amend and resend updated Economic Development District (EDD) designation application with the EDA and examine opportunities available under a Revolving Loan Fund (RLF) program to be approved by EDA.	NMCOG	2.2	Mar 2023

TABLE 7: 2023 SCHEDULE OF GOALS

Activity or Project	Task	Lead Agency or Actor	Objective(s) Advanced	Milestone Target
22. Prepare for the 2024 CEDS Report and 2025-2029 CEDS	22.1. Evaluate small retail and service businesses adoption of internet-based service models and the compare internet-only businesses, brick-and-mortar businesses, and hybrid models to determine best ways to assist very small businesses in growth.	NMCOG, Small Business Centers	2.6	Dec 2023
	22.2. Investigate data sources to provide additional context to new business formation, including size and type of business.	NMCOG	2.6	Dec 2023
	22.3. Track Women-Owned-Businesses and Minority-Owned-Businesses regionally and make the list available to the public	NMCOG	2.6	Dec 2023
	22.4. Apply for funding for Five-Year CEDS Development	NMCOG	2.2	Mar 2023

5.2. Challenges and Mitigation

Two continuing challenges for local governments and CEDS project champions are capacity and funding. For many communities, there is limited professional staff capacity to take on additional tasks to pursue economic development projects including grant applications requiring match. Sustained efforts by volunteers or the phasing of projects have been successful in some cases, but may not work for all efforts. Access to resources can be a challenge from early project development to implementation.

The Commonwealth’s new One Stop for Growth application portal and new economic development funding programs were created for the purpose of offering multiple funding sources to help projects advance to the next stage. These competitive funding sources present new opportunities to move projects forward. However for some projects, the cost for implementation may be higher than local or state funding sources can provide and additional resources are needed. It can be very challenging to align timelines for state and federal funding programs, creating a funding gap that prevents some projects from proceeding.

5.3. EDA Assistance Needed

With the new American Rescue Plan Act of 2021, new federal funding has become available to state and local governments and through new federal funding opportunities, such as through the EDA. As guidance is issued, local governments and CEDS project champions will explore these funding opportunities. NMCOG staff are prepared to assist governmental and non-profit organizations in pursuing EDA assistance, as well as other federal and state funding programs, to advance CEDS projects.



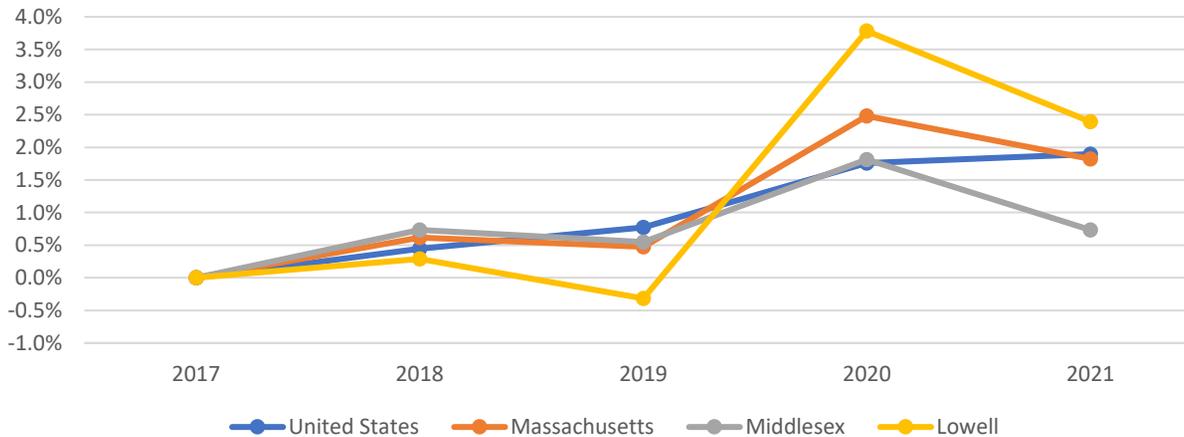
Ribbon cutting at the City of Lowell.

Appendix 1

Socioeconomic Data

Demographics: Population

FIGURE 1: POPULATION CHANGE IN % SINCE 2017 ACS, 2017 TO 2021



Source: U.S. Census Bureau, American Community Survey, One-Year data, Table B01001. *2020 1-year data is not available, so data from U.S. Census Bureau, Decennial Census, Table PL1 was used.

The 2022 CEDS Report included recently-released Decennial U.S. Census counts. At that time, the Greater Lowell region had a population of 310,009, which represented an increase of 8.1% since 2010. The most recent ACS figures, which represent an average over 2017-2021, estimated a population of 308,531 in Greater Lowell.

Although 1-year ACS margins of error are larger than 5-year ACS margins and are not available for communities in our region except for the City of Lowell, they can track shorter-term changes. This shows a decrease in population for the between 2020 Decennial Census count and 2021 ACS Estimates for the City of Lowell (-1.4%), Middlesex County (-1.1%), and Massachusetts (-0.6%). The United States continued to grow during that time, but by a smaller rate than previous years (0.1%).

TABLE 8: POPULATION IN THE REGION, STATE, AND NATION, 2007-11 TO 2017-2021

	2007-2011	2009-2013	2011-2015	2013-2017	2015-2019	2017-2021
United States	306,603,772	311,536,594	316,515,021	321,004,407	324,697,795	329,725,481
Massachusetts	6,512,227	6,605,058	6,705,586	6,789,319	6,850,553	6,991,852
Greater Lowell	284,876	291,027	297,449	302,306	304,280	308,531
City of Lowell	105,860	107,466	109,349	110,964	111,306	114,804
Region Outside Lowell	179,016	183,561	188,100	191,342	192,974	193,727

Source: U.S. Census Bureau, American Community Survey, Five-Year data, Table B01001.

TABLE 9: POPULATION IN THE REGION, STATE, AND NATION, 2017-2021

	2017	2018	2019	2020*	2021
United States	325,719,178	327,167,439	328,239,523	331,449,281	331,893,745
Massachusetts	6,859,819	6,902,149	6,892,503	7,029,917	6,984,723
Middlesex County	1,602,947	1,614,714	1,611,699	1,632,002	1,614,742
City of Lowell	111,343	111,666	110,990	115,554	114,005

Source: U.S. Census Bureau, American Community Survey, One-Year data, Table B01001. 2020

Demographics: Age

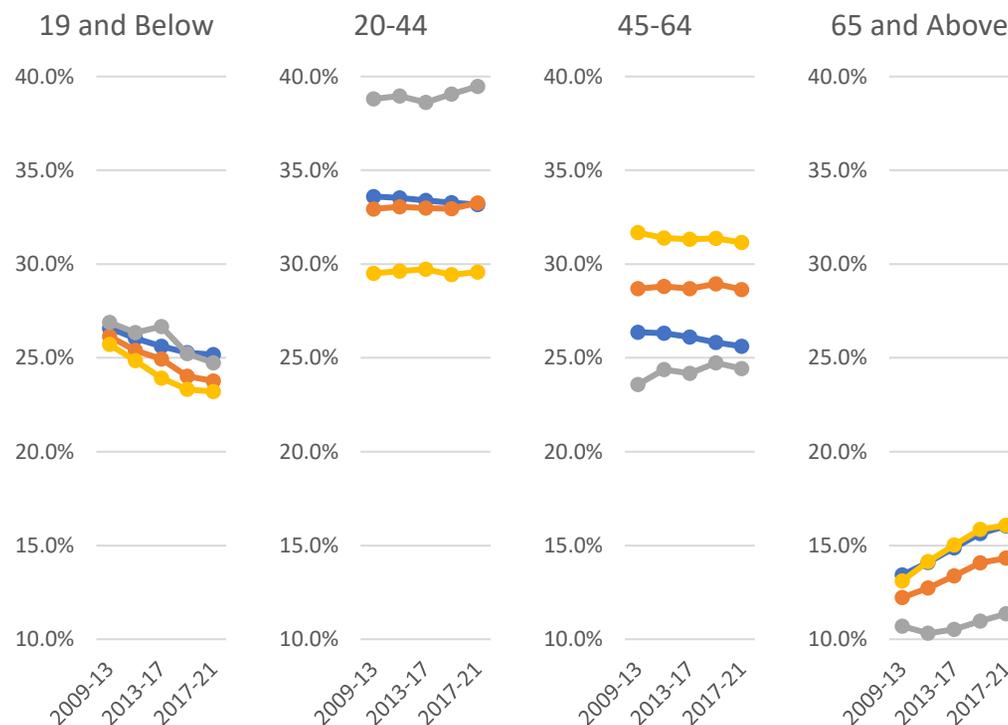
TABLE 10: AGE COHORTS IN THE REGION, STATE, AND NATION, 2007-11 TO 2015-19

		2009-2013	2011-2015	2013-2017	2015-2019	2017-2021
United States	19 and below	26.6%	26.0%	25.6%	25.3%	25.2%
	20-44	33.6%	33.5%	33.4%	33.3%	33.2%
	45-64	26.4%	26.3%	26.1%	25.8%	25.6%
	65 and above	13.4%	14.1%	14.9%	15.6%	16.0%
Mass.	19 and below	24.5%	24.0%	23.5%	23.1%	22.9%
	20-44	33.6%	33.5%	33.5%	33.6%	33.6%
	45-64	27.8%	27.8%	27.6%	27.2%	26.9%
	65 and above	14.1%	14.7%	15.5%	16.2%	16.5%
Greater Lowell	19 and below	26.2%	25.4%	24.9%	24.0%	23.8%
	20-44	32.9%	33.1%	33.0%	33.0%	33.3%
	45-64	28.7%	28.8%	28.7%	28.9%	28.6%
	65 and above	12.2%	12.7%	13.4%	14.1%	14.3%
City of Lowell	19 and below	26.9%	26.3%	26.7%	25.2%	24.7%
	20-44	38.8%	39.0%	38.6%	39.1%	39.5%
	45-64	23.6%	24.4%	24.2%	24.7%	24.4%
	65 and above	10.7%	10.3%	10.5%	11.0%	11.4%
Region Outside Lowell	19 and below	25.7%	24.8%	23.9%	23.3%	23.2%
	20-44	29.5%	29.6%	29.7%	29.4%	29.6%
	45-64	31.7%	31.4%	31.3%	31.4%	31.1%
	65 and above	13.1%	14.1%	15.0%	15.9%	16.1%

This CEDS Report will measure change in age trends by comparing 2015-19 data to 2017-21 data. Trends have generally continued, with a few exceptions. For example, Greater Lowell's proportion of "19 and Below" declined slightly to 24%, decreasing as a proportion but, unlike previous years, growing in absolute numbers. This was driven by the City of Lowell: it had an increase in that cohort (28,090 to 28,402). The remainder of the region decreased slightly during that time (45,031 to 44,945).

The two working-age cohorts held relatively steady as a proportion of the population. 20-44 grew in Greater Lowell, both inside and outside the City. This cohort has been growing steadily and represents a potential strength area. The cohort aged 45-64 also grew in the City, but declined in the suburbs. The "65 and Above" category remained small proportionally without as much growth as in previous years, with most recent growth within Lowell.

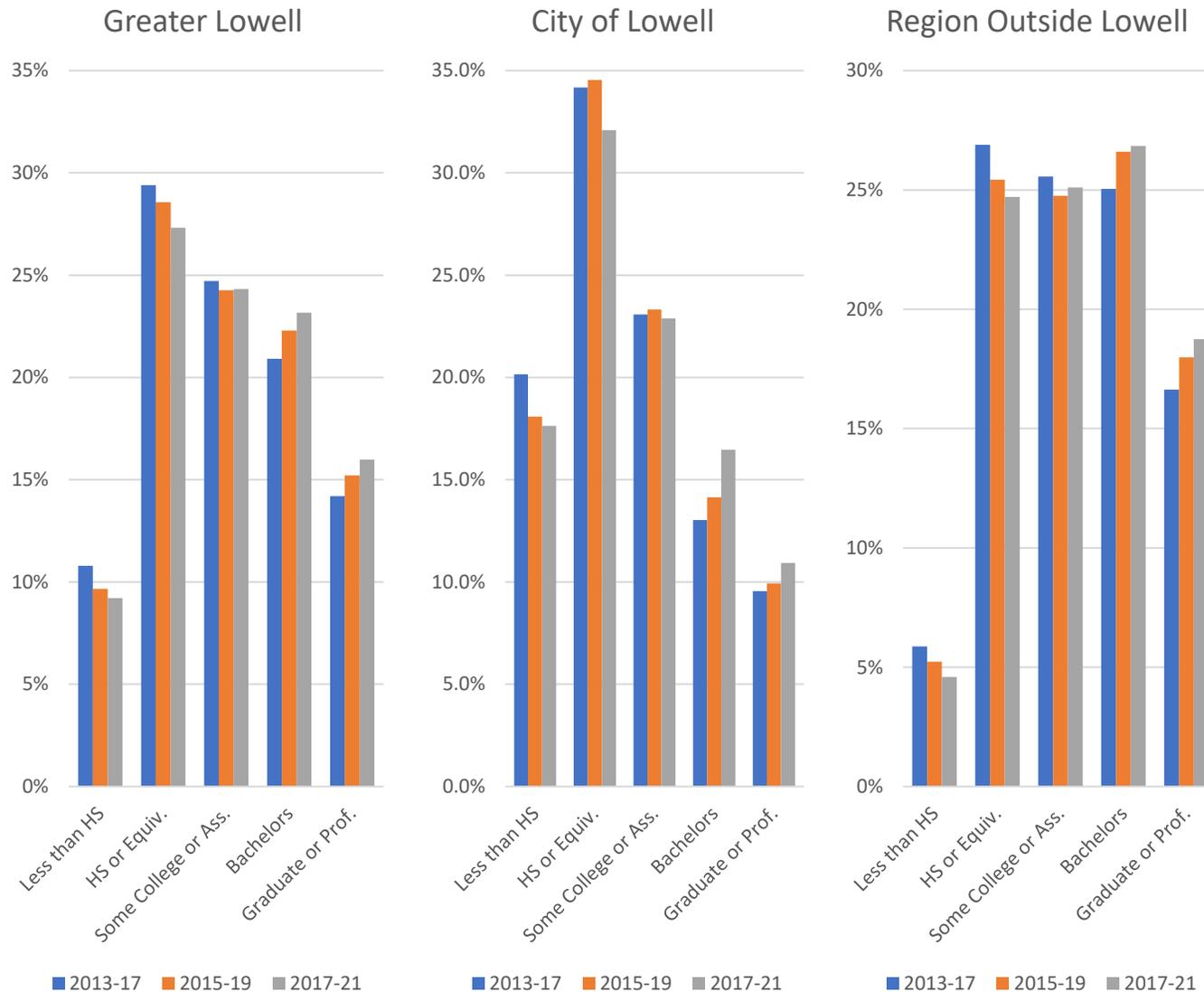
FIGURE 2: POPULATION CHANGE BY AGE CATEGORY, 2009-13 TO 2017-21



Source: U.S. Census Bureau, American Community Survey, Five-Year data, Table B01001.

Demographics: Educational Attainment

FIGURE 3: PROPORTION OF POPULATION 25 AND OVER BY EDUCATIONAL ATTAINMENT, BY REGION AND YEAR



The region has a higher level of educational achievement than the U.S. (roughly 4 points higher in Bachelors or above), and the trend of improvement observed in the last CEDS Report has continued. The number and proportion of Greater Lowell residents with a Bachelors or Graduate degree has increased (by 15% and 17% over four years, respectively) while the number with less than a High School degree has declined (by 11% over four years). This is true both inside and outside Lowell, with the proportion without at least some post-secondary education rapidly shrinking and with a bachelor's degree rapidly growing in the City of Lowell.

Additional analysis by age or place of origin could provide deeper insights into these changes. For example, Lowell's growth in High School graduates or above was concentrated to those under 65, but growth in graduate degrees in particular was concentrated on those 65 or older, suggesting a need to encourage higher levels of education along with making sure all levels of attainment have tracks to quality jobs. As another example, the number of foreign-born residents without a high-school degree increased slightly in the City of Lowell.

See Table 11: Proportion of Population 25 and over by Educational Attainment in the Region, State, and Nation, 2011-15 to 2015-19 on next page.

Source: U.S. Census Bureau, American Community Survey, Five-Year data, Table B06009.

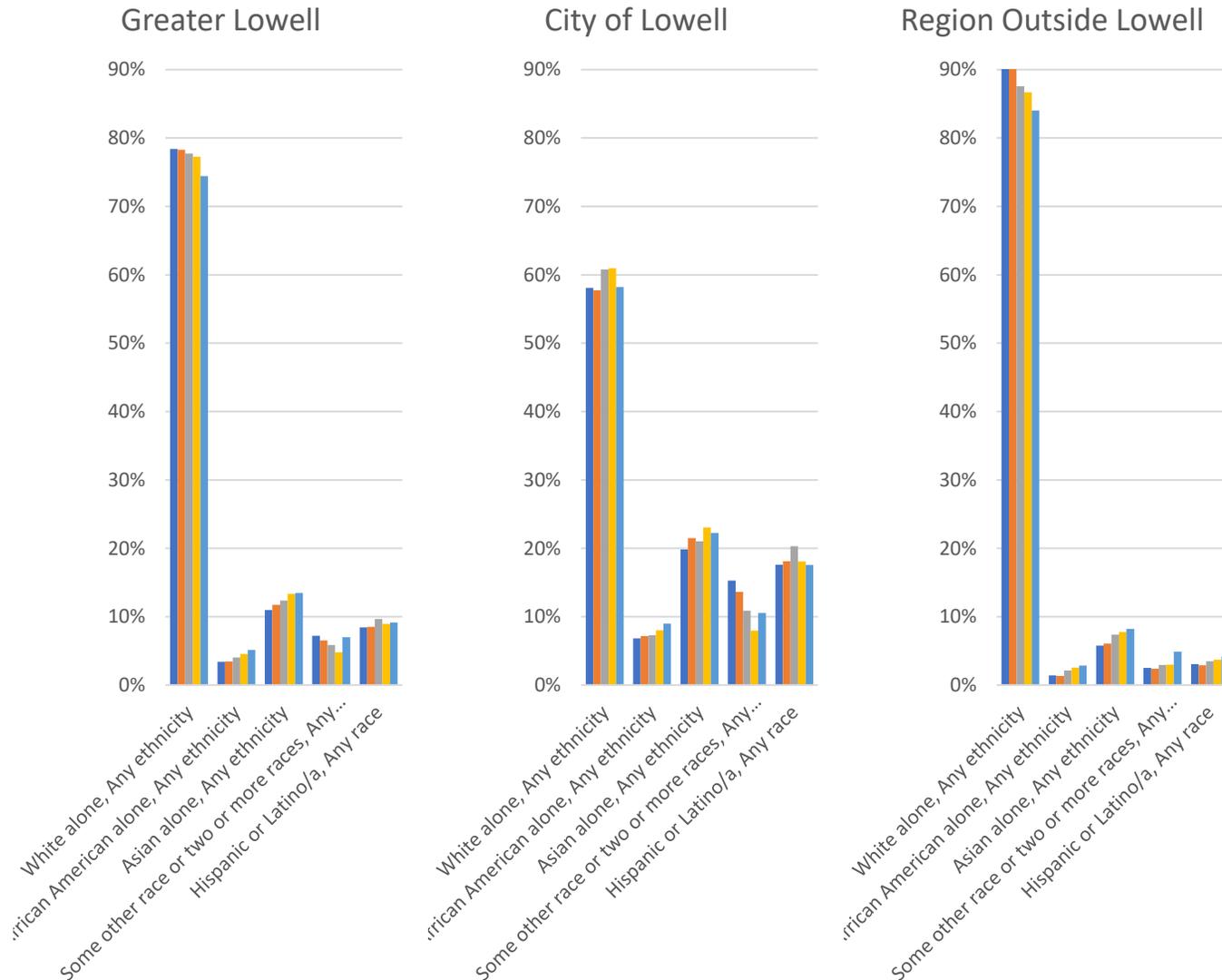
TABLE 11: PROPORTION OF POPULATION 25 AND OVER BY EDUCATIONAL ATTAINMENT IN THE REGION, STATE, AND NATION, 2011-15 TO 2015-19

		2011-15	2013-17	2015-19
United States	Less than high school graduate	12.7%	12.0%	11.1%
	High school graduate (includes equivalency)	27.3%	27.0%	26.5%
	Some college or associate's degree	29.1%	28.9%	28.7%
	Bachelor's degree	19.1%	19.8%	20.6%
	Graduate or professional degree	11.8%	12.4%	13.1%
Massachusetts	Less than high school graduate	9.7%	9.2%	8.8%
	High school graduate (includes equivalency)	24.7%	24.0%	23.2%
	Some college or associate's degree	23.5%	23.0%	22.8%
	Bachelor's degree	23.4%	24.1%	24.8%
	Graduate or professional degree	18.7%	19.6%	20.4%
Greater Lowell	Less than high school graduate	10.8%	9.7%	9.2%
	High school graduate (includes equivalency)	29.4%	28.6%	27.3%
	Some college or associate's degree	24.7%	24.3%	24.3%
	Bachelor's degree	20.9%	22.3%	23.2%
	Graduate or professional degree	14.2%	15.2%	16.0%
City of Lowell	Less than high school graduate	20.2%	18.1%	17.6%
	High school graduate (includes equivalency)	34.2%	34.5%	32.1%
	Some college or associate's degree	23.1%	23.3%	22.9%
	Bachelor's degree	13.0%	14.1%	16.5%
	Graduate or professional degree	9.6%	9.9%	10.9%
Region Outside Lowell	Less than high school graduate	5.9%	5.2%	4.6%
	High school graduate (includes equivalency)	26.9%	25.4%	24.7%
	Some college or associate's degree	25.6%	24.8%	25.1%
	Bachelor's degree	25.0%	26.6%	26.8%
	Graduate or professional degree	16.6%	18.0%	18.8%

Source: U.S. Census Bureau, American Community Survey, Five-Year data, Table B06009.

Demographics: Race/Ethnicity

FIGURE 4: RACE AND ETHNICITY, BY REGION AND YEAR



While the region remains predominately white (69.4% White alone, not Hispanic or Latino/a according to the 2017-21 ACS), the total number of white residents decreased 7.2% between 2010 and 2020, while several other races experienced population increases. This included Asian, the second largest racial or ethnic group in the region, which saw a 35.5% increase, and Hispanic or Latino/a, the third largest racial or ethnic group, which saw a 48.5% increase (see Table 12 and Table 13 on the next page for more information).

The 2017-21 ACS indicates an acceleration of these trends in the region outside Lowell. After several years of increase of proportion in the “White alone” category, that proportion shrank from 61.0% to 58.2% between 2015-19 and 2017-21. The proportion of population identifying as Black or African American or some other race or two or more races increased. Notably, the proportion of Hispanic or Latino/a in the City continued the trend of decreasing, and is now at 2009-13 levels.

Evaluation of the disparity of economic outcomes among races and ethnicities are beyond the scope of this report, however, this should be studied further to develop actions for addressing equity and inclusion in the economy.

Source: U.S. Census Bureau, American Community Survey, Five-Year data, Table B03002.

TABLE 12: GREATER LOWELL POPULATION BY RACE, 2010 AND 2020 DECENNIAL CENSUS

Race	2010 Population	2020 Population	% Change Between 2010 and 2020	% of Total Population in 2020
White	216,755	201,156	-7.2%	64.9%
Black	8,777	15,378	75.2%	5.0%
Hispanic or Latino	22,704	33,722	48.5%	10.9%
Asian	31,843	43,143	35.5%	13.9%
American Indian & Alaskan Native	312	261	-16.3%	0.1%
Some Other Race	1,926	3,905	102.8%	1.3%
2 or more races	4,584	12,444	171.5%	4.0%

Source: U.S. Census Bureau 2010 Census and 2020 Census via Donahue Institute

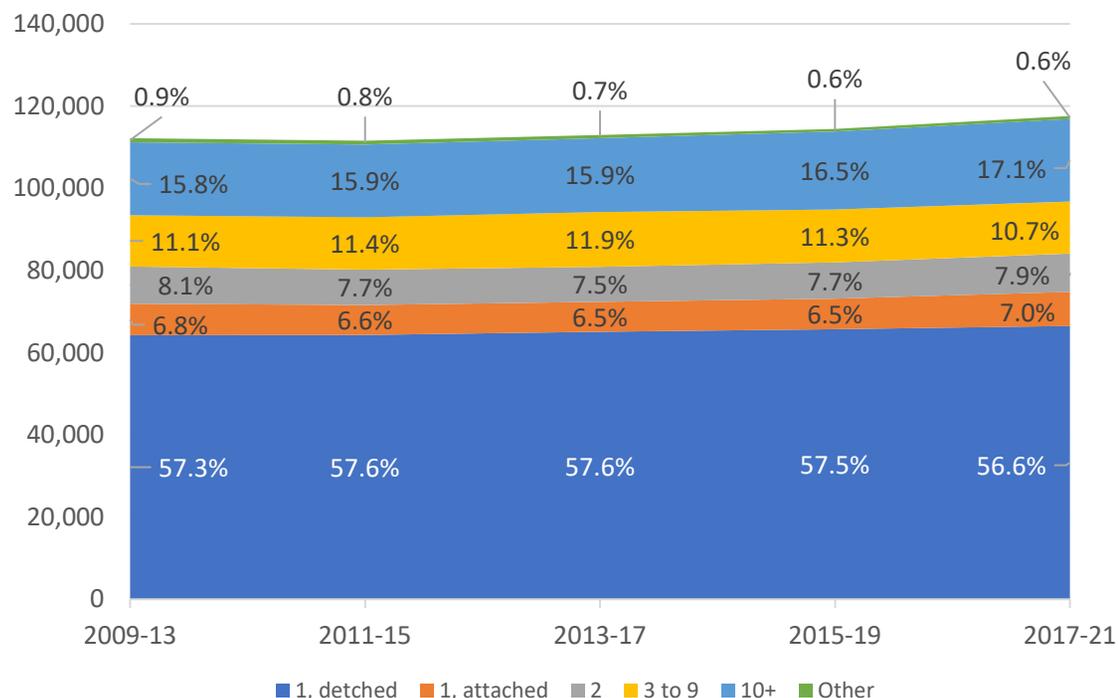
TABLE 13: PROPORTION OF POPULATION BY RACE BY THE REGION, STATE, AND NATION, 2007-11 TO 2015-19

		2009-13	2011-15	2013-17	2015-19	2017-21
United States	White alone, Any ethnicity	74.0%	73.6%	73.0%	72.5%	68.2%
	Black or African American alone, Any ethnicity	12.6%	12.6%	12.7%	12.7%	12.6%
	Asian alone, Any ethnicity	4.9%	5.1%	5.4%	5.5%	5.7%
	Some other race or two or more races, Any ethnicity	8.5%	8.7%	9.0%	9.3%	13.6%
	Hispanic or Latino/a, Any race	16.6%	17.1%	17.6%	18.0%	18.4%
Massachusetts	White alone, Any ethnicity	80.5%	79.6%	78.9%	78.1%	74.5%
	Black or African American alone, Any ethnicity	6.9%	7.1%	7.4%	7.6%	7.3%
	Asian alone, Any ethnicity	5.6%	6.0%	6.3%	6.6%	6.9%
	Some other race or two or more races, Any ethnicity	7.0%	7.3%	7.4%	7.7%	11.3%
	Hispanic or Latino/a, Any race	9.9%	10.6%	11.2%	11.8%	12.4%
Greater Lowell	White alone, Any ethnicity	78.4%	78.3%	77.7%	77.3%	74.4%
	Black or African American alone, Any ethnicity	3.4%	3.5%	4.0%	4.6%	5.1%
	Asian alone, Any ethnicity	11.0%	11.7%	12.4%	13.3%	13.4%
	Some other race or two or more races, Any ethnicity	7.2%	6.5%	5.9%	4.8%	7.0%
	Hispanic or Latino/a, Any race	8.4%	8.5%	9.7%	9.0%	9.2%
City of Lowell	White alone, Any ethnicity	58.1%	57.8%	60.8%	61.0%	58.2%
	Black or African American alone, Any ethnicity	6.8%	7.1%	7.3%	8.0%	9.0%
	Asian alone, Any ethnicity	19.8%	21.5%	21.0%	23.0%	22.2%
	Some other race or two or more races, Any ethnicity	15.3%	13.6%	10.9%	8.0%	10.6%
	Hispanic or Latino/a, Any race	17.6%	18.1%	20.3%	18.1%	17.6%
Region Outside Lowell	White alone, Any ethnicity	90.3%	90.2%	87.6%	86.7%	84.0%
	Black or African American alone, Any ethnicity	1.4%	1.3%	2.1%	2.6%	2.9%
	Asian alone, Any ethnicity	5.8%	6.1%	7.4%	7.7%	8.2%
	Some other race or two or more races, Any ethnicity	2.5%	2.4%	3.0%	3.0%	4.9%
	Hispanic or Latino/a, Any race	3.0%	2.9%	3.5%	3.7%	4.2%

Source: U.S. Census Bureau, American Community Survey, Five-Year data, Table B03002.

Housing: Housing Units

FIGURE 5: HOUSING UNITS IN GREATER LOWELL BY # OF UNITS IN BLDG.



Source: U.S. Census Bureau, American Community Survey, Five-Year data, Table B25024.

TABLE 14: GREATER LOWELL HOUSING UNITS, BY SIZE OF BUILDING, 2007-11 TO 2015-19

Size of Building	2009-13	2011-15	2013-17	2015-19	2017-21
1-unit, detached	64,287	64,292	65,060	65,748	66,515
1-unit, attached	7,621	7,311	7,332	7,391	8,284
2 units	9,078	8,625	8,474	8,836	9,323
3-4 units	6,886	6,474	6,890	6,876	6,865
5-9 units	5,570	6,252	6,500	6,016	5,769
10-19 units	6,009	6,014	6,324	6,442	6,119
20 or more units	11,768	11,695	11,646	12,490	13,999
Mobile Home or other	1,004	915	745	638	726
Total	112,223	111,578	112,971	114,437	117,600

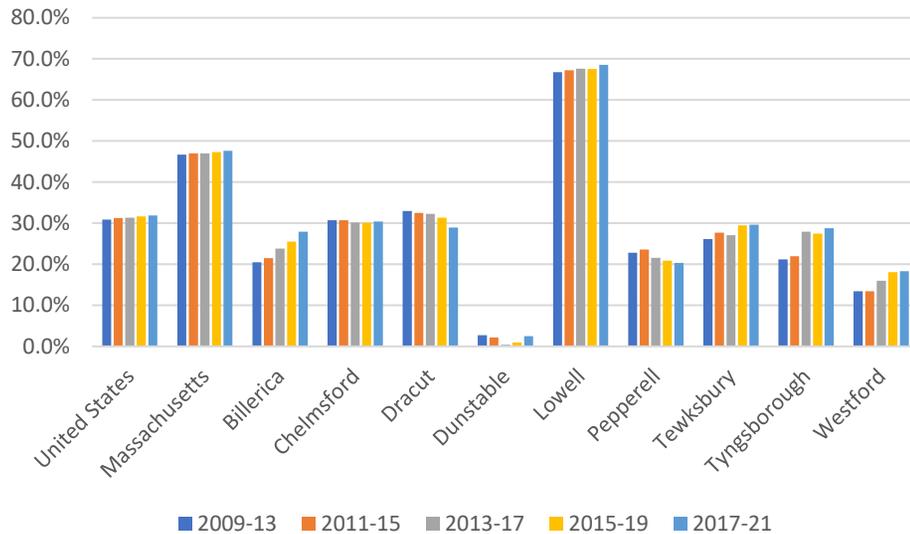
Source: U.S. Census Bureau, American Community Survey, Five-Year data, Table B25024.

The mix of housing in Greater Lowell is important, as it reflects Objective 2.5 (supporting diverse rental units) and, more broadly, represents the ability to house families with diverse preferences, incomes, and needs—important to both quality of life and the workforce.

The long-term trend of a growing number of units continued, but has accelerated even more between 2015-19 and 2017-21. However, it is important to note that the five-year data does not fully cover the pandemic or post-pandemic years (permit data is provided to give a more accurate picture of recent trends).

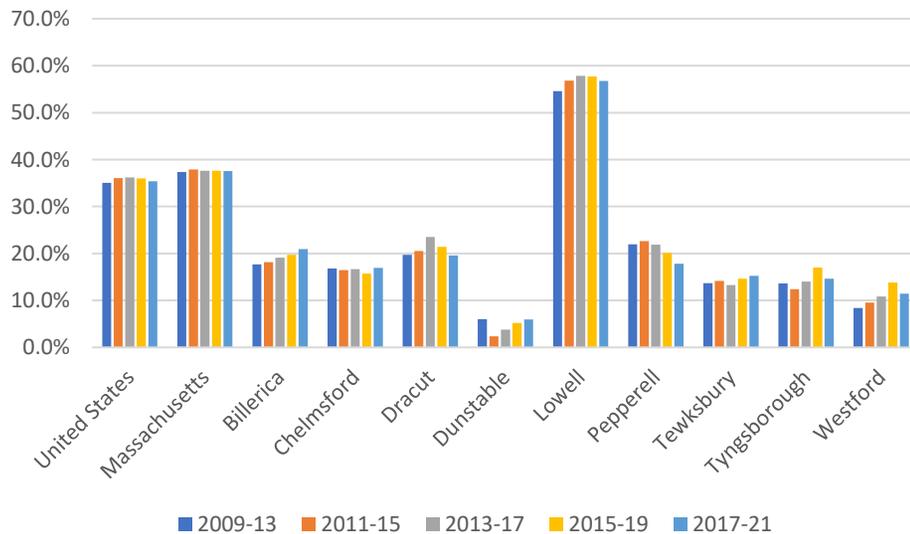
Sticking to long-term trends, the growth rate of units in buildings containing 10 or more units (6.3% growth between 2015-2019 and 2017-21) has been higher than the overall rate (2.8% during the same period). Single family attached also experienced a high growth rate (12.1%), while single family detached was second-lowest proportionately (1.2%) even as 767 units were added.

FIGURE 6: HOUSING, PERCENT ATTACHED OR MULTIFAMILY (UNITS)



Source: U.S. Census Bureau, American Community Survey, Five-Year data, Table B25032.

FIGURE 7: HOUSING, PERCENT RENTAL (UNITS)



Source: U.S. Census Bureau, American Community Survey, Five-Year data, Table B25003.

Although Greater Lowell’s percent attached or multifamily has grown in the recent ACS, it still lags Massachusetts. Billerica, Lowell, and Tyngsborough’s trends continued, while other towns were close to steady or lost units proportionately. When evaluating the percentage of rental, Greater Lowell also lags behind Massachusetts and the United States. The proportion of rental units in Greater Lowell has stayed steady since the 2013-17 period, and most communities have held steady or declined.

The COVID-19 Pandemic may have impacted living patterns, which would not be represented by this data. More people are living outside large cities like Boston because of the ability to telecommute.

TABLE 15: HOUSING UNITS BY COMMUNITY, STATE, AND NATION, PERCENT RENTER-OCCUPIED, 2007-11 TO 2015-19

	2009-13	2011-15	2013-17	2015-19	2017-21
US	35.1%	36.1%	36.2%	36.0%	35.4%
MA	37.3%	37.9%	37.6%	37.6%	37.6%
Billerica	17.7%	18.1%	19.1%	19.7%	20.9%
Chelmsford	16.8%	16.5%	16.7%	15.7%	16.9%
Dracut	19.7%	20.5%	23.5%	21.4%	19.6%
Dunstable	6.0%	2.4%	3.8%	5.2%	6.0%
Lowell	54.6%	56.8%	57.8%	57.7%	56.8%
Pepperell	22.0%	22.6%	21.9%	20.2%	17.8%
Tewksbury	13.7%	14.2%	13.3%	14.7%	15.3%
Tyngsborough	13.6%	12.4%	14.0%	17.0%	14.6%
Westford	8.4%	9.6%	10.8%	13.8%	11.5%

Source: U.S. Census Bureau, American Community Survey, Five-Year data, Table B25032

Housing: Permits

FIGURE 8: UNITS PERMITTED IN GREATER LOWELL BY BUILDING SIZE, 3-MONTH ROLLING AVERAGE, 2020-2022

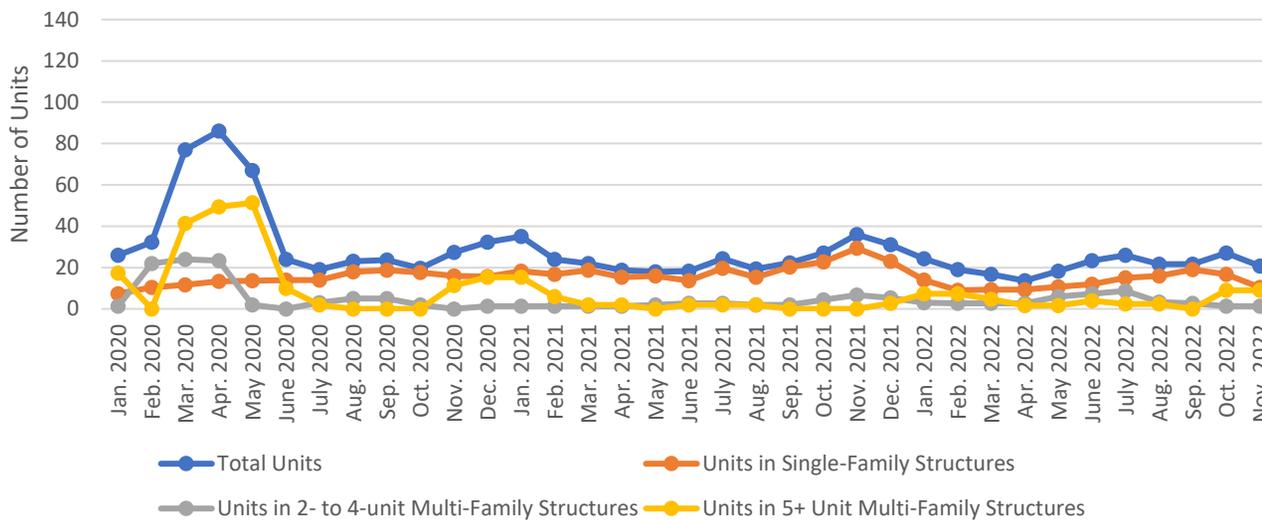
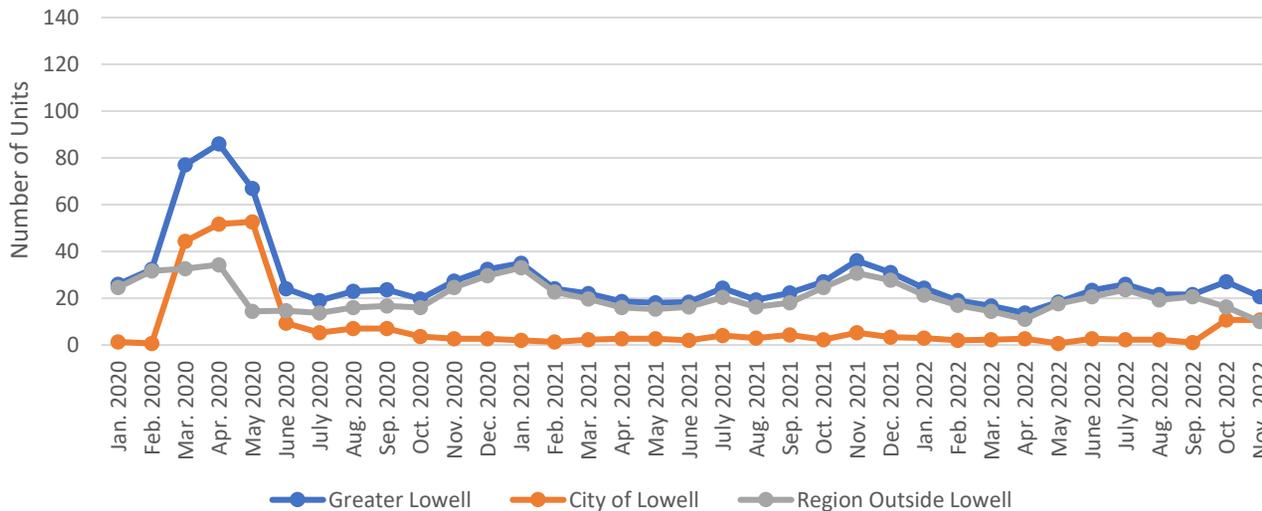


FIGURE 9: UNITS PERMITTED BY REGION, 3-MONTH ROLLING AVERAGE, 2020-2022



Source: U.S. Census Bureau, Building Permits Survey, via Department of Housing and Urban Development (HUD) State of the Cities Data Systems (SOCDS) Database. <https://socds.huduser.gov/permits/> Accessed January 20, 2023.

Housing permit data is collected in the U.S. Census Bureau's Building Permits Survey at the permit-issuing jurisdiction level. Final monthly data is published in May of the following calendar year annually. Preliminary data was used when final data was not available for the 2022 calendar year. Because of differences in the way jurisdictions report permit data, it may not capture or classify all permits accurately. Therefore, this data should be considered as estimates only. However, it provides a much more recent estimate of housing production than the ACS data used in previous sections.

Permitting activity has subsided considerably since the period analyzed by 2022's report. In early 2019, multiple large projects were permitted inside and outside the City of Lowell. Since then, the City of Lowell's permitting activity has been very low, and most permitting activity has been for single or small groups of single-family houses outside Lowell. This has resulted in a rolling average of 20-40 units permitted per month, a low number relative to previous years.

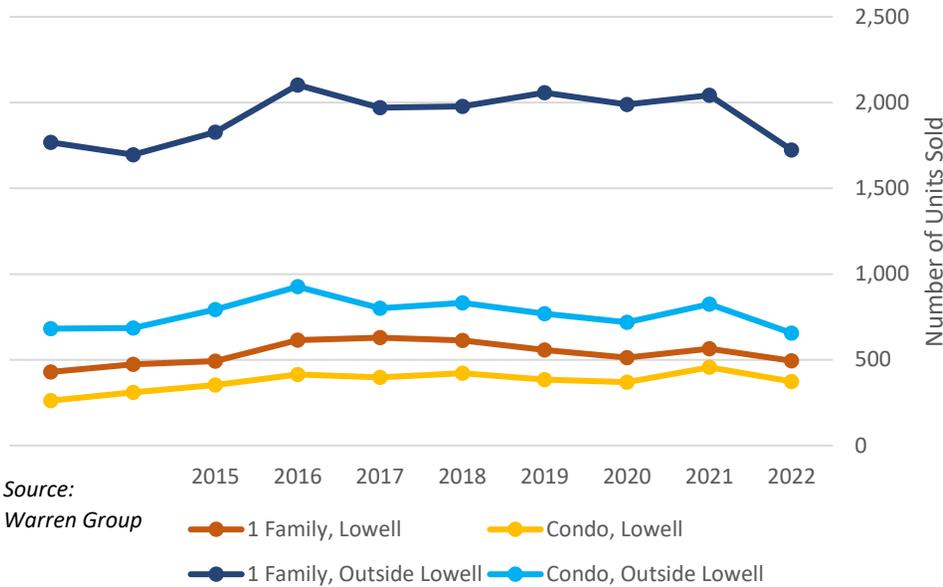
Notably, many units permitted in previous years are under construction now. In addition, several large projects are currently in pre-permitting.

TABLE 16: UNITS PERMITTED BY REGION BY BUILDING SIZE, 2019-2021*

Year	Period	Greater Lowell						City of Lowell						Region Outside Lowell					
		Total Units	Units in Single-Family	Units in All Multi-Family	Units in 2-unit Multi-Family	Units in 3- and 4-unit Multi-	Units in 5+ Unit Multi-Family	Total Units	Units in Single-Family Structures	Units in All Multi-Family Structures	Units in 2-unit Multi-Family Structures	Units in 3- and 4-unit Multi-Family	Units in 5+ Unit Multi-Family	Total Units	Units in Single-Family Structures	Units in All Multi-Family Structures	Units in 2-unit Multi-Family Structures	Units in 3- and 4-unit Multi-Family	Units in 5+ Unit Multi-Family
2020	Jan	8	8	0	0	0	0	0	0	0	0	0	0	8	8	0	0	0	0
2020	Feb	10	8	2	2	0	0	2	0	2	2	0	0	8	8	0	0	0	0
2020	Mar	79	15	64	64	0	0	0	0	0	0	0	0	79	15	64	64	0	0
2020	Apr	142	12	130	6	0	124	131	1	130	6	0	124	11	11	0	0	0	0
2020	May	37	13	24	0	0	24	24	0	24	0	0	24	13	13	0	0	0	0
2020	Jun	22	16	6	0	0	6	3	3	0	0	0	0	19	13	6	0	0	6
2020	Jul	13	13	0	0	0	0	1	1	0	0	0	0	12	12	0	0	0	0
2020	Aug	22	13	9	6	3	0	12	3	9	6	3	0	10	10	0	0	0	0
2020	Sep	34	28	6	6	0	0	8	2	6	6	0	0	26	26	0	0	0	0
2020	Oct	15	15	0	0	0	0	1	1	0	0	0	0	14	14	0	0	0	0
2020	Nov	10	10	0	0	0	0	2	2	0	0	0	0	8	8	0	0	0	0
2020	Dec	57	23	34	0	0	34	5	5	0	0	0	0	52	18	34	0	0	34
2021	Jan	30	14	16	4	0	12	1	1	0	0	0	0	29	13	16	4	0	12
2021	Feb	18	18	0	0	0	0	0	0	0	0	0	0	18	18	0	0	0	0
2021	Mar	24	18	6	0	0	6	3	3	0	0	0	0	21	15	6	0	0	6
2021	Apr	24	20	4	4	0	0	4	4	0	0	0	0	20	16	4	4	0	0
2021	May	8	8	0	0	0	0	1	1	0	0	0	0	7	7	0	0	0	0
2021	Jun	22	20	2	2	0	0	3	3	0	0	0	0	19	17	2	2	0	0
2021	Jul	25	13	12	6	0	6	2	2	0	0	0	0	23	11	12	6	0	6
2021	Aug	26	26	0	0	0	0	7	7	0	0	0	0	19	19	0	0	0	0
2021	Sep	7	7	0	0	0	0	0	0	0	0	0	0	7	7	0	0	0	0
2021	Oct	34	28	6	6	0	0	6	0	6	6	0	0	28	28	0	0	0	0
2021	Nov	40	33	7	0	7	0	1	1	0	0	0	0	39	32	7	0	7	0
2021	Dec	34	27	7	4	3	0	9	7	2	2	0	0	25	20	5	2	3	0
2022	Jan	19	9	10	2	0	8	0	0	0	0	0	0	19	9	10	2	0	8
2022	Feb	20	6	14	0	0	14	0	0	0	0	0	0	20	6	14	0	0	14
2022	Mar	18	12	6	6	0	0	6	0	6	6	0	0	12	12	0	0	0	0
2022	Apr	12	10	2	2	0	0	1	1	0	0	0	0	11	9	2	2	0	0
2022	May	11	6	5	0	0	5	1	1	0	0	0	0	10	5	5	0	0	5
2022	Jun	32	16	16	16	0	0	0	0	0	0	0	0	32	16	16	16	0	0
2022	Jul	27	14	13	6	0	7	7	0	7	0	0	7	20	14	6	6	0	0
2022	Aug	19	15	4	4	0	0	0	0	0	0	0	0	19	15	4	4	0	0
2022	Sep	19	19	0	0	0	0	0	0	0	0	0	0	19	19	0	0	0	0
2022	Oct	27	23	4	4	0	0	3	3	0	0	0	0	24	20	4	4	0	0
2022	Nov	35	8	27	0	0	27	29	2	27	0	0	27	6	6	0	0	0	0
2022	Dec	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Housing: Home Sales

FIGURE 10: NUMBER OF SALES, GREATER LOWELL



Home sales data from Warren Group is among the most current data available in the CEDS report. This shows a statewide sales decrease of all property types of 8.4% in 2021 and 7.3% in 2022. Although the Greater Lowell region avoided that slump in 2021 (sales of all property types grew that year by 9.8%), the 2022 decrease in Greater Lowell was even more pronounced (shrinking by 16.4%).

This was especially concentrated in condo sales in the suburbs outside Lowell, which dropped by 168 or 20.4%. Single family home sales in the suburbs dropped almost as much proportionately, by 320 or 15.7%. The City of Lowell also saw drops—82 units or 18.0% in condo sales and 70 units or 12.4% in single family detached sales.

The combination of a constrained supply pushing up prices and higher interest rates likely are causing this sales slump, but it represents significant headwinds in achieving the CEDS goal of having appropriate housing throughout the region to ensure that businesses can expand and relocate to the region with the assurance that their workforce will be able to own, lease, or rent affordable, quality housing.

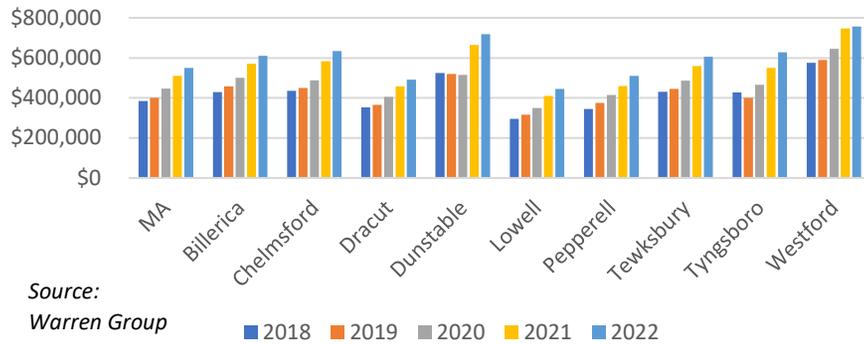
TABLE 17: REAL ESTATE SALES IN THE REGION, 2013 TO 2022

Year	Period	Greater Lowell			City of Lowell			Region Outside Lowell		
		Single Family	Condo	All Types	Single Family	Condo	All Types	Single Family	Condo	All Types
2013	Jan - Dec	2197	944	3815	429	262	999	1768	682	2816
2014	Jan - Dec	2170	997	3881	474	311	1103	1696	686	2778
2015	Jan - Dec	2321	1146	4201	493	353	1192	1828	793	3009
2016	Jan - Dec	2717	1341	4896	614	415	1423	2103	926	3473
2017	Jan - Dec	2600	1198	4590	629	397	1380	1971	801	3210
2018	Jan - Dec	2590	1253	4672	612	421	1389	1978	832	3283
2019	Jan - Dec	2615	1153	4566	558	385	1331	2057	768	3235
2020	Jan - Dec	2501	1088	4339	512	370	1225	1989	718	3114
2021	Jan - Dec	2607	1280	4766	564	456	1447	2043	824	3319
2022	Jan - Dec	2217	1030	3984	494	374	1197	1723	656	2787

Source: Warren Group

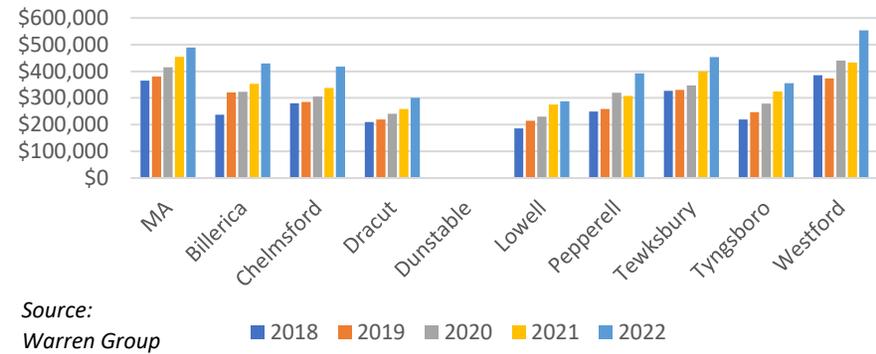
Housing: Median Home Sales Prices

FIGURE 12: SINGLE-FAMILY HOME MEDIAN SALES PRICE BY TOWN



Source:
Warren Group

FIGURE 11: CONDO HOME MEDIAN SALES PRICE BY TOWN



Source:
Warren Group

The last two years have had pronounced growth in median single family home sales price, especially Chelmsford, Dunstable, Lowell, Tewksbury, Tyngsborough, and Westford. All but Tyngsborough had seen slightly slower sales price growth in the years preceding 2021, but all six had greater than 15% growth in 2021. All towns' medians except Dracut, Lowell, and Pepperell remain above the Massachusetts median. Condo sales prices had similar jumps in 2022, especially in Billerica, Chelmsford, Pepperell, and Westford.

The slowdown in permitting noted previously seems to correspond with an increase in median prices and slow sales. This is a change from the last report, which showed growth in number of units with stable sales, reflecting an increase in rentals and decrease in turnovers.

TABLE 18: SINGLE FAMILY HOME MEDIAN SALES PRICE BY COMMUNITY AND STATE, 2016 TO 2020

Year	MA	Billerica	Chelmsford	Dracut	Dunstable	Lowell	Pepperell	Tewksbury	Tyngsboro	Westford
2018	\$385,000	\$429,500	\$436,000	\$353,326	\$525,000	\$295,000	\$344,900	\$429,900	\$427,500	\$575,000
2019	\$400,000	\$457,000	\$450,000	\$365,000	\$519,000	\$316,375	\$375,000	\$445,000	\$400,000	\$589,500
2020	\$447,000	\$499,900	\$487,500	\$405,000	\$515,000	\$350,000	\$415,000	\$486,050	\$465,000	\$646,000
2021	\$510,000	\$570,000	\$582,550	\$458,000	\$665,000	\$410,000	\$460,000	\$560,000	\$550,000	\$747,500
2022	\$550,000	\$610,000	\$635,000	\$491,750	\$719,000	\$445,000	\$510,000	\$605,000	\$627,500	\$757,500

Source: Warren Group

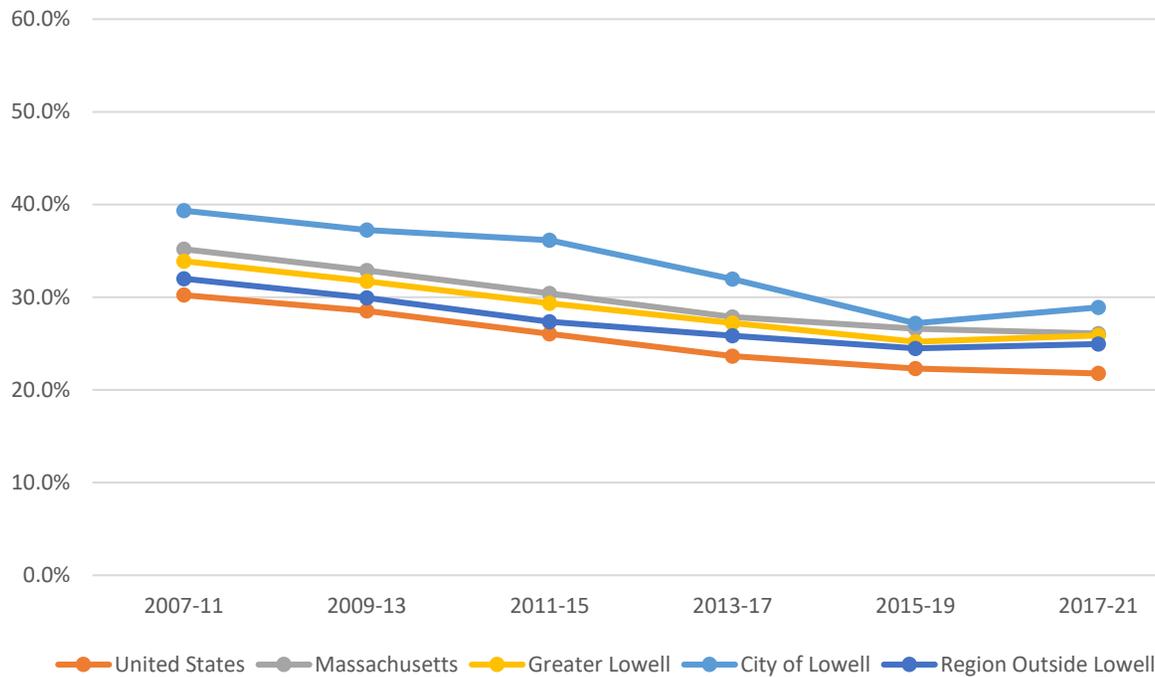
TABLE 19: CONDO HOME MEDIAN SALES PRICE, BY COMMUNITY AND STATE, 2016 TO 2020

Year	MA	Billerica	Chelmsford	Dracut	Dunstable	Lowell	Pepperell	Tewksbury	Tyngsboro	Westford
2018	\$364,900	\$237,450	\$280,000	\$210,000	N/A	\$186,000	\$248,750	\$327,000	\$220,000	\$385,000
2019	\$380,000	\$320,500	\$285,000	\$220,000	N/A	\$215,000	\$258,625	\$330,000	\$247,450	\$373,500
2020	\$415,000	\$323,750	\$305,250	\$241,000	N/A	\$230,000	\$320,000	\$347,000	\$279,000	\$440,000
2021	\$455,000	\$352,500	\$337,375	\$258,500	N/A	\$275,000	\$308,250	\$400,000	\$325,000	\$433,000
2022	\$488,830	\$430,000	\$418,000	\$300,000	N/A	\$287,500	\$392,500	\$453,250	\$355,000	\$554,000

Source: Warren Group

Housing: Housing Affordability, Owners

FIGURE 13: PROPORTION OF HOMEOWNER HHS WHO ARE COST-BURDENED, 2007-11 TO 2017-21



Source: U.S. Census Bureau, American Community Survey, Five-Year data, Table B25091.

TABLE 20: HOMEOWNER HOUSEHOLDS WHO ARE COST BURDENED IN THE REGION, STATE, AND NATION, 2007-11 TO 2015-19

	2009-13	2011-15	2013-17	2015-19	2017-21
United States	28.5%	26.0%	23.7%	22.3%	21.8%
Massachusetts	32.9%	30.4%	27.9%	26.6%	26.1%
Greater Lowell	31.7%	29.4%	27.2%	25.2%	25.9%
City of Lowell	37.2%	36.1%	31.9%	27.2%	28.9%
Region Outside Lowell	29.9%	27.4%	25.9%	24.5%	25.0%

Source: U.S. Census Bureau, American Community Survey, Five-Year data, Table B25091.

Please note the proportion of homeowner and renter households who are cost burdened charts utilize ACS data, so they do not reflect any impacts from COVID-19 or recent actions undertaken by the region.

The proportion of homeowners who are at moderately or severely burdened has been steadily declining in both the nation and the region. However, this changed between 2015-19 and 2017-21. Although the proportion of homeowner households who were cost-burdened in the United States and Massachusetts stayed close to the same (22.3% to 21.8% and 26.6% to 26.1% respectively), the region, both inside and outside of the City of Lowell, had an increase in the proportion of cost burdened owner households (27.2% to 28.9% and 24.5% to 25.0% respectively).

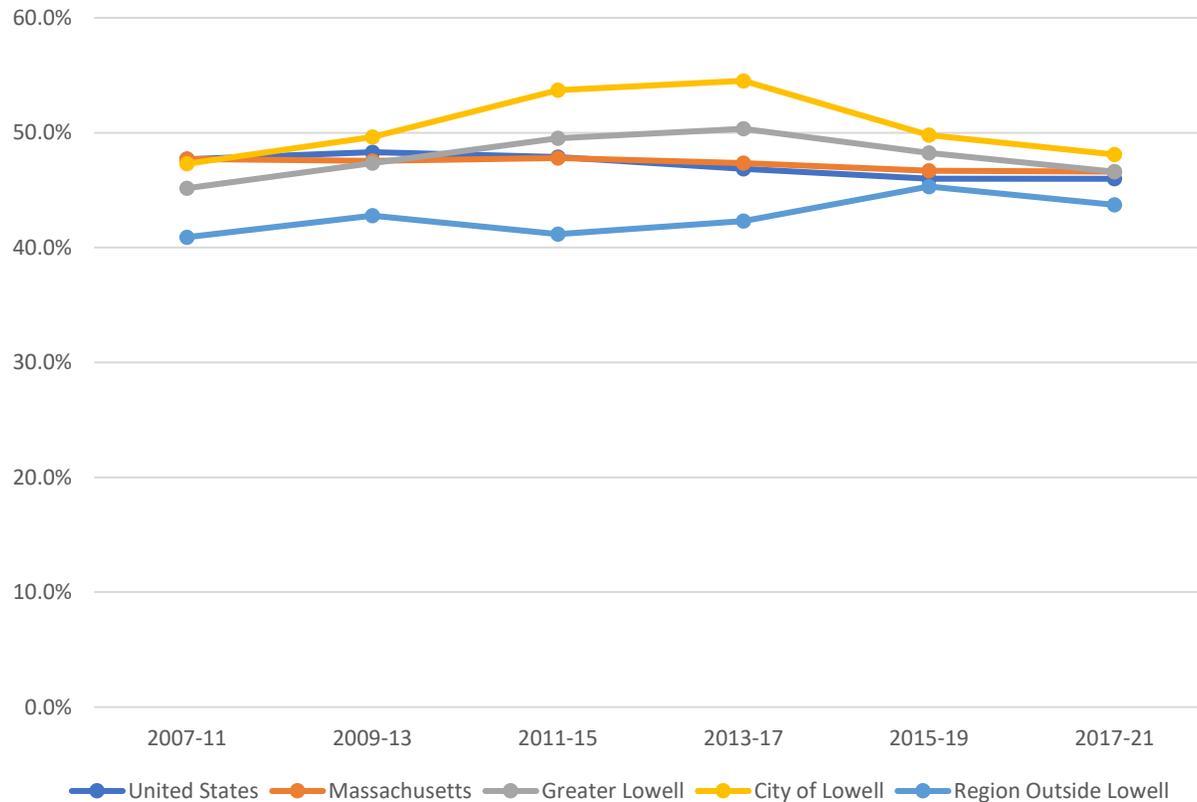
This trend among homeowners could also reflect that people with lower incomes are more often renting. Rental household burden has a more mixed trend. However, in the last ACS, the proportion of cost-burdened Greater Lowell renter households decreased, unlike Greater Lowell owner households (see next page).

DEFINING COST BURDENED

Public officials generally agree to a definition of affordable housing as that which costs no more than 30% of a household's total annual income. Households that spend between 30% and 50% of their annual incomes on housing and related costs (including basic utilities and fuels) are said to be "moderately" burdened while those spending more than half of their incomes are considered "severely" burdened.

Housing: Housing Affordability, Renters

FIGURE 14: PROPORTION OF RENTER HHS WHO ARE COST-BURDENED, 2007-11 TO 2017-21



The proportion of renters that are burdened are comparable to the U.S. After years of progress, the 2017-21 ACS showed virtually no change from the 2015-19 ACS for both United States and Massachusetts (at 46.0% and 46.6% of rental households cost burdened respectively).

That said, unlike the statistics for homeowner households, the region (both inside and outside Lowell) have seen recent improvement since the 2015-2019 ACS. Estimates for Greater Lowell as a whole are 46.6% of rental households burdened, with a slightly higher number in Lowell likely due to its lower incomes, and a slightly lower number in the suburbs.

Please note the proportion of homeowner and renter households who are cost burdened charts utilize ACS data, so they do not reflect any impacts from COVID-19 or recent actions undertaken by the region.

Source: U.S. Census Bureau, American Community Survey, Five-Year data, Table B25070.

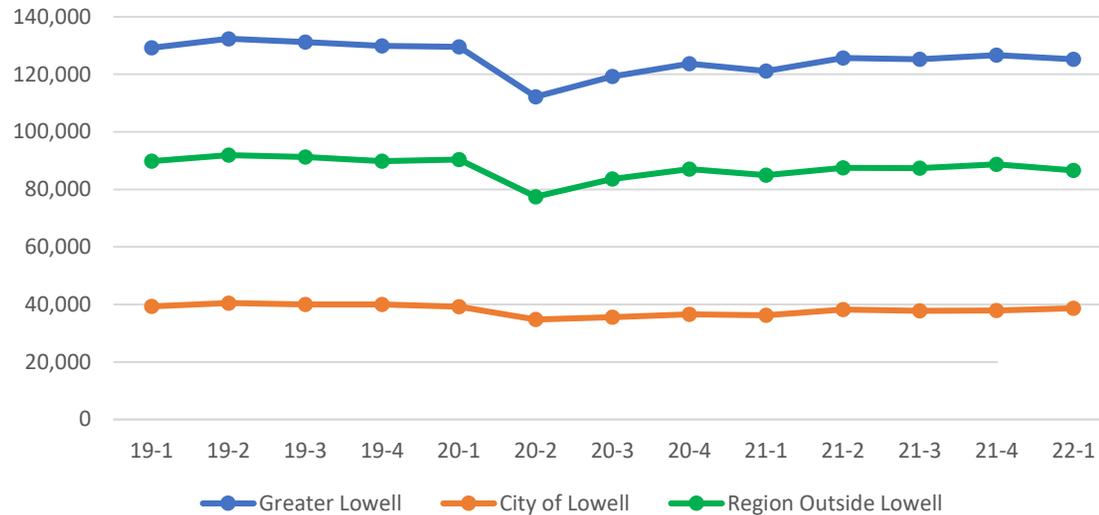
TABLE 21: RENTER HOUSEHOLDS WHO ARE COST BURDENED IN THE REGION, STATE, AND NATION, 2007-11 TO 2015-19

	2009-13	2011-15	2013-17	2015-19	2017-21
United States	48.3%	47.9%	46.8%	46.0%	46.0%
Massachusetts	47.6%	47.8%	47.4%	46.7%	46.6%
Greater Lowell	47.4%	49.5%	50.3%	48.2%	46.6%
City of Lowell	49.6%	53.7%	54.5%	49.8%	48.1%
Region Outside Lowell	42.8%	41.2%	42.3%	45.3%	43.7%

Source: U.S. Census Bureau, American Community Survey, Five-Year data, Table B25070.

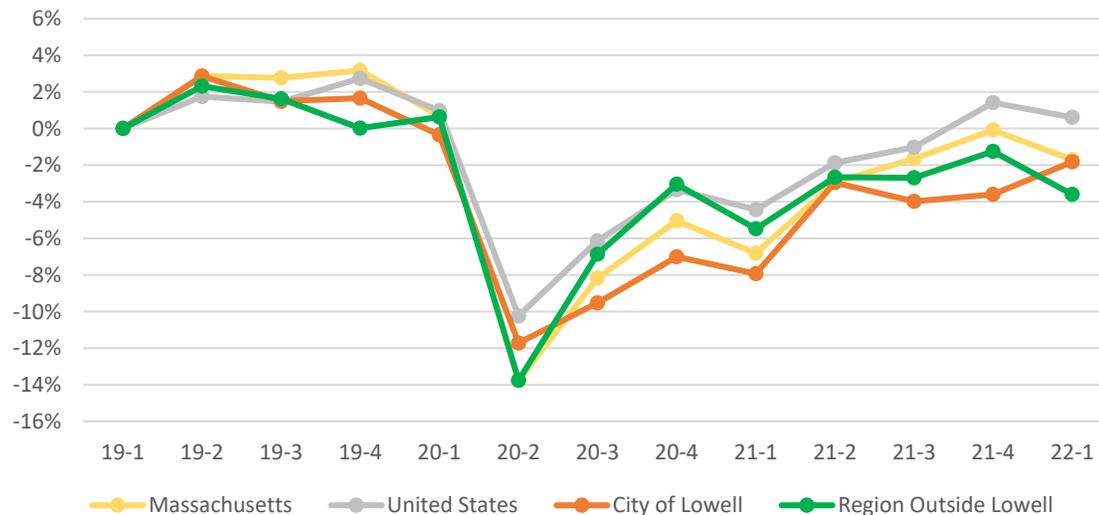
Commerce and Industry: Employment over Time

FIGURE 15: AVERAGE MONTHLY EMPLOYMENT, 2019 Q1 – 2021 Q2



Source: U.S. Bureau of Labor Statistics, Quarterly Census of Employment and Wages

FIGURE 16: CHANGE FROM 2019 Q1, # EMPLOYEES, 2019 Q1 - 2021 Q2



Source: U.S. Bureau of Labor Statistics, Quarterly Census of Employment and Wages. The chart above shows how each region changed as a proportion of 2019 Q1.

The data reflected in these charts reflects the number of establishments, employees, and weekly wages in firms located in Greater Lowell. It includes both public and private ownership. It is collected quarterly with most recent data from 2022 Q1; therefore, impacts of COVID-19 and any actions Greater Lowell took during the CEDS period may be represented.

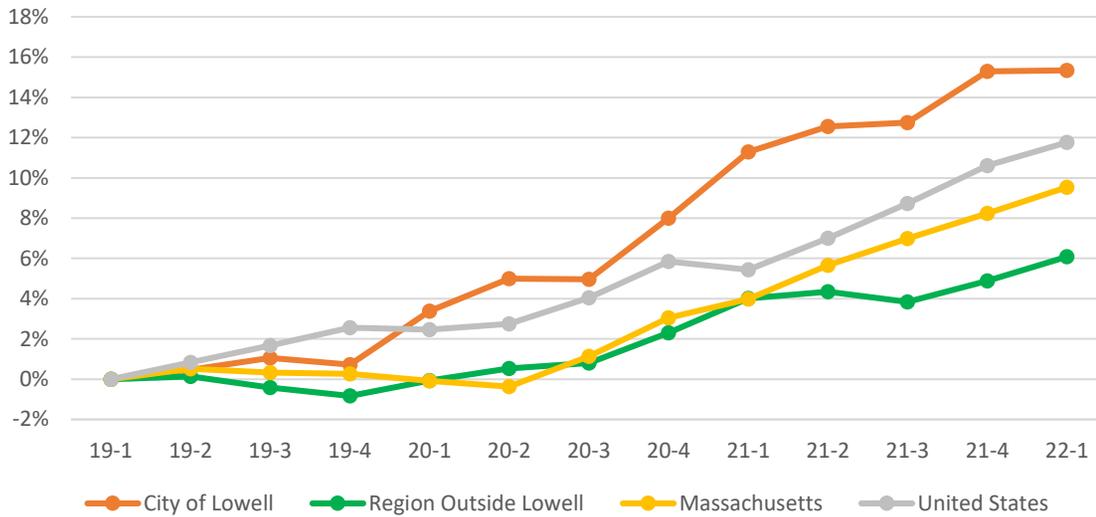
Even after two years from the low in Q2 of 2020, employment in the region has not recovered. Although national employment has almost returned to pre-pandemic levels as of Q4 2022, number of employees in firms in Massachusetts and the region is still 3.4% and 2.4%, respectively, below Q1 of 2020.

Although the dip in number of employees within the City of Lowell was not as severe as the rest of the region, its recovery has been slower. Notably, in the most recent quarter with reported data, Lowell employment grew, while the rest of the region, state, and nation declined. It is uncertain whether this is the beginning of a trend or a statistical anomaly.

Full tables of employment, establishments, and wages from 2020 Q1 through 2022 Q1 are on the following pages.

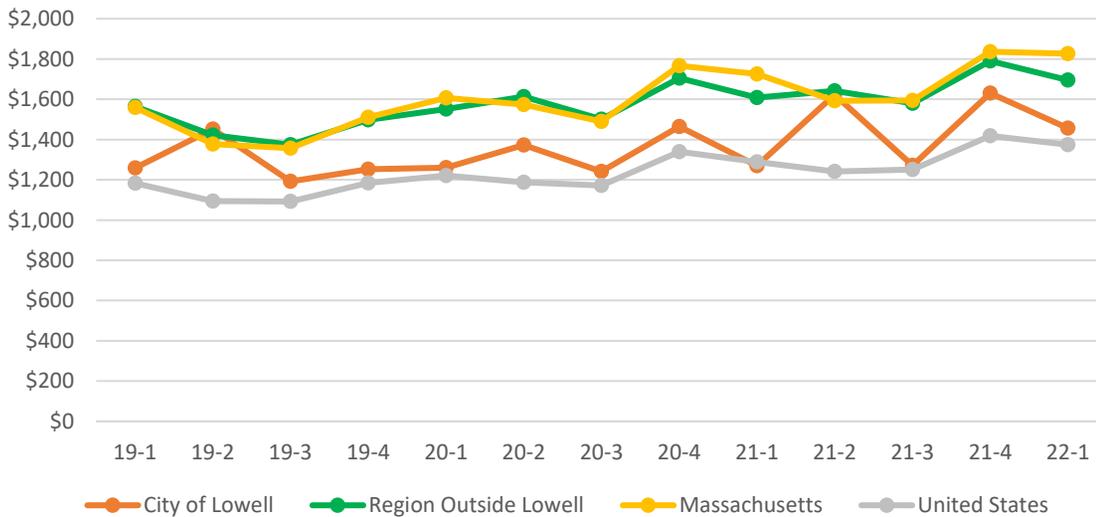
Commerce and Industry: Establishments and Wage over Time

FIGURE 17: NUMBER OF ESTABLISHMENTS CHANGE SINCE 2019, 2019 Q1 – 2022 Q1



Source: U.S. Bureau of Labor Statistics, Quarterly Census of Employment and Wages

FIGURE 18: AVERAGE WEEKLY WAGES, 2019 Q1 – 2022 Q1



Source: U.S. Bureau of Labor Statistics, Quarterly Census of Employment and Wages

The previous CEDS report noted the growth of number of establishments in Greater Lowell accelerated during COVID-19 from 1.3% between 2019 Q1 and 2020 Q1 to 5.5% between 2020 Q1 and 2021 Q1. Between 2021 Q1 and 2022 Q1, that growth slowed to 2.6%. The growth remained concentrated in the City of Lowell—the number of establishments in the City grew by 3.6% between 2021 Q1 and 2022 Q1 compared to 2.0% in the rest of region during the same period.

Greater Lowell’s change in average weekly wages continue to track more-or-less with the state and region, with the suburbs tracking closely with the state and the City skewing slightly above the national average. After a period of growth in late 2020, wages remained stagnant for nearly a year before another jump in late 2021. Occasional jumps in the City of Lowell’s average wages noted in 2019 Q2 and 2021 Q2 may be a reporting anomaly due to a smaller sample size.

Full tables of employment, establishments, and wages from 2019 Q1 through 2021 Q2 are on the following pages.

Commerce and Industry: Establishments and Employment by Industry

TABLE 22: ESTABLISHMENTS, EMPLOYEES, AND WEEKLY WAGE GREATER LOWELL COMPARISONS

	Number of Establishments (Q1)					Number of Employees (Q1)					Average Weekly Wage (Q1)				
	20	21	Change	22	Change	20	21	Change	22	Change	20	21	Change	22	Change
Goods-Producing	1,464	1,495	2.1%	1,519	1.6%	26,550	25,880	-2.5%	26,496	2.4%	\$2,169	\$2,129	-1.8%	\$2,178	2.3%
Natural Resources and Mining	3	9	200.0%	18	100.0%	11	59	436.4%	207	250.8%	\$506	\$783	54.8%	\$771	-1.6%
Construction	1,087	1,119	2.9%	1,140	1.9%	7,988	7,724	-3.3%	7,741	0.2%	\$1,422	\$1,398	-1.7%	\$1,516	8.5%
Manufacturing	362	325	-10.2%	355	9.2%	18,463	14,726	-20.2%	18,466	25.4%	\$2,500	\$2,270	-9.2%	\$2,472	8.9%
Service-Providing	8,009	8,498	6.1%	8,738	2.8%	103,073	95,271	-7.6%	98,734	3.6%	\$1,282	\$1,339	4.4%	\$1,473	10.1%
Trade, Transportation and Utilities	1,282	1,271	-0.9%	1,251	-1.6%	20,517	19,668	-4.1%	20,966	6.6%	\$1,000	\$986	-1.4%	\$1,300	31.9%
Information	147	146	-0.7%	171	17.1%	3,693	2,956	-20.0%	3,126	5.8%	\$2,441	\$2,501	2.4%	\$3,080	23.2%
Financial Activities	440	462	5.0%	469	1.5%	3,654	3,530	-3.4%	3,336	-5.5%	\$1,755	\$1,796	2.3%	\$1,870	4.1%
Professional and Business Services	1,375	1,448	5.3%	1,521	5.0%	23,200	23,422	1.0%	22,846	-2.5%	\$2,162	\$2,235	3.4%	\$2,381	6.5%
Education and Health Services	3,260	3,633	11.4%	3,773	3.9%	33,036	30,047	-9.0%	31,191	3.8%	\$979	\$993	1.4%	\$1,099	10.6%
Leisure and Hospitality	700	689	-1.6%	695	0.9%	11,363	8,402	-26.1%	9,950	18.4%	\$434	\$452	4.1%	\$481	6.4%
Other Services	678	713	5.2%	718	0.7%	3,702	3,315	-10.5%	3,436	3.7%	\$750	\$766	2.1%	\$811	5.9%
Public Administration	91	93	2.2%	92	-1.1%	3,236	3,163	-2.3%	3,200	1.2%	\$1,598	\$1,505	-5.8%	\$1,584	5.3%
Total, All Industries	9,473	9,993	5.5%	10,257	2.6%	129,621	121,150	-6.5%	125,232	3.4%	\$1,464	\$1,507	3.0%	\$1,622	7.6%

Source: U.S. Bureau of Labor Statistics, Quarterly Census of Employment and Wages via Massachusetts Department of Unemployment Assistance

Table 22's breakdown of employees and average wages by industries reveals that changes in employment and wages aren't evenly distributed. Employment in service-providing industries change from 2021 Q1 to 2022 Q2 did not make up its decline the year prior, and in fact, Financial Activities and Professional and Business Services continued to drop in number of employees. Although Information and Leisure and Hospitality grew during the last year, the drops the year prior were especially pronounced. Over the two-year period (2020 Q1 to 2022 Q1), the industries that lost the largest proportionately were Information (15.4%, or 567 jobs), and Leisure and Hospitality (12.4%, or 1,413 jobs). Although Education and Health Services had a decline of only 5.6%, this is such a large portion of Greater Lowell's economy that this represents the largest number of jobs lost in an industrial supersector: 1,845.

Wage growth between 2020 Q1 and 2022 Q21 was scattered amongst many industries, but most significantly in Trade, Transportation, and Utilities (30.0% growth) and Natural Resources and Mining (52.4% growth). However, Natural Resources and Mining still has the second-smallest weekly average wage after Leisure and Hospitality (\$771 vs. \$481 in 2022 Q1). Despite the Information supersector's decline in number of jobs, it had the third-highest wage increase at 26.2% over the two-year period. This more than countered a drop in 2019. Manufacturing and Public Administration are the only supersectors that showed a decline, however, at least manufacturing had strong growth in 2019 in addition to 2021, with only 2020 accounting for the decline.

TABLE 23: AVERAGE MONTHLY EMPLOYMENT IN THE REGION, 2020 Q1 – 2022 Q1

	20-1	20-2	20-3	20-4	21-1	21-2	21-3	21-4	22-1	
Greater Lowell	Goods-Producing	26,550	25,009	26,615	26,601	25,880	26,955	27,475	27,099	26,496
	Natural Resources and Mining	11	34	14	15	59	190	247	236	207
	Construction	7,988	7,269	8,435	8,526	7,724	8,408	8,767	8,597	7,741
	Manufacturing	18,463	14,467	14,705	14,625	14,726	15,046	15,162	18,199	18,466
	Service-Providing	103,073	87,207	92,647	97,098	95,271	98,683	97,732	99,544	98,734
	Trade, Transportation and Utilities	20,517	18,126	19,070	20,867	19,668	19,908	19,701	20,714	20,966
	Information	3,693	3,501	3,424	3,410	2,956	3,061	2,953	3,100	3,126
	Financial Activities	3,654	3,383	3,522	3,567	3,530	3,418	3,383	3,361	3,336
	Professional and Business Services	23,200	21,960	22,479	23,206	23,422	23,778	23,593	23,525	22,846
	Education and Health Services	33,036	27,439	28,059	30,055	30,047	31,468	29,977	31,361	31,191
	Leisure and Hospitality	11,363	6,316	8,965	8,544	8,402	9,636	10,610	10,026	9,950
	Other Services	3,702	2,523	3,121	3,373	3,315	3,445	3,508	3,521	3,436
	Public Administration	3,236	3,222	3,230	3,220	3,163	3,160	3,174	3,232	3,200
Total, All Industries	129,621	112,218	119,264	123,703	121,150	125,639	125,205	126,644	125,232	
City of Lowell	Goods-Producing	4,148	3,876	4,040	3,908	3,862	3,970	3,971	4,035	3,978
	Natural Resources and Mining	0	0	0	0	0	0	56	62	65
	Construction	976	928	1,059	1,032	917	980	1,056	1,024	938
	Manufacturing	3,173	2,922	2,950	2,843	2,904	2,941	2,859	2,949	2,976
	Service-Providing	35,077	30,871	31,568	32,694	32,377	34,227	33,822	33,907	34,665
	Trade, Transportation and Utilities	4,182	3,576	3,952	4,375	4,187	4,179	4,328	4,373	5,609
	Information	1,221	1,152	1,031	1,043	1,006	1,075	1,049	1,060	1,030
	Financial Activities	1,414	1,393	1,409	1,408	1,393	1,237	1,137	1,107	1,071
	Professional and Business Services	5,907	5,454	5,484	5,875	5,932	6,170	6,097	6,063	5,794
	Education and Health Services	16,870	15,356	15,136	15,462	15,465	16,729	16,001	16,224	16,098
	Leisure and Hospitality	3,204	1,906	2,415	2,359	2,267	2,669	2,986	2,846	2,855
	Other Services	955	717	819	849	814	862	900	883	860
	Public Administration	1,325	1,318	1,323	1,324	1,313	1,305	1,324	1,350	1,349
Total, All Industries	39,225	34,747	35,609	36,602	36,239	38,197	37,793	37,943	38,643	
Region Outside Lowell	Goods-Producing	22,402	21,133	22,575	22,693	22,018	22,985	23,504	23,064	22,518
	Natural Resources and Mining	11	34	14	15	59	190	191	174	142
	Construction	7,012	6,341	7,376	7,494	6,807	7,428	7,711	7,573	6,803
	Manufacturing	15,290	11,545	11,755	11,782	11,822	12,105	12,303	15,250	15,490
	Service-Providing	67,996	56,336	61,079	64,404	62,894	64,456	63,910	65,637	64,069
	Trade, Transportation and Utilities	16,335	14,550	15,118	16,492	15,481	15,729	15,373	16,341	15,357
	Information	2,472	2,349	2,393	2,367	1,950	1,986	1,904	2,040	2,096
	Financial Activities	2,240	1,990	2,113	2,159	2,137	2,181	2,246	2,254	2,265
	Professional and Business Services	17,293	16,506	16,995	17,331	17,490	17,608	17,496	17,462	17,052
	Education and Health Services	16,166	12,083	12,923	14,593	14,582	14,739	13,976	15,137	15,093
	Leisure and Hospitality	8,159	4,410	6,550	6,185	6,135	6,967	7,624	7,180	7,095
	Other Services	2,747	1,806	2,302	2,524	2,501	2,583	2,608	2,638	2,576
	Public Administration	1,911	1,904	1,907	1,896	1,850	1,855	1,850	1,882	1,851
Total, All Industries	90,396	77,471	83,655	87,101	84,911	87,442	87,412	88,701	86,589	

Source: U.S. Bureau of Labor Statistics, Quarterly Census of Employment and Wages

TABLE 24: NUMBER OF ESTABLISHMENTS IN THE REGION, 2020 Q1 – 2022 Q1

	20-1	20-2	20-3	20-4	21-1	21-2	21-3	21-4	22-1	
Greater Lowell	Goods-Producing	1,464	1,474	1,462	1,469	1,495	1,507	1,498	1,509	1,519
	Natural Resources and Mining	3	6	3	3	9	14	13	13	18
	Construction	1,087	1,099	1,087	1,094	1,119	1,135	1,128	1,134	1,140
	Manufacturing	362	325	325	325	325	321	319	354	355
	Service-Providing	8,009	8,092	8,118	8,307	8,498	8,550	8,537	8,677	8,738
	Trade, Transportation and Utilities	1,282	1,269	1,252	1,255	1,271	1,271	1,258	1,247	1,251
	Information	147	145	146	144	146	145	142	160	171
	Financial Activities	440	445	445	448	462	459	458	465	469
	Professional and Business Services	1,375	1,406	1,400	1,430	1,448	1,462	1,481	1,510	1,521
	Education and Health Services	3,260	3,297	3,360	3,492	3,633	3,686	3,672	3,748	3,773
	Leisure and Hospitality	700	695	685	692	689	679	687	696	695
	Other Services	678	681	692	696	713	712	705	712	718
	Public Administration	91	93	95	94	93	94	93	91	92
	Total, All Industries	9,473	9,566	9,580	9,776	9,993	10,057	10,035	10,186	10,257
City of Lowell	Goods-Producing	255	256	255	253	257	261	264	272	277
	Natural Resources and Mining	0	0	0	0	0	0	3	3	4
	Construction	169	173	172	171	173	176	180	187	190
	Manufacturing	86	82	82	81	82	83	81	82	83
	Service-Providing	3,451	3,508	3,508	3,619	3,733	3,774	3,778	3,861	3,858
	Trade, Transportation and Utilities	359	357	347	349	355	358	353	346	341
	Information	34	35	35	36	38	37	37	38	40
	Financial Activities	117	118	119	120	123	120	121	120	116
	Professional and Business Services	311	318	311	314	313	322	334	339	342
	Education and Health Services	2,178	2,223	2,250	2,356	2,453	2,491	2,486	2,565	2,561
	Leisure and Hospitality	236	234	226	228	227	218	220	225	228
	Other Services	179	182	179	176	183	187	186	188	189
	Public Administration	37	39	41	40	41	41	41	40	41
	Total, All Industries	3,706	3,764	3,763	3,872	3,990	4,035	4,042	4,133	4,135
Region Outside Lowell	Goods-Producing	1,209	1,218	1,207	1,216	1,238	1,246	1,234	1,237	1,242
	Natural Resources and Mining	3	6	3	3	9	14	10	10	14
	Construction	918	926	915	923	946	959	948	947	950
	Manufacturing	276	243	243	244	243	238	238	272	272
	Service-Providing	4,558	4,584	4,610	4,688	4,765	4,776	4,759	4,816	4,880
	Trade, Transportation and Utilities	923	912	905	906	916	913	905	901	910
	Information	113	110	111	108	108	108	105	122	131
	Financial Activities	323	327	326	328	339	339	337	345	353
	Professional and Business Services	1,064	1,088	1,089	1,116	1,135	1,140	1,147	1,171	1,179
	Education and Health Services	1,082	1,074	1,110	1,136	1,180	1,195	1,186	1,183	1,212
	Leisure and Hospitality	464	461	459	464	462	461	467	471	467
	Other Services	499	499	513	520	530	525	519	524	529
	Public Administration	54	54	54	54	52	53	52	51	51
	Total, All Industries	5,767	5,802	5,817	5,904	6,003	6,022	5,993	6,053	6,122

Source: U.S. Bureau of Labor Statistics, Quarterly Census of Employment and Wages

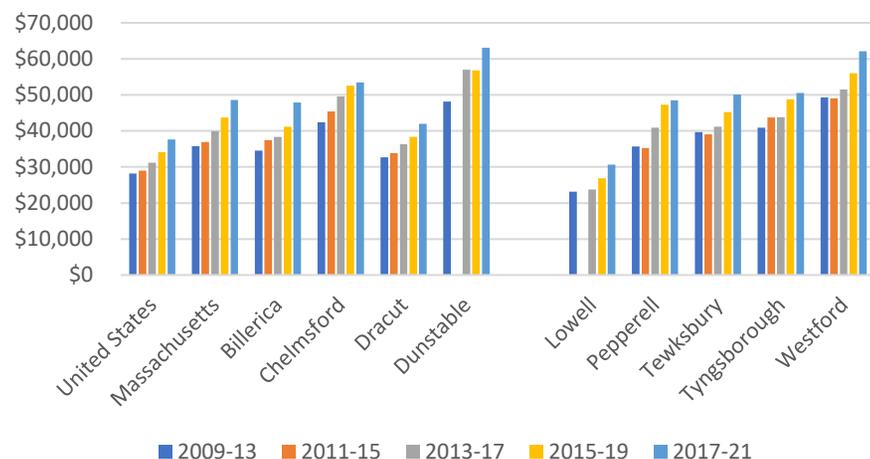
TABLE 25: AVERAGE WEEKLY WAGES IN THE REGION, 2020 Q1 – 2022 Q1

	20-1	20-2	20-3	20-4	21-1	21-2	21-3	21-4	22-1	
Greater Lowell	Goods-Producing	\$2,169	\$1,919	\$1,918	\$2,287	\$2,129	\$2,092	\$1,884	\$2,539	\$2,178
	Natural Resources and Mining	\$506	\$591	\$1,071	\$1,107	\$783	\$585	\$759	\$844	\$771
	Construction	\$1,422	\$1,433	\$1,516	\$1,736	\$1,398	\$1,520	\$1,504	\$1,755	\$1,516
	Manufacturing	\$2,500	\$2,074	\$1,993	\$2,511	\$2,270	\$2,418	\$2,002	\$2,937	\$2,472
	Service-Providing	\$1,282	\$1,430	\$1,281	\$1,454	\$1,339	\$1,511	\$1,375	\$1,525	\$1,473
	Trade, Transportation and Utilities	\$1,000	\$990	\$990	\$1,159	\$986	\$1,048	\$1,066	\$1,172	\$1,300
	Information	\$2,441	\$2,165	\$2,263	\$2,268	\$2,501	\$2,033	\$2,223	\$2,237	\$3,080
	Financial Activities	\$1,755	\$1,480	\$1,449	\$1,686	\$1,796	\$1,512	\$1,381	\$1,617	\$1,870
	Professional and Business Services	\$2,162	\$2,314	\$2,008	\$2,258	\$2,235	\$2,790	\$2,328	\$2,561	\$2,381
	Education and Health Services	\$979	\$1,148	\$1,029	\$1,217	\$993	\$1,163	\$1,092	\$1,260	\$1,099
	Leisure and Hospitality	\$434	\$485	\$466	\$498	\$452	\$486	\$504	\$544	\$481
	Other Services	\$750	\$873	\$844	\$906	\$766	\$813	\$880	\$894	\$811
	Public Administration	\$1,598	\$1,711	\$1,541	\$1,778	\$1,505	\$1,684	\$1,547	\$1,792	\$1,584
Total, All Industries	\$1,464	\$1,539	\$1,423	\$1,633	\$1,507	\$1,636	\$1,487	\$1,742	\$1,622	
City of Lowell	Goods-Producing	\$1,855	\$1,577	\$1,547	\$2,249	\$1,905	\$1,723	\$1,597	\$3,114	\$2,093
	Natural Resources and Mining	\$0	\$0	\$0	\$0	\$0	\$0	\$942	\$994	\$904
	Construction	\$2,073	\$1,394	\$1,681	\$1,653	\$1,864	\$1,545	\$1,539	\$1,751	\$2,012
	Manufacturing	\$1,787	\$1,640	\$1,506	\$2,480	\$1,932	\$1,793	\$1,631	\$3,632	\$2,144
	Service-Providing	\$1,191	\$1,348	\$1,202	\$1,371	\$1,194	\$1,611	\$1,234	\$1,454	\$1,384
	Trade, Transportation and Utilities	\$938	\$858	\$879	\$927	\$866	\$955	\$915	\$1,001	\$1,702
	Information	\$2,519	\$1,972	\$1,858	\$2,066	\$2,235	\$1,825	\$1,970	\$2,142	\$2,432
	Financial Activities	\$2,070	\$1,603	\$1,582	\$1,826	\$2,046	\$1,633	\$1,455	\$1,770	\$2,119
	Professional and Business Services	\$1,694	\$2,440	\$1,742	\$2,136	\$1,725	\$3,921	\$1,778	\$2,436	\$1,960
	Education and Health Services	\$1,040	\$1,111	\$1,117	\$1,244	\$1,030	\$1,118	\$1,169	\$1,306	\$1,112
	Leisure and Hospitality	\$479	\$542	\$506	\$551	\$514	\$527	\$528	\$556	\$509
	Other Services	\$610	\$680	\$688	\$764	\$659	\$699	\$752	\$823	\$706
	Public Administration	\$1,650	\$1,632	\$1,583	\$1,758	\$1,571	\$1,722	\$1,700	\$1,790	\$1,735
Total, All Industries	\$1,261	\$1,373	\$1,242	\$1,465	\$1,270	\$1,622	\$1,272	\$1,630	\$1,457	
Region Outside Lowell	Goods-Producing	\$2,227	\$1,982	\$1,985	\$2,294	\$2,169	\$2,155	\$1,932	\$2,438	\$2,193
	Natural Resources and Mining	\$506	\$591	\$1,071	\$1,107	\$783	\$585	\$705	\$791	\$710
	Construction	\$1,331	\$1,439	\$1,492	\$1,748	\$1,335	\$1,516	\$1,500	\$1,756	\$1,448
	Manufacturing	\$2,647	\$2,184	\$2,115	\$2,518	\$2,353	\$2,569	\$2,088	\$2,803	\$2,535
	Service-Providing	\$1,328	\$1,475	\$1,321	\$1,497	\$1,413	\$1,459	\$1,450	\$1,562	\$1,521
	Trade, Transportation and Utilities	\$1,016	\$1,023	\$1,019	\$1,221	\$1,019	\$1,073	\$1,109	\$1,218	\$1,153
	Information	\$2,403	\$2,260	\$2,438	\$2,357	\$2,638	\$2,146	\$2,362	\$2,287	\$3,399
	Financial Activities	\$1,556	\$1,395	\$1,361	\$1,594	\$1,633	\$1,443	\$1,344	\$1,542	\$1,752
	Professional and Business Services	\$2,322	\$2,272	\$2,095	\$2,299	\$2,408	\$2,393	\$2,520	\$2,604	\$2,525
	Education and Health Services	\$916	\$1,196	\$925	\$1,190	\$954	\$1,214	\$1,005	\$1,212	\$1,085
	Leisure and Hospitality	\$417	\$460	\$451	\$478	\$429	\$470	\$494	\$540	\$470
	Other Services	\$799	\$949	\$900	\$954	\$801	\$851	\$924	\$917	\$845
	Public Administration	\$1,561	\$1,766	\$1,512	\$1,792	\$1,458	\$1,657	\$1,437	\$1,794	\$1,475
Total, All Industries	\$1,551	\$1,613	\$1,500	\$1,704	\$1,609	\$1,642	\$1,580	\$1,790	\$1,696	

Source: U.S. Bureau of Labor Statistics, Quarterly Census of Employment and Wages

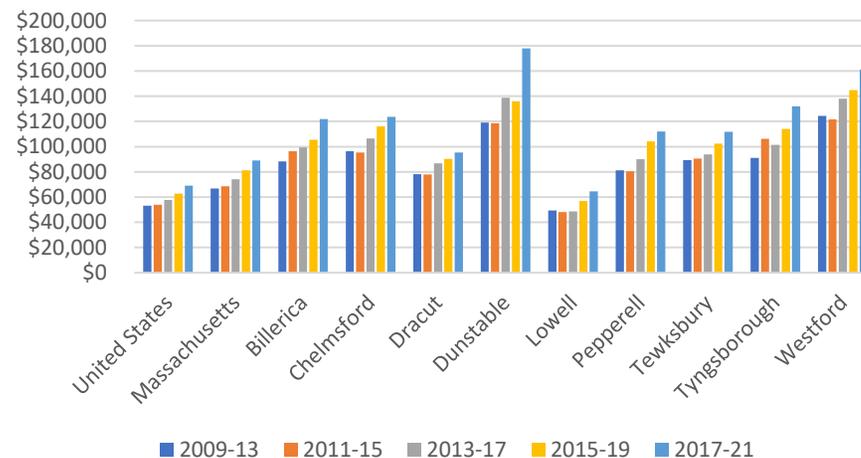
Employment: Income

FIGURE 20: PER CAPITA INCOME, 2007-11 TO 2015-19



Source: U.S. Census Bureau, American Community Survey, Five-Year data, Table B19301.

FIGURE 19: MEDIAN HOUSEHOLD INCOME, 2007-11 TO 2015-19



Source: U.S. Census Bureau, American Community Survey, Five-Year data, Table B19013.

These charts and tables examine the income and employment of residents in Greater Lowell, unlike the previous charts which examined firms in Greater Lowell. These charts use ACS data, meaning that they do not reflect the impacts of COVID-19 or actions recently taken in the region. The per capita income, which simply divides the total wages made in a community by the number of people, is generally above the U.S. except in Lowell. This is also true of Median Household Income. As the Northeast has typically higher income levels than other regions in the nation, this is not unexpected.

TABLE 26: PER CAPITA INCOME BY COMMUNITY, STATE, AND NATION, 2007-11 TO 2015-19

	United States	Massachusetts	Billerica	Chelmsford	Dracut	Dunstable	Lowell	Pepperell	Tewksbury	Tyngsborough	Westford
2009-13	\$28,155	\$35,763	\$34,545	\$42,402	\$32,690	\$48,133	\$23,136	\$35,689	\$39,675	\$40,920	\$49,341
2011-15	\$28,930	\$36,895	\$37,430	\$45,386	\$33,856			\$35,253	\$39,055	\$43,770	\$49,004
2013-17	\$31,177	\$39,913	\$38,383	\$49,564	\$36,323	\$57,005	\$23,768	\$40,919	\$41,193	\$43,787	\$51,526
2015-19	\$34,103	\$43,761	\$41,174	\$52,578	\$38,365	\$56,854	\$26,837	\$47,279	\$45,233	\$48,732	\$56,057
2017-21	\$37,638	\$48,617	\$47,880	\$53,430	\$42,008	\$63,085	\$30,620	\$48,499	\$50,133	\$50,573	\$62,128

Source: U.S. Census Bureau, American Community Survey, Five-Year data, Table B19301. Values are inflated to the last year of each ACS, i.e., 2009-2013 data is inflated to 2013 dollars.

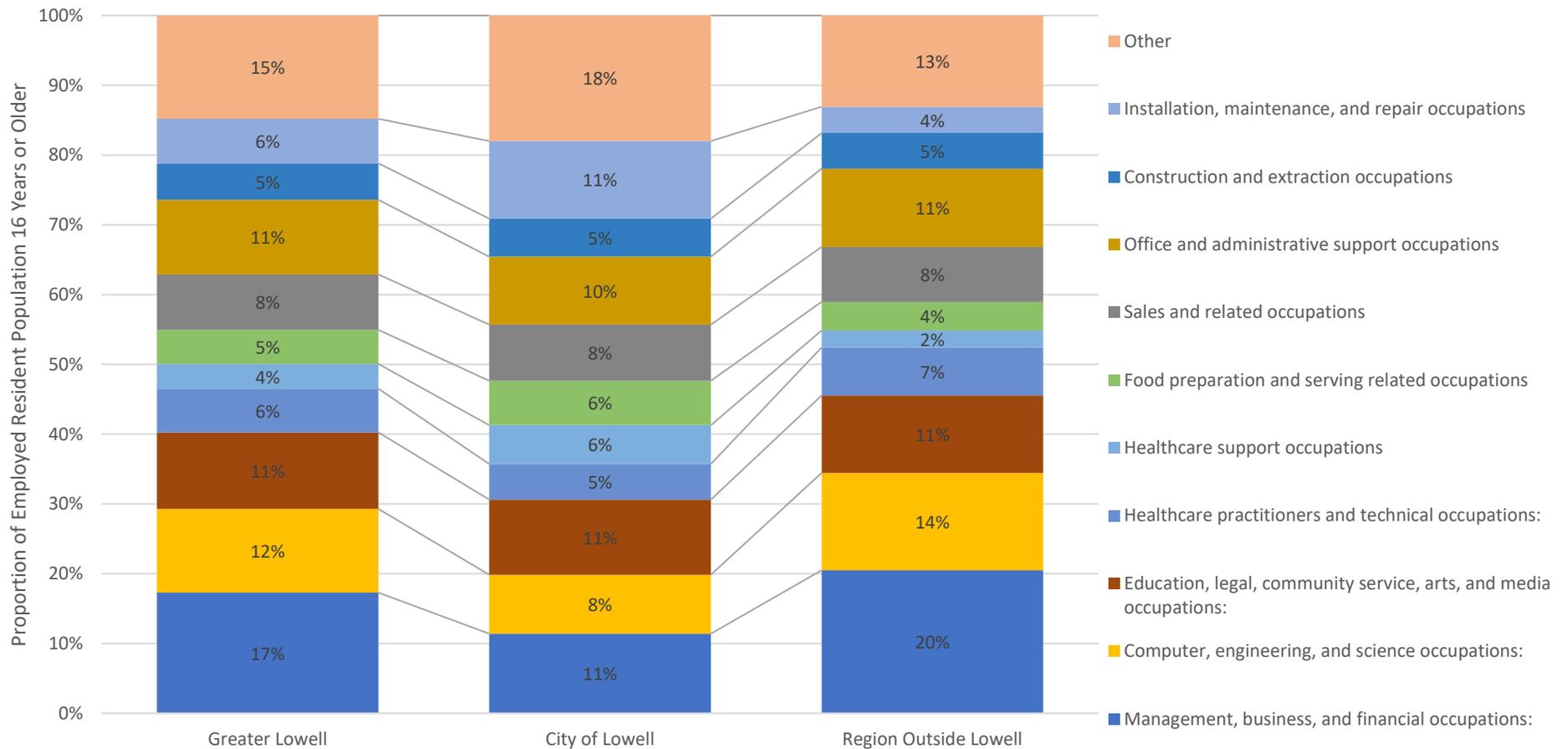
TABLE 27: MEDIAN HOUSEHOLD INCOME BY COMMUNITY, STATE, AND NATION, 2007-11 TO 2015-19

	United States	Massachusetts	Billerica	Chelmsford	Dracut	Dunstable	Lowell	Pepperell	Tewksbury	Tyngsborough	Westford
2009-13	\$53,046	\$66,866	\$88,296	\$96,336	\$78,169	\$119,022	\$49,452	\$81,193	\$89,241	\$90,987	\$124,464
2011-15	\$53,889	\$68,563	\$96,316	\$95,290	\$77,848	\$118,523	\$48,002	\$80,524	\$90,484	\$106,290	\$121,591
2013-17	\$57,652	\$74,167	\$99,453	\$106,432	\$86,697	\$138,700	\$48,581	\$90,029	\$93,817	\$101,303	\$138,006
2015-19	\$62,843	\$81,215	\$105,343	\$116,111	\$90,273	\$135,909	\$56,878	\$104,130	\$102,500	\$114,067	\$144,917
2017-21	\$69,021	\$89,026	\$121,936	\$123,630	\$95,229	\$177,803	\$64,489	\$112,043	\$111,696	\$131,944	\$161,076

Source: U.S. Census Bureau, American Community Survey, Five-Year data, Table B19013. Values are inflated to the last year of each ACS, i.e., 2009-2013 data is inflated to 2013 dollars.

Employment: Occupation

FIGURE 21: OCCUPATIONS IN SELECTED REGIONS, 2015-19



Source: U.S. Census Bureau, American Community Survey, Five-Year data, Table B24010. Occupations are categorized by second-level classifications and occupations with less than 5% are categorized into "other"

The City of Lowell trails the rest of the region in income partially because the City's occupation mix contains proportionally more installation/maintenance/repair, food service, and "other" occupations, which tend to be lower-paid, while the region outside Lowell has a larger-than-average proportion in the Management and Computer/engineering/science occupations. See Table 28 on the next page. That said, after several years of dropping or stagnant income, the City has increased its per capita and household income as estimated by the 2015-19 and 2017-21 ACS. Other towns have more consistently increased both measures over the eight-year period, with only a few exceptions.

TABLE 28: OCCUPATION MIX BY COMMUNITY, STATE, AND NATION, 2017-21

	United States	Massachusetts	Billerica	Chelmsford	Dracut	Dunstable	Lowell	Pepperell	Tewksbury	Tyngsborough	Westford
Management, business, science, and arts occupations:	40%	49%	49%	61%	40%	53%	36%	48%	49%	53%	69%
Management, business, and financial occupations:	16%	19%	20%	23%	15%	23%	11%	17%	21%	25%	24%
Management occupations	11%	12%	13%	16%	10%	18%	7%	12%	11%	16%	17%
Business and financial operations occupations	6%	7%	7%	8%	5%	5%	4%	5%	9%	9%	7%
Computer, engineering, and science occupations:	6%	9%	13%	19%	11%	12%	8%	14%	10%	10%	21%
Computer and mathematical occupations	3%	5%	7%	10%	6%	6%	3%	8%	5%	7%	11%
Architecture and engineering occupations	2%	3%	4%	7%	3%	4%	3%	5%	4%	2%	7%
Life, physical, and social science occupations	1%	2%	2%	2%	2%	2%	2%	1%	1%	0%	3%
Education, legal, community service, arts, and media occupations:	11%	13%	9%	12%	10%	11%	11%	10%	10%	10%	17%
Community and social service occupations	2%	2%	1%	2%	1%	1%	2%	2%	2%	3%	2%
Legal occupations	1%	1%	1%	1%	1%	2%	1%	1%	0%	0%	1%
Educational instruction, and library occupations	6%	7%	5%	8%	6%	6%	6%	7%	6%	7%	10%
Arts, design, entertainment, sports, and media occupations	2%	2%	2%	2%	1%	1%	2%	1%	1%	1%	5%
Healthcare practitioners and technical occupations:	6%	7%	7%	6%	5%	8%	5%	7%	9%	8%	8%
Health diagnosing and treating practitioners and other technical occupations	4%	5%	5%	5%	3%	5%	3%	5%	7%	4%	6%
Health technologists and technicians	2%	2%	2%	1%	2%	3%	2%	2%	2%	4%	2%
Service occupations:	17%	16%	12%	9%	18%	12%	20%	11%	13%	12%	9%
Healthcare support occupations	3%	3%	3%	1%	3%	3%	6%	3%	2%	3%	2%
Protective service occupations:	2%	2%	2%	2%	3%	3%	1%	2%	2%	2%	1%
Firefighting and prevention, and other protective service workers including supervisors	1%	1%	1%	1%	1%	2%	1%	1%	1%	0%	1%
Law enforcement workers including supervisors	1%	1%	1%	1%	2%	1%	0%	1%	1%	1%	1%
Food preparation and serving related occupations	5%	5%	4%	2%	8%	4%	6%	3%	5%	3%	2%
Building and grounds cleaning and maintenance occupations	4%	3%	2%	2%	2%	0%	4%	2%	2%	1%	1%
Personal care and service occupations	3%	3%	2%	2%	2%	3%	3%	2%	3%	3%	2%

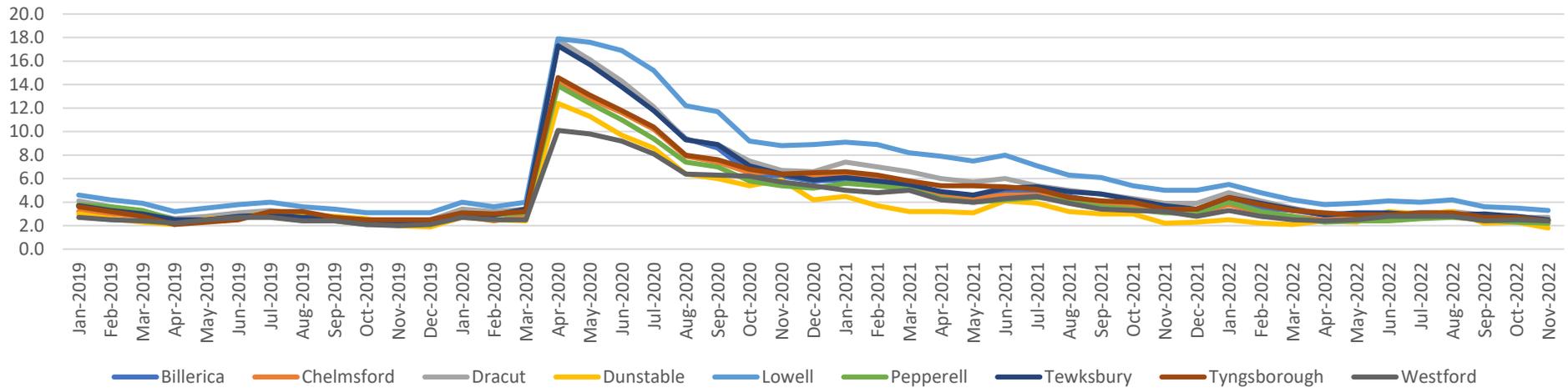
TABLE 28: OCCUPATION MIX BY COMMUNITY, STATE, AND NATION, 2017-21

	United States	Massachusetts	Billerica	Chelmsford	Dracut	Dunstable	Lowell	Pepperell	Tewksbury	Tyngsborough	Westford
Sales and office occupations:	21%	19%	19%	19%	22%	16%	18%	21%	22%	15%	14%
Sales and related occupations	10%	9%	6%	9%	7%	8%	8%	8%	9%	8%	8%
Office and administrative support occupations	11%	10%	13%	10%	14%	8%	10%	13%	13%	7%	6%
Natural resources, construction, and maintenance occupations:	9%	7%	9%	6%	10%	10%	8%	9%	9%	9%	4%
Farming, fishing, and forestry occupations	1%	0%	0%	1%	0%	0%	0%	0%	0%	0%	0%
Construction and extraction occupations	5%	4%	5%	4%	6%	6%	5%	6%	6%	6%	3%
Installation, maintenance, and repair occupations	3%	2%	4%	2%	3%	4%	3%	3%	2%	3%	1%
Production, transportation, and material moving occupations:	13%	9%	10%	6%	10%	8%	19%	11%	7%	11%	4%
Production occupations	6%	4%	3%	2%	6%	3%	11%	5%	5%	5%	2%
Transportation occupations	4%	3%	4%	2%	2%	4%	4%	3%	1%	3%	1%
Material moving occupations	4%	2%	3%	2%	2%	2%	4%	3%	1%	3%	1%
Civilian employed population 16 years and over	157,510,982	3,667,019	24,301	19,328	17,711	1,954	58,781	6,213	17,572	6,688	12,941

Source: U.S. Census Bureau, American Community Survey, Five-Year data, Table B24010.

Employment: Unemployment and Labor Force

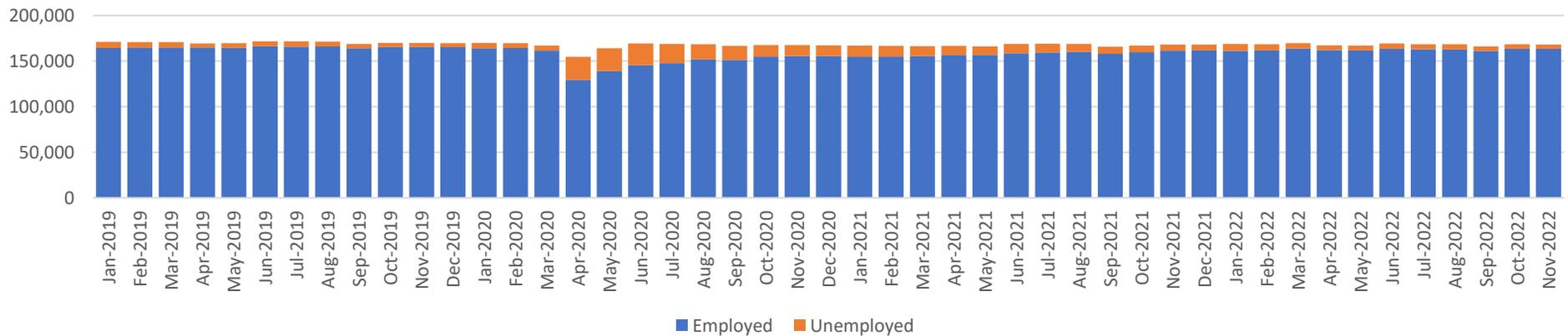
FIGURE 22: UNEMPLOYMENT RATE IN % BY TOWN



Source: Bureau of Labor Statistics, Local Area Unemployment Statistics

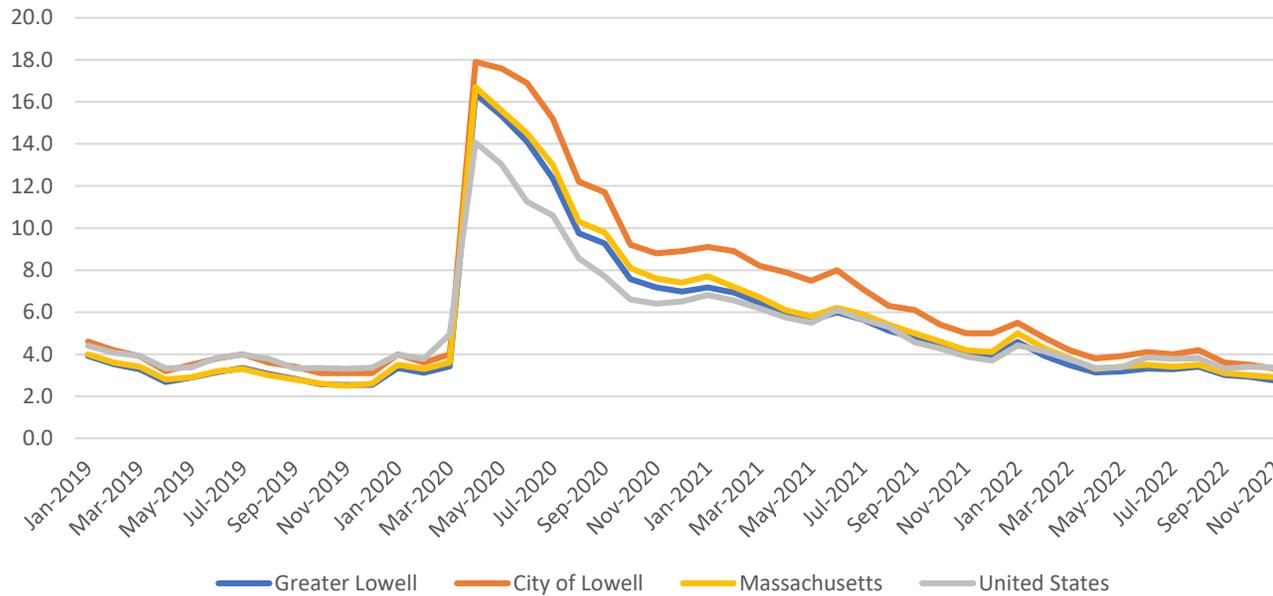
Figure 22 illustrates the unemployment rate for each NMCOG community from January 2019 to November 2022. Trends continued from 2019-2022 with continued decreases in unemployment. From November 2021 to November 2022, the region as a whole declined from 4.0% to 2.7%. NMCOG communities now range from 2.2% to 2.7%, with only Dunstable and Lowell outside that range, at 1.8% and 3.3% respectively. FIGURE 23 illustrates the labor force in workers for Greater Lowell. The number has increased somewhat from 167,302 in November 2021 to 168,044 in November 2022. This is still well below the 10-year high of 171,684 in June 2019.

FIGURE 23: GREATER LOWELL LABOR FORCE



Source: Bureau of Labor Statistics, Local Area Unemployment Statistics *November 2022 Preliminary Estimate

FIGURE 24: UNEMPLOYMENT RATE IN % (COMPARISON WITH U.S.)



Only the City of Lowell has had consistently higher unemployment than the U.S, but as of summer 2022, that gap had disappeared (3.3% in the City of Lowell vs. 3.4% nationwide). As other towns have lower rates, Greater Lowell's overall unemployment rate, once higher than that the U.S.'s rate, is 0.7 points below the U.S.'s rate and 0.2 points below Massachusetts's rate as of November 2022.

See Table 30 and Table 31 on the following pages.

TABLE 29: UNEMPLOYMENT RATES BY COMMUNITY AND REGION, MAY 2018 – MAY 2022

Community	2018	2019	2020	2021	2022	% Change May 2021-2022
	May	May	May	May	May	
Billerica	3	2.6	16.1	4.4	2.9	-34.1%
Chelmsford	2.8	2.5	12.8	4.3	2.7	-37.2%
Dracut	3.2	2.8	16.1	5.7	3	-47.4%
Dunstable	2.5	2.6	11.3	3.1	2.3	-25.8%
Lowell	3.8	3.5	17.6	7.5	3.9	-48.0%
Pepperell	3.1	2.4	12.4	4	2.4	-40.0%
Tewksbury	3.3	2.5	15.7	4.6	3.1	-32.6%
Tyngsborough	2.8	2.3	13.1	5.4	2.9	-46.3%
Westford	2.7	2.5	9.8	4	2.5	-37.5%
Greater Lowell	3.3	2.9	15.4	5.6	3.2	-43.4%

Source: Bureau of Labor Statistics, Not Seasonally Adjusted *November 2022 Preliminary Estimate

TABLE 30: UNEMPLOYMENT RATES FOR THE REGION, STATE, AND NATION, JANUARY 2020 – NOVEMBER 2022

	United States	Massachusetts	Greater Lowell	City of Lowell	Region Outside Lowell
Jan 2020	4.0	3.5	3.3	4.0	3.0
Feb 2020	3.8	3.3	3.1	3.6	2.9
Mar 2020	5.0	3.6	3.4	4.0	3.1
Apr 2020	14.1	16.7	16.4	17.9	15.6
May 2020	13.0	15.6	15.4	17.6	14.2
Jun 2020	11.2	14.5	14.1	16.9	12.6
Jul 2020	10.6	13	12.4	15.2	10.9
Aug 2020	8.5	10.3	9.7	12.2	8.5
Sep 2020	7.7	9.8	9.3	11.7	8.0
Oct 2020	6.6	8.1	7.6	9.2	6.7
Nov 2020	6.4	7.6	7.2	8.8	6.3
Dec 2020	6.5	7.4	7.0	8.9	6.0
Jan 2021	6.8	7.7	7.2	9.1	6.2
Feb 2021	6.6	7.2	6.9	8.9	5.9
Mar 2021	6.2	6.7	6.4	8.2	5.5
Apr 2021	5.8	6.1	5.9	7.9	4.9
May 2021	5.5	5.8	5.6	7.5	4.6
Jun 2021	6.1	6.2	6.0	8.0	4.9
Jul 2021	5.7	5.9	5.6	7.1	4.9
Aug 2021	5.3	5.4	5.1	6.3	4.5
Sep 2021	4.6	5	4.8	6.1	4.1
Oct 2021	4.3	4.6	4.4	5.4	3.8
Nov 2021	3.9	4.2	4.0	5.0	3.4
Dec 2021	3.7	4.1	3.9	5.0	3.3
Jan 2022	4.4	5	4.6	5.5	4.1
Feb 2022	4.1	4.3	3.9	4.8	3.5
Mar 2022	3.8	3.8	3.5	4.2	3.1
Apr 2022	3.3	3.3	3.1	3.8	2.8
May 2022	3.4	3.4	3.2	3.9	2.8
Jun 2022	3.8	3.5	3.3	4.1	2.9
Jul 2022	3.8	3.4	3.3	4.0	2.9
Aug 2022	3.8	3.5	3.4	4.2	3.0
Sep 2022	3.3	3.1	3.0	3.6	2.7
Oct 2022	3.4	3	2.9	3.5	2.6
Nov 2022*	3.4	2.9	2.7	3.3	2.4

Source: Bureau of Labor Statistics, Not Seasonally Adjusted *November 2022 Preliminary Estimate

TABLE 31: GREATER LOWELL LABOR FORCE, JANUARY 2020 – NOVEMBER 2022

	Massachusetts	Billerica	Chelmsford	Dracut	Dunstable	Lowell	Pepperell	Tewksbury	Tyngsborough	Westford	Greater Lowell
Jan 2020	3,720,031	24,207	19,699	18,399	1,920	57,595	7,050	17,482	7,316	13,255	166,923
Feb 2020	3,723,612	24,147	19,607	18,322	1,911	57,518	7,064	17,435	7,292	13,222	166,518
Mar 2020	3,727,618	24,146	19,587	18,297	1,915	57,238	7,086	17,426	7,280	13,293	166,268
Apr 2020	3,723,599	24,210	19,583	18,333	1,910	57,568	7,010	17,479	7,308	13,293	166,694
May 2020	3,721,759	24,121	19,516	18,287	1,912	57,351	7,001	17,423	7,315	13,276	166,202
Jun 2020	3,782,883	24,498	19,816	18,557	1,923	58,305	6,991	17,732	7,388	13,475	168,685
Jul 2020	3,800,680	24,645	19,902	18,535	1,930	58,037	7,042	17,851	7,414	13,564	168,920
Aug 2020	3,793,118	24,636	19,914	18,529	1,925	57,748	7,052	17,836	7,385	13,530	168,555
Sep 2020	3,731,317	24,159	19,545	18,215	1,908	56,836	6,973	17,548	7,261	13,283	165,728
Oct 2020	3,751,520	24,374	19,748	18,359	1,923	57,125	7,010	17,673	7,340	13,422	166,974
Nov 2020	3,770,869	24,580	19,881	18,480	1,932	57,471	7,075	17,779	7,377	13,558	168,133
Dec 2020	3,763,429	24,561	19,855	18,511	1,940	57,562	7,103	17,740	7,382	13,526	168,180
Jan 2021	3,758,139	24,675	19,941	18,608	1,932	57,667	7,123	17,861	7,433	13,534	168,774
Feb 2021	3,759,275	24,657	19,882	18,555	1,945	57,461	7,134	17,837	7,418	13,521	168,410
Mar 2021	3,782,622	24,872	20,064	18,651	1,960	57,778	7,166	17,963	7,468	13,645	169,567
Apr 2021	3,721,397	24,501	19,781	18,362	1,942	56,932	7,041	17,671	7,368	13,484	167,082
May 2021	3,723,656	24,502	19,795	18,338	1,935	56,910	7,032	17,700	7,349	13,479	167,040
Jun 2021	3,780,537	24,804	20,059	18,535	1,961	57,703	7,062	17,905	7,436	13,682	169,147
Jul 2021	3,780,667	24,754	20,009	18,482	1,939	57,443	7,006	17,805	7,425	13,635	168,498
Aug 2021	3,774,664	24,700	19,999	18,492	1,941	57,472	7,009	17,786	7,410	13,620	168,429
Sep 2021	3,698,042	24,366	19,682	18,241	1,899	56,538	6,915	17,601	7,302	13,422	165,966
Oct 2021	3,735,590	24,755	19,982	18,512	1,928	57,364	6,997	17,858	7,420	13,656	168,472
Nov 2021	3,716,692	24,666	19,924	18,500	1,914	57,241	6,981	17,788	7,397	13,633	168,044
Dec 2021	3,720,031	24,207	19,699	18,399	1,920	57,595	7,050	17,482	7,316	13,255	166,923
Jan 2022	3,723,612	24,147	19,607	18,322	1,911	57,518	7,064	17,435	7,292	13,222	166,518
Feb 2022	3,727,618	24,146	19,587	18,297	1,915	57,238	7,086	17,426	7,280	13,293	166,268
Mar 2022	3,723,599	24,210	19,583	18,333	1,910	57,568	7,010	17,479	7,308	13,293	166,694
Apr 2022	3,721,759	24,121	19,516	18,287	1,912	57,351	7,001	17,423	7,315	13,276	166,202
May 2022	3,782,883	24,498	19,816	18,557	1,923	58,305	6,991	17,732	7,388	13,475	168,685
Jun 2022	3,800,680	24,645	19,902	18,535	1,930	58,037	7,042	17,851	7,414	13,564	168,920
Jul 2022	3,793,118	24,636	19,914	18,529	1,925	57,748	7,052	17,836	7,385	13,530	168,555
Aug 2022	3,731,317	24,159	19,545	18,215	1,908	56,836	6,973	17,548	7,261	13,283	165,728
Sep 2022	3,751,520	24,374	19,748	18,359	1,923	57,125	7,010	17,673	7,340	13,422	166,974
Oct 2022	3,770,869	24,580	19,881	18,480	1,932	57,471	7,075	17,779	7,377	13,558	168,133
Nov 2022*	3,763,429	24,561	19,855	18,511	1,940	57,562	7,103	17,740	7,382	13,526	168,180

Source: Bureau of Labor Statistics, Local Area Unemployment Statistics (Not seasonally adjusted) *November 2022 Preliminary Estimate

Employment: Unemployment by Industry

**TABLE 32: GREATER LOWELL WORKFORCE DEVELOPMENT AREA
UNEMPLOYMENT CLAIMANTS BY INDUSTRY**

NAICS #	Claimant Count by NAICS Industry Name	May 2020	May 2021	May 2022	Over-The-Year Change
22	Utilities	19	7	4	-42.86%
23	Construction	2,135	291	263	-9.62%
31-33	Manufacturing	1,625	328	78	-76.22%
42	Wholesale Trade	759	132	70	-46.97%
44-45	Retail Trade	2,713	275	94	-65.82%
48-49	Transportation and Warehousing	1,033	135	59	-56.30%
51	Information	272	46	31	-32.61%
52	Finance and Insurance	182	81	44	-45.68%
53	Real Estate and Rental Leasing	259	38	32	-15.79%
54	Professional, Scientific, and Technical Services	1,253	225	144	-36.00%
55	Management of Companies and Enterprises	164	20	9	-55.00%
56	Admin & Support, Waste Mgmt & Remediation Serv.	1,515	405	205	-49.38%
61	Educational Services	537	52	28	-46.15%
62	Health Care and Social Assistance	3,849	322	142	-55.90%
71	Arts, Entertainment, and Recreation	527	33	8	-75.76%
72	Accommodation and Food Services	3,456	235	104	-55.74%
81	Other Services (except Public Administration)	1,835	255	116	-54.51%
92	Public Administration	335	75	23	-69.33%
99	INA (No NAICS Code)	714	85	77	-9.41%
	All Industries	23,205	3,040	1,531	-49.64%

Table 32 lists the number of unemployment claimants by industry in the Greater Lowell Workforce Development Area in May 2020, 2021, and 2022. It should be noted that the Greater Lowell Workforce Development Area does not include Pepperell. The “Construction” sector had the highest number of claimants in May 2022, with an Over-the-Year improvement of -9.62%, which is not as much as other sectors. No industry experienced an uptick in unemployment claimants between May 2021 and May 2022, continuing trends from last year. Instead, all industries (besides construction) had a decline of claimants between 15.79% and 75.76% with a total decline of 49.64% for all industries.

MEASURING ECONOMIC DISTRESS

To pursue certain funding from the EDA, projects must respond to at least one of the administration’s stated investment priorities. They must also meet at least one of the established distress criteria applicable to the proposed project’s location at time of application. The specific criteria is described in the Notice of Funding Opportunity (NOFO) for the applicable grant program. The most recent NOFO had the following criteria:

- An unemployment rate for the most recent 24-month period that is 1 point above the national rate.
- Per capita income that is 80% or less of the national per capita income level.
- A “Special Need” as determined by EDA, which could include the closure of a major industry or employer, population loss, or demonstrated underemployment.

No community as a whole qualifies under per capita income (Lowell was 81% of U.S. per 2017-21 ACS). The City of Lowell qualifies under Unemployment criteria (1.12 points above national rate for period December 2020-November 2022). In addition, many individual census tracts qualify, and administrations are encouraged to work with NMCOG and EDA to explore qualification on any potential projects that may utilize EDA funding.

Source: Massachusetts Department of Unemployment Assistance,
<https://lmi.dua.eol.mass.gov/lmi/ClaimantProfiles#>

Appendix 2

Economic Recovery and Resiliency Plan