



Greater Lowell Comprehensive Economic Development Strategy for May 2020 - May 2025



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May 2020

Prepared by:

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Cover Photos

Upper Left: Ames Pond Corporate Center, Tewksbury, Courtesy of Pictometry, 2017

Upper Center: UMass Lowell's Innovation Hub, Lowell

Upper Right: Ames Pond Corporate Center, Tewksbury

Lower Left: Brox Farm Stand, Dracut

Lower Right: Hamilton Canal and Lowell Justice Center, Lowell



UNITED STATES DEPARTMENT OF COMMERCE
Economic Development Administration
Robert N.C. Nix Federal Building
900 Market Street, Room 602
Philadelphia, PA 19107

September 2, 2020

Beverly Woods, Executive Director
Northern Middlesex Council of Governments
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Lowell, Massachusetts 01852-2686

Dear Executive Director Woods:

Thank you for the recent submission of the Greater Lowell CEDS document. EDA appreciated the opportunity to review your CEDS document for the period of May 1, 2020 through May 30, 2025.

We are pleased to inform you that EDA's review of your CEDS document and process align with the regulatory and programmatic requirements and your CEDS has been accepted by EDA. The priorities and focuses outlined within your CEDS document will help form the foundation of how EDA reviews applications for Public Works and Economic Adjustment Assistance Programs from your region.

We greatly appreciate the work of The Comprehensive Economic Development Strategy (CEDS) Committee of the Northern Middlesex Regional Council of Governments to develop this innovative, regionally-driven economic development strategy. EDA looks forward to continuing to work with you to help support the goals and priorities outlined in your recently submitted CEDS.

Sincerely, **Linda Cruz-Carnall**

Digitally signed by Linda Cruz-Carnall
Date: 2020.09.02 08:27:57 -04'00'
Linda Cruz-Carnall Regional Director
EDA Philadelphia Regional Office

cc: EDR

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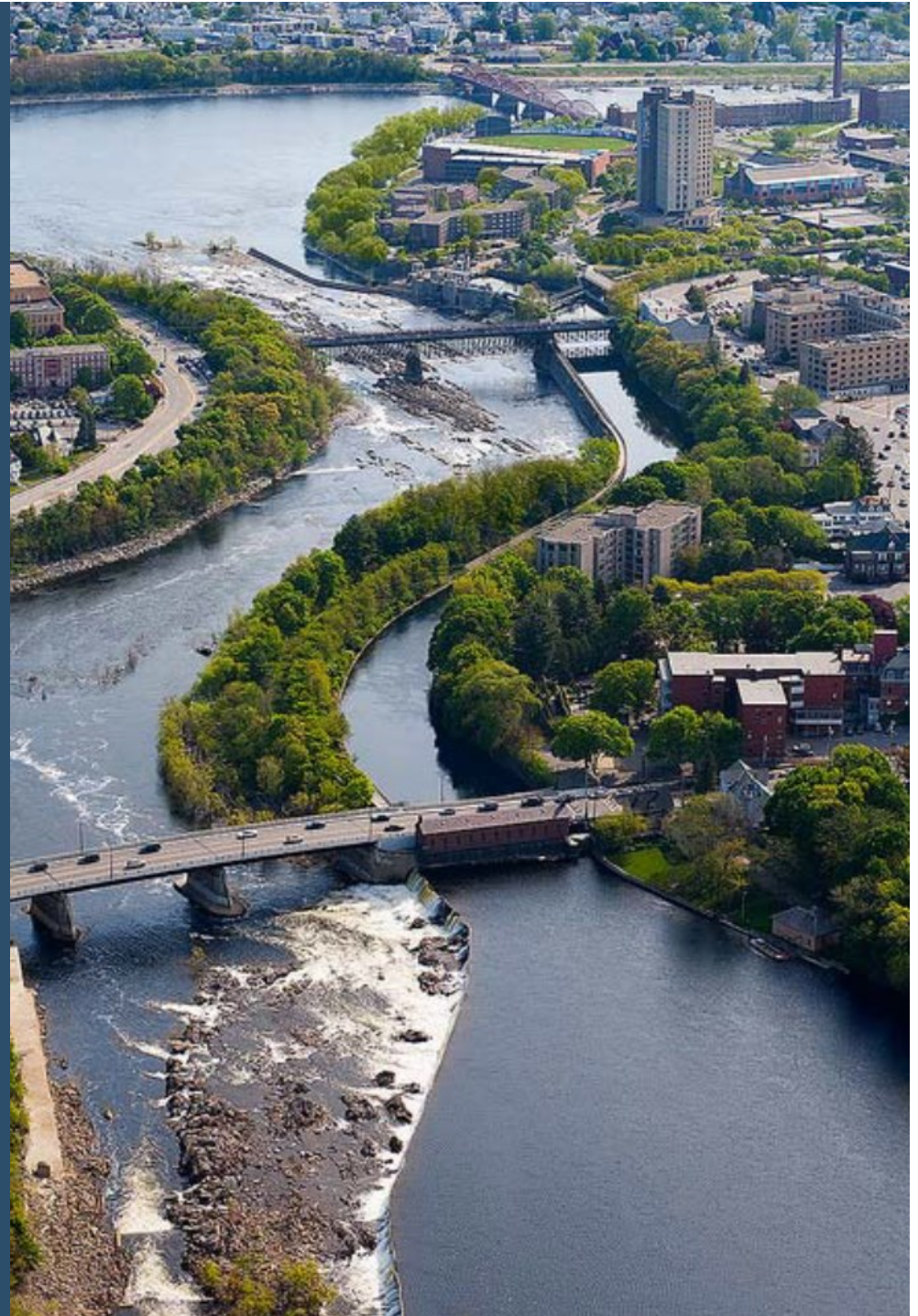
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ACKNOWLEDGMENTS

The *Greater Lowell Comprehensive Economic Development Strategy for May 2020 - May 2025* has been funded through an Economic Adjustment Assistance grant from the Economic Development Administration (EDA) of the U.S. Department of Commerce with local matches provided by the Northern Middlesex Council of Governments (NMCOG), principally through state contracts and local assessments.

The Northern Middlesex Council of Governments wishes to acknowledge the participation and financial assistance from its economic development partners in completing this document. Without the active participation of the Greater Lowell CEDS Committee, the completion of this document would not have been possible.

CEDS COMMITTEE

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INTRODUCTION

What is a CEDS?

The Northern Middlesex Council of Governments (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. NMCOG has been developing the Comprehensive Economic Development Strategy (CEDS) for the Greater Lowell region since the *2004-2008 Greater Lowell CEDS*. EDA describes the Comprehensive Economic Development Strategy (CEDS) as “a blueprint for regional economic development created by a diverse working group of representatives from local private, public and nonprofit sectors”. The CEDS contributes to effective economic development in communities and regions through a locally-based, regionally-driven economic development planning process. The CEDS provides the capacity-building foundation by which the public sector, working in conjunction with other economic actors (individuals, firms and industries), creates the environment for regional economic prosperity. It is a key component in establishing and maintaining a robust economic ecosystem by helping to build regional capacity (through hard and soft infrastructure) that contributes to individual, business and community success.

The CEDS “grass-roots” planning process provides a vehicle for private industry, individuals, organizations, local governments, and education providers to engage in meaningful debate to identify capacity building efforts that would best serve economic development in the region. Where appropriate, the CEDS seeks to integrate or leverage other regional planning efforts, including the use of other available federal funds, private sector resources, and state support which can advance a region’s CEDS goals and objectives.

Regions must update their CEDS at least every five years to qualify for EDA assistance under its Public Works and Economic Adjustment Assistance programs. The CEDS is also a prerequisite for designation by EDA as an Economic Development District (EDD).

CEDS Structure

The Greater Lowell CEDS is divided into five main sections:

1. **Summary Background** - An overview of regional economic conditions.
2. **SWOT Analysis** - An in-depth analysis of regional Strengths, Weaknesses, Opportunities and Threats.
3. **Strategic Direction & Action Plan** - The strategic direction and action plan build on findings from the SWOT analysis and incorporate elements from local and regional plans as appropriate (for example, objectives and projects identified in the Regional Transportation Plan or local Master Plans).
4. **Evaluation Framework** - Performance measures used to evaluate the implementation of the CEDS and the impact on the regional economy.

In addition to the four sections above, **economic resilience**, the ability to avoid, withstand, and recover from economic shifts, natural disasters, the impacts of climate change and other challenges, is examined in the SWOT analysis and addressed with distinct goals and action items. Similarly, the region’s **Opportunity Zones** are examined in the SWOT analysis and addressed with specific goals and action items . This format follows EDA’s January 2020 CEDS guidelines.

INTRODUCTION

The Greater Lowell Region

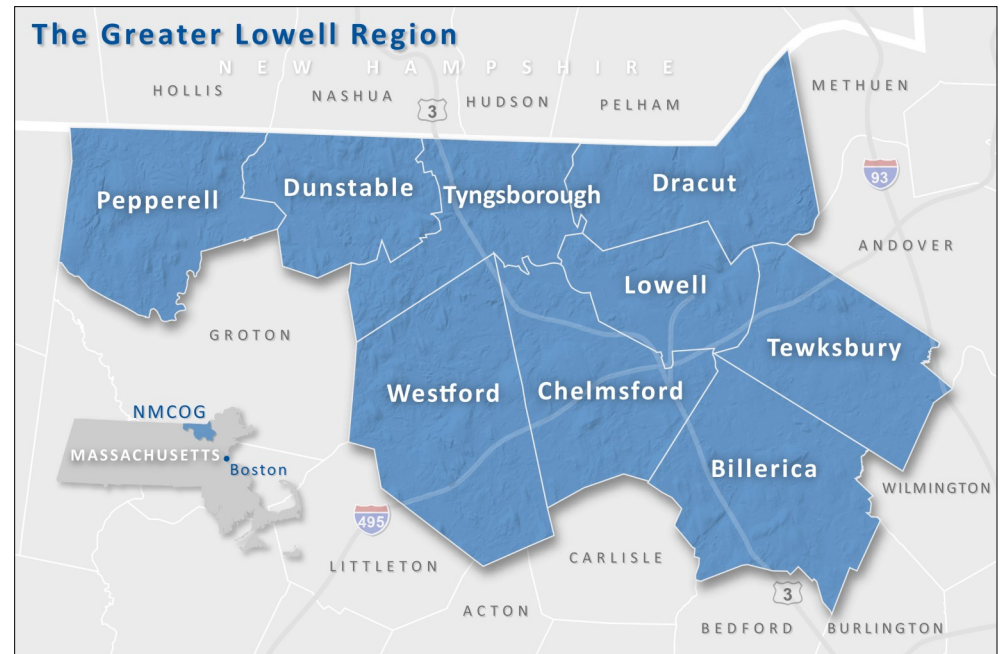
The Greater Lowell region consists of the City of Lowell and the towns of Billerica, Chelmsford, Dracut, Dunstable, Pepperell, Tewksbury, Tyngsborough and Westford. The region is located along the Merrimack River in the northeast section of Massachusetts and is bordered by Essex County to the east, by 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 Route 3 and Interstates 93 and 495.

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 unemployment rate for the Greater Lowell region declined from 3.1% in December 2017 to 2.3% in December 2019, which fared better than the national and state unemployment rates for the same time period. The unemployment rates for the Greater Lowell communities ranged from 1.7% in Dunstable to 2.8% in Lowell as of December 2019. However, there remain pockets of high unemployment in specific neighborhoods in the City of Lowell, such as the Acre.

Per capita income for the region in 2013-2017, the most recent data available, was \$35,961, between the state's per capita income of \$39,913 and the national per capita income of \$31,177. Per capita income within the region ranged from \$23,768 in Lowell to \$51,526 in Westford. The per capita income for most Census Districts in Lowell remains below 80% of the national per capital income figure.

The largest number of employees in the region were in the Education and Health Services (24.2%), Professional and Business Services (17.4%), Trade, Transportation and Utilities (15.5%) and Manufacturing (14.3%) industries as of the third quarter of 2018. Employers in the region with more than 1,000 employees include Lowell General Hospital, Market Basket, UMass Lowell, Raytheon, United Parcel Service, Kronos, Zoll Medical Group and PAREXEL International. The region is also supportive of smaller businesses, as well as incubator firms supported by UMass Lowell.



SUMMARY BACKGROUND

OVERVIEW

The Greater Lowell region has worked to address its infrastructure issues through public, private and non-profit investments. Residents of the Greater Lowell communities have access to employment opportunities in the region, in New Hampshire and in the Greater Boston area. Access by public transit and through the highway network help provide additional employment opportunities for the Greater Lowell labor force.

The economic climate in the region since the 2008 depression has been quite favorable with increasing labor force and employment numbers and declining unemployment rates. The region has extensive industrial and commercial assets, as well as a diverse housing stock to address the needs of employers and employees. The City, which accounts for 28% of the total jobs in the region, has taken the lead by investing in the Hamilton Canal Innovation District (HCID) through EDA Public Works and state funds. The City of Lowell continues to focus on the Jackson-Appleton-Middlesex Urban Renewal Plan, which is adjacent to the HCID, and the Ayer's Industrial Park Urban Renewal Plan, designed to attract private investment to an underdeveloped area adjacent to the Lowell Connector. UMass Lowell has provided extensive investments in scientific research and development and entrepreneurial support. The suburban communities have played a role in the favorable economy—Billerica has attracted high tech firms from Cambridge and focused on developing the Middlesex Turnpike; Chelmsford has actively marketed the Route 129 corridor to encourage private investment; Dracut has focused its attention on the reuse of its mill space for small businesses; Dunstable has updated its Master Plan and been designated as a Green Community; Pepperell has focused its attention on the Route 113 business corridor through its updated Master Plan; Tewksbury has established a Regional Emergency Communications Center (RECC), Tyngsborough has made major investments in its sewer system to support business expansion; and Westford has completed its Economic Development section of the Master Plan as a blueprint for the Town and business community to follow.

Priority Industries

The 2018-2021 MassHire Greater Lowell Workforce Board (MHGLWB) Strategic Plan identified five priority industries for the Greater Lowell area:

- Advanced Manufacturing
- Healthcare and Social Assistance
- Professional, Technical, and Scientific (IT)
- Education
- Construction

To identify priority industries, the MHGLWB evaluated labor market data, feedback from industry and company leader focus groups, success of training, career pathways, job placement, retention, and wages in particular industries.

Advanced Manufacturing, Healthcare, Technology and Science

The region's manufacturing history and transformation through the adoption of new technologies has prepared it for the future. Proximity to the Greater Boston area's STEM clusters and support from UMass Lowell (UML) provide the region with remarkable opportunities. High tech and biomedical firms from Boston and Cambridge moving to Billerica, Chelmsford and Westford reflect the opportunities to attract new and expanding enterprises to the region.

UMass Lowell's Role in Regional Innovation and Entrepreneurship

Over the past decade, UML has significantly expanded its science, research and entrepreneurial support facilities and capabilities through 1) the \$80 million Emerging Technologies and Innovation Center (ETIC), which focuses on nano-tech research and development, 2) the \$40 million Health and Social Sciences Building, and 3) the Innovation Hub in Lowell's Hamilton Canal District as an incubator/accelerator that provides lab and work space, access to research resources, prototype development, and mentorship for tech startups. Within the Innovation Hub, UML's Medical Device Development Center (M2D2) focuses on small businesses and entrepreneurs in biotech and medical device development.

Education

The education industry grew by 18.3% between 2013 and 2018, and is expected to employ 12,739 workers by 2026. The region is home to UMass Lowell and Middlesex Community College, and has three vocational technical high schools: Greater Lowell, Nashoba Valley, and Shawsheen Valley Technical High Schools.

Construction

The construction industry grew by nearly 12% between 2013 and 2018. The average annual wages for the construction industry in the third quarter of 2018 were \$70,335, more than twice the region's per capita income and greater than the living wage (\$60,560) in the region.

SUMMARY BACKGROUND

POPULATION

Table 1: Population

| |
|----------------------------------|
| 2010 Census: 286,901 |
| 2020 Projection: 299,617* |
| 2030 Projection: 298,889* |
| 2040 Projection: 295,041* |

**Projections by the UMass Donahue Institute for MassDOT*

According to the U.S. Census Bureau, the Greater Lowell region had a population of 286,901 in 2010, which represented an increase of 2% since 2000. Based upon population projections developed by the UMass Donahue Institute for MassDOT, the region's population was expected to increase by 4.4% to 299,617 in 2020. The population was then expected to decline to 295,901 in 2040 as shown in Table 1 to the left.

The 2013-2017 American Community Survey (ACS) developed by the U.S. Census Bureau estimated that the region's population increased by 5.37% since 2010. The City of Lowell accounts for 37% of the region's Population and has a population density of 7,325 persons per square mile. The City grew by 4% between 2010 and 2013-2017, while Westford and Tyngsborough grew the fastest in the region at 8.9% and 7.7% respectively. Table 2 on the right breaks out the Greater Lowell population figures by community.

Table 2: Population by Community

| Community | 2000 Population | 2010 Population | 2013-2017 Population | % Change 2010 - 2013-2017 |
|--------------|-----------------|-----------------|----------------------|---------------------------|
| Billerica | 38,981 | 40,243 | 42,791 | 5.95 |
| Chelmsford | 33,858 | 33,802 | 35,067 | 3.61 |
| Dracut | 28,562 | 29,457 | 31,113 | 5.32 |
| Dunstable | 2,829 | 3,179 | 3,337 | 4.73 |
| Lowell | 105,167 | 106,519 | 110,964 | 4.01 |
| Pepperell | 11,142 | 11,497 | 12,049 | 4.58 |
| Tewksbury | 28,851 | 28,961 | 30,666 | 5.56 |
| Tyngsborough | 11,081 | 11,292 | 12,232 | 7.68 |
| Westford | 20,754 | 21,951 | 24,087 | 8.87 |
| Total | 281,225 | 286,901 | 302,306 | 5.37 |

Source: 2000 and 2010 U.S. Census and 2013-2017 American Community Survey

SUMMARY BACKGROUND

LABOR FORCE AND EMPLOYMENT LEVELS

Table 3: Labor Force Levels by Community and Region – December 2017 – December 2019

| Community | 2017 December | 2018 December | 2019 December | % Change December 2017- 2019 |
|------------------------------|----------------|----------------|----------------|------------------------------|
| Billerica | 23,680 | 25,262 | 25,501 | 7.7 |
| Chelmsford | 19,087 | 19,749 | 19,941 | 4.5 |
| Dracut | 17,868 | 18,662 | 18,812 | 5.3 |
| Dunstable | 1,897 | 2,002 | 2,005 | 5.7 |
| Lowell | 55,151 | 57,504 | 58,080 | 5.3 |
| Pepperell | 7,036 | 7,426 | 7,417 | 0.5 |
| Tewksbury | 17,173 | 17,999 | 18,148 | 5.7 |
| Tyngsborough | 6,969 | 7,223 | 7,335 | 5.3 |
| Westford | 12,642 | 13,078 | 13,243 | 4.8 |
| Greater Lowell Region | 161,503 | 168,905 | 170,482 | 5.6 |
| Massachusetts | 3,621,200 | 3,821,200 | 3,849,800 | 6.3 |

The labor force in the Greater Lowell region has been increasing consistently since 2012. Between December 2017 and December 2018, the Greater Lowell labor force increased from 161,503 to 170,482, or by 5.6%, as shown in Table 3 on the left. The increase in the labor force ranged from 0.5% in Pepperell to 7.7% in Billerica. The growth in the labor force lagged behind the State’s growth rate of 6.3%. The strength of the Greater Lowell labor force is the level of educational attainment that prepares workers for demanding positions.

Source: Massachusetts Executive Office of Labor and Workforce Development, LAUS data

Employment levels in the Greater Lowell region have increased since 2012 as well, given the favorable economic conditions. The Greater Lowell employment levels increased by 6.4% from 156,420 in December 2017 to 166,507, which fell behind the State’s growth rate in employment levels of 7.1%. As shown in Table 4 on the right, the growth in employment levels ranged from 5.2% in Chelmsford to 8.5% in Billerica. The increase in employment levels reflects the business growth throughout the region.

Table 4: Employment Levels by Community and Region – December 2017 – December 2019

| Community | 2017 December | 2018 December | 2019 December | % Change December 2017- 2019 |
|------------------------------|----------------|----------------|----------------|------------------------------|
| Billerica | 23,005 | 24,633 | 24,968 | 8.5 |
| Chelmsford | 18,581 | 19,294 | 19,556 | 5.2 |
| Dracut | 17,252 | 18,145 | 18,391 | 6.6 |
| Dunstable | 1,845 | 1,962 | 1,971 | 6.8 |
| Lowell | 53,150 | 55,669 | 56,425 | 6.2 |
| Pepperell | 6,851 | 7,236 | 7,268 | 6.1 |
| Tewksbury | 16,679 | 17,537 | 17,775 | 6.6 |
| Tyngsborough | 6,773 | 7,067 | 7,162 | 5.7 |
| Westford | 12,284 | 12,817 | 12,991 | 5.8 |
| Greater Lowell Region | 156,420 | 164,360 | 166,507 | 6.4 |
| Massachusetts | 3,509,500 | 3,719,200 | 3,758,200 | 7.1 |

Source: Massachusetts Executive Office of Labor and Workforce Development, LAUS data

SUMMARY BACKGROUND

**Table 5: Unemployment Rates by Community and Region:
December 2017 – December 2019**

| Community | 2017 December | 2018 December | 2019 December | % Change December 2017- 2019 |
|------------------------------|------------------|------------------|------------------|------------------------------------|
| Billerica | 2.9 | 2.5 | 2.1 | -27.6 |
| Chelmsford | 2.7 | 2.3 | 1.9 | -29.6 |
| Dracut | 2.8 | 2.8 | 2.2 | -21.4 |
| Dunstable | 2.7 | 2.0 | 1.7 | -37.0 |
| Lowell | 3.6 | 3.2 | 2.8 | -22.2 |
| Pepperell | 2.6 | 2.6 | 2.0 | -23.1 |
| Tewksbury | 2.9 | 2.6 | 2.1 | -27.6 |
| Tyngsborough | 2.8 | 2.2 | 2.4 | -14.3 |
| Westford | 2.8 | 2.0 | 1.9 | -32.1 |
| Greater Lowell Region | 3.1 | 2.7 | 2.3 | -25.8 |
| Massachusetts | 3.1 | 2.7 | 2.4 | -22.6 |
| United States | 3.9 | 3.7 | 3.4 | -12.8 |

Source: Massachusetts Executive Office of Labor and Workforce Development

UNEMPLOYMENT AND PER CAPITA INCOME

Unemployment Rates

The unemployment rates in the Greater Lowell region have mirrored those for the State of Massachusetts and been lower than the national unemployment rates between December 2017 and December 2019 as shown in Table 5. The region's unemployment rate decreased by 25.8% from 3.1% in December 2017 to 2.3% in December 2019. The early 2020 unemployment rates vary from 1.7% in Dunstable to 2.8% in Lowell. Specific Lowell neighborhoods, such as the Acre, are still experiencing high unemployment rates.

Per Capita Income

The per capita income in the Greater Lowell region increased by 49.3% between \$24,081 in 1999 to \$35,961 in 2013-2017 as shown in Table 6. The region's per capita income ranged from \$23,768 in the City of Lowell To \$57,005 in Dunstable according to the 2013-2017 American Community Survey. The per capita income for the City of Lowell is less than 80% of the national per capita income at 76.2%, thus making the City eligible for EDA funding. Certain Lowell neighborhoods have even lower per capita income figures.

Table 6: Per Capita Income 1999-2013/2017

| Community | 1999 | 2013- 2017 | Percent Change |
|------------------------------|-----------------|-----------------|----------------|
| Billerica | \$24,953 | \$38,383 | 53.8 |
| Chelmsford | \$30,465 | \$49,564 | 62.7 |
| Dracut | \$23,750 | \$36,323 | 52.9 |
| Dunstable | \$30,608 | \$57,005 | 86.2 |
| Lowell | \$17,557 | \$23,768 | 35.4 |
| Pepperell | \$25,722 | \$40,919 | 59.1 |
| Tewksbury | \$27,031 | \$41,193 | 52.4 |
| Tyngsborough | \$27,249 | \$43,787 | 60.7 |
| Westford | \$37,979 | \$51,526 | 35.7 |
| Greater Lowell region | \$24,081 | \$35,961 | 49.3 |
| Massachusetts | \$25,952 | \$39,913 | 53.8 |
| United States | \$21,587 | \$31,177 | 44.4 |

Source: 2000 U.S. Census, 2013-2017 American Community Survey

SUMMARY BACKGROUND

Table 7: Employment Projections By Municipality

| Community | 2010 Employment | 2020 Employment Projections | 2030 Employment Projections | 2040 Employment Projections | % Change 2010-2040 |
|------------------------------|-----------------|-----------------------------|-----------------------------|-----------------------------|--------------------|
| Billerica | 25,070 | 26,190 | 25,983 | 25,975 | 3.6 |
| Chelmsford | 19,603 | 24,005 | 23,813 | 23,806 | 21.4 |
| Dracut | 5,334 | 6,005 | 5,958 | 5,956 | 11.7 |
| Dunstable | 321 | 300 | 298 | 298 | -7.2 |
| Lowell | 38,411 | 37,005 | 36,708 | 36,699 | -4.5 |
| Pepperell | 2,052 | 1,600 | 1,588 | 1,587 | -22.7 |
| Tewksbury | 14,570 | 16,000 | 15,872 | 15,867 | 8.9 |
| Tyngsborough | 4,212 | 4,800 | 4,762 | 4,760 | 13 |
| Westford | 9,759 | 12,515 | 12,416 | 12,411 | 27.2 |
| Greater Lowell Region | 119,332 | 128,420 | 127,398 | 127,359 | 6.7 |

Source: 2010 U.S. Census and projections by UMass Donohue Institute, MAPC, MassDOT and NMCOG

EMPLOYMENT PROJECTIONS

Tables 7 and 8 on this page show employment projections for the region, municipalities and for occupations with high employment projections, as calculated by the Massachusetts Executive Office of Labor and Workforce Development. Employment is expected to increase by 6.7% between 2010 and 2040.

Seven of the top twelve occupations forecast for the strongest growth on Table 8 paid mean annual wages below the \$60,560 living wage for a single-earner household renting a two-bedroom unit in the region. The five occupations paying above the living wage require at least a Bachelor's degree for entry.

Table 8: Top 12 Occupations for Projected Employment Growth in the Greater Lowell Workforce Development Area

| Occupation | Total Job Growth 2016-2026 | % Change 2016-2026 | Projected 2026 Employment | Typical education needed for entry | 2018 Mean Annual Wage |
|--|----------------------------|--------------------|---------------------------|------------------------------------|-----------------------|
| Personal Care Aides | 820 | 28.0 | 3,745 | No formal educational credential | \$29,109 |
| Home Health Aides | 550 | 36.9 | 2,040 | No formal educational credential | \$28,592 |
| Combined Food Preparation and Serving Workers | 480 | 17.7 | 3,192 | No formal educational credential | \$26,065 |
| Software Developers, Applications | 311 | 24.5 | 1,582 | Bachelor's degree | \$119,473 |
| Nursing Assistants | 304 | 16.5 | 2,145 | Postsecondary non-degree award | \$31,427 |
| Taxi Drivers and Chauffeurs | 266 | 16.6 | 1,872 | No formal educational credential | \$27,308 |
| Registered Nurses | 262 | 11.5 | 2,532 | Bachelor's degree | \$84,708 |
| Elementary School Teachers, Except Special Education | 189 | 15.5 | 1,410 | Bachelor's degree | \$99,028 |
| Plumbers, Pipefitters, and Steamfitters | 169 | 16.6 | 1,189 | High school diploma or equivalent | \$57,489 |
| Teacher Assistants | 166 | 12.5 | 1,494 | Some college, no degree | \$33,508 |
| Middle School Teachers | 153 | 15.5 | 1,137 | Bachelor's degree | \$87,906 |
| Secondary School Teachers | 144 | 15.6 | 1,066 | Bachelor's degree | \$89,068 |

Source: Massachusetts Executive Office of Labor and Workforce Development

SUMMARY BACKGROUND

Table 9: Years of School Completed, Age 25 and Over, 2013-2017

| Educational Attainment | Greater Lowell Region | | City of Lowell | Region Excluding Lowell | Massachusetts | United States |
|-----------------------------------|-----------------------|-------------|----------------|-------------------------|---------------|---------------|
| | 2013-2017 | Percent | Percent | Percent | Percent | Percent |
| No High School Diploma or GED | 22,208 | 10.8 | 20.2 | 5.9 | 9.7 | 12.7 |
| High School Diploma or Equivalent | 60,521 | 29.4 | 34.2 | 26.9 | 24.7 | 27.3 |
| Some College, No Degree | 34,044 | 16.5 | 16.2 | 16.7 | 15.8 | 20.8 |
| Associate's Degree | 16,836 | 8.2 | 6.9 | 8.9 | 7.7 | 8.3 |
| Bachelor's Degree | 43,047 | 20.9 | 13.0 | 25.0 | 23.4 | 19.1 |
| Graduate or Professional Degree | 29,106 | 14.1 | 9.6 | 16.6 | 18.7 | 11.8 |
| Total | 205,762 | 99.9 | 100.1 | 100.0 | 100.0 | 100.0% |

Source: 2013-2017 American Community Survey

Industry Composition

The Greater Lowell region is comprised largely of Service-Providing industries. Service-Providing industries comprise 84.2% of the total establishments and 78.9% of the total average monthly employment. The Goods-Producing Domain has higher average weekly wages (\$1,742) largely due to the Manufacturing (\$1,941) and Construction (\$1,349) industries. However, the Information (\$2,123) and Professional Business Services (\$1,954) sectors offer higher average weekly wages than the Manufacturing and Construction industries.

EDUCATIONAL ATTAINMENT AND INDUSTRY COMPOSITION

Educational Attainment

The Greater Lowell region has a well-educated workforce that can address the skill needs of emerging industries in the Science, Technology, Engineering and Mathematics (STEM) field. The region exceeds the nation in its percentage of workers with Bachelor's Degrees and Graduate or Professional Degrees (35%). Three communities in the region – Westford (69.1%), Dunstable (57.3%) and Chelmsford (52.2%) – have more than 50% of their workers with Bachelor's Degrees or Graduate or Professional Degrees. The workforce also has been trained for manufacturing jobs that have among the highest salaries in the region.

Table 10: Industry Composition of the Greater Lowell region: 2018 (Q3)

| Description | No. of Establishments 2018 (Q3) | Average Monthly Employment 2018 (Q3) | Average Weekly Wages 2018 (Q3) |
|--|---------------------------------|--------------------------------------|--------------------------------|
| Goods-Producing Domain | 1,461 | 27,221 | \$1,742 |
| Natural Resources and Mining (incl. Agriculture, fishing) | 15 | 286 | \$586 |
| Construction | 1,084 | 8,492 | \$1,349 |
| Manufacturing | 362 | 18,443 | \$1,941 |
| Service-Providing Domain | 7,767 | 101,883 | \$1,162 |
| Trade, Transportation and Utilities (includes wholesale, retail trade) | 1,276 | 19,965 | \$910 |
| Information | 150 | 4,113 | \$2,123 |
| Financial Activities | 431 | 3,558 | \$1,293 |
| Professional and Business Services | 1,376 | 22,482 | \$1,954 |
| Education and Health Services | 2,988 | 31,242 | \$937 |
| Leisure and Hospitality | 709 | 12,783 | \$407 |
| Other Services , Excludes Public Admin | 712 | 3,877 | \$734 |
| Public Administration | 119 | 3,794 | \$1,455 |
| Total, All Industries | 9,228 | 129,104 | \$1,284 |

Source: Executive Office of Labor and Workforce Development ES-202 Reports – 2018 (Q3)

SUMMARY BACKGROUND

MAJOR INDUSTRIES

Table 11: Largest Industries by Total Employment in 2018 (Q3)

| Industry | % of Regional Employment | Average Monthly Employment | Average Annual Wages | Employment Location Quotient |
|-------------------------------------|--------------------------|----------------------------|----------------------|------------------------------|
| Health Care and Social Assistance | 15.8 | 20,450 | \$48,133 | 0.88 |
| Manufacturing | 14.3 | 18,443 | \$101,201 | 2.09 |
| Professional and Technical Services | 10.9 | 14,088 | \$132,582 | 1.18 |
| Retail Trade | 8.2 | 10,611 | \$28,686 | 0.83 |
| Educational Services | 8.2 | 10,600 | \$50,161 | 0.92 |
| Accommodation and Food Services | 8.0 | 10,290 | \$20,918 | 0.87 |
| Construction | 6.6 | 8,492 | \$70,335 | 1.33 |
| Administrative and Waste Services | 5.1 | 6,563 | \$40,898 | 0.95 |

Source: Massachusetts Executive Office of Labor and Workforce Development, ES-202

With the exception of retail trade, the eight industries with the region's largest employment increased employment by at least 6.5% from 2013 to 2018. In contrast, the retail trade sector reduced employment by 0.6% during that time period. Health care and social assistance, the region's largest industry, grew by more than 20%. However, average annual wages in that industry, as determined by the Massachusetts Executive Office of Labor and Workforce Development (EOLWD), was below \$50,000. This is due largely to lower wages for positions in home health care services, nursing and residential care facilities, social assistance, and child day care services, all of which are included in the broader health care and social assistance industry.

Manufacturing, the region's second largest employer, grew by 6.5%, while the third largest industry, professional and technical services, saw employment growth of 38.5%. EOLWD calculates average annual wages of more than \$100,000 for both industries.

Table 12: Change in Employment of Largest Industries, 2013-2018

| Industry | 2013 3rd Qtr | 2018 3rd Qtr. | % Change |
|-------------------------------------|--------------|---------------|----------|
| Health Care and Social Assistance | 16,956 | 20,450 | 20.6 |
| Manufacturing | 17,312 | 18,443 | 6.5 |
| Professional and Technical Services | 10,172 | 14,088 | 38.5 |
| Retail Trade | 10,674 | 10,611 | -0.6 |
| Educational Services | 8,958 | 10,600 | 18.3 |
| Accommodation and Food Services | 9,654 | 10,290 | 6.6 |
| Construction | 7,587 | 8,492 | 11.9 |
| Administrative and Waste Services | 6,155 | 6,563 | 6.6 |

Source: Massachusetts Executive Office of Labor and Workforce Development, ES-202

Location Quotients

Location Quotients (LQ) are a tool for assessing the various industry clusters located in a region. They reflect the concentration of a particular industry in one area (the Greater Lowell region) to the concentration of the same industry in a larger geographic area (Massachusetts) and are considered to be significant when they are greater than 1.0.

Based on the LQ, Manufacturing, Professional and Technical Services, and Construction are more heavily concentrated in the region than within the State. Of the region's largest eight industries based upon employment, each industry has an LQ of at least 0.83. Location Quotients for industries with 500 employees or more and an LQ of 1.5 or more are shown on the following page. In addition, while Scientific Research and Development Services had an LQ of only 1.2 in 2018, employment in the industry has more than doubled since 2014 to more than 3,000 employees. Location Quotients for all industries in the region are located in Appendix A.

SUMMARY BACKGROUND

Industries with an employment LQ of 1.5 or higher and an average monthly employment of at least 500 are listed below. The North American Industry Classification System (NAICS) is the standard used by Federal statistical agencies in classifying business establishments. The NAICS code is hierarchal, with sectors divided into subsectors, which are in turn divided into industry groups. Industrial machinery manufacturing, electronic instrument manufacturing, and semiconductor and electronic component manufacturing, all industry groups within the manufacturing sector, have

LOCATION QUOTIENTS

Table 13: Industries with 500+ Employees and Location Quotients of 1.5 or More

| NAICS Sector | NAICS Subsector or Industry Group | NAICS Industry Title | LQ - Avg. Monthly Employment | Average Monthly Employment | Average Annual Wages |
|--------------|-----------------------------------|---|------------------------------|----------------------------|----------------------|
| 23 | | Construction | | | |
| | 238 | Construction - Specialty trade contractors | 1.61 | 6,709 | \$69,816 |
| | 2382 | Building equipment contractors | 1.92 | 3,807 | \$65,493 |
| | 2389 | Other specialty trade contractors | 1.56 | 1,108 | \$75,298 |
| 31-33 | | Manufacturing | | | |
| | 3231 | Printing and related support activities | 1.69 | 593 | \$60,799 |
| | 3261 | Plastics product manufacturing | 1.9 | 809 | \$71,853 |
| | 3327 | Machine shops and threaded product mfg. | 2.18 | 829 | \$60,150 |
| | 333 | Machinery manufacturing | 2.84 | 1,740 | \$92,971 |
| | 3332 | Industrial machinery manufacturing | 6.2 | 979 | \$96,673 |
| | 3339 | Other general purpose machinery manufacturing | 3.78 | 546 | \$91,198 |
| | 334 | Computer and electronic product mfg. | 3.97 | 7,702 | \$115,288 |
| | 3344 | Semiconductor and electronic component manufacturing | 4.54 | 2,412 | \$91,250 |
| | 3345 | Electronic instrument manufacturing | 5.28 | 4,779 | \$126,603 |
| | 3391 | Medical equipment and supplies manufacturing | 1.51 | 609 | \$82,959 |
| 42 | | Wholesale Trade | | | |
| | 4236 | Appliance & electric goods merchant wholesale | 1.65 | 583 | \$100,114 |
| 48 | | Transportation | | | |
| | 484 | Truck transportation | 2.08 | 1,254 | \$64,709 |
| | 4841 | General freight trucking | 2.16 | 783 | \$66,269 |
| 51 | | Information | | | |
| | 517 | Information - Telecommunications | 3.01 | 1,877 | \$101,470 |
| | 5173 | Wired and Wireless Telecommunication Carriers | 3.24 | 1,590 | \$97,299 |
| 56 | | Administrative and Support and Waste Management and Remediation Services | | | |
| | 5616 | Investigation and security services | 1.81 | 1,229 | \$40,254 |
| 62 | | Health Care and Social Assistance | | | |
| | 6219 | Other ambulatory health care services | 1.61 | 500 | \$46,459 |
| 81 | | Other Services (except Public Administration) | | | |
| | 811 | Other Services - Repair and maintenance | 1.57 | 1,547 | \$54,196 |

Source: Massachusetts Executive Office of Labor and Workforce Development, ES-202, 2018 Third Quarter Report

SUMMARY BACKGROUND

Table 14: New Businesses Formed 2010-2018

| Community | Number of Businesses 2010 | Number of Businesses 2018 | New Businesses 2010 to 2018 | Percent Change 2010 to 2018 |
|--------------|---------------------------|---------------------------|-----------------------------|-----------------------------|
| Billerica | 1,160 | 1,305 | 145 | 12.5 |
| Chelmsford | 1,098 | 1,198 | 100 | 9.1 |
| Dracut | 571 | 684 | 113 | 19.8 |
| Dunstable | 61 | 79 | 18 | 29.5 |
| Lowell | 1,995 | 3,440 | 1,445 | 72.4 |
| Pepperell | 231 | 263 | 32 | 13.9 |
| Tewksbury | 838 | 909 | 71 | 8.5 |
| Tyngsborough | 361 | 388 | 27 | 7.5 |
| Westford | 651 | 745 | 94 | 14.4 |
| Total | 6,966 | 9,011 | 2,045 | 29.4 |

Source: Massachusetts Executive Office of Labor and Workforce Development, ES-202

New Jobs

The Greater Lowell region has also experienced significant job growth since the end of the last recession. As shown in Table 15, the number of jobs in the region increased by 15.2% between 2010 and 2018. More than one-third of the job growth (5,138) occurred in the City of Lowell and more than one-quarter of the job growth (4,627) occurred in Billerica. Dracut, Tewksbury and Westford also attracted more than 1,000 new jobs during this time period.

Employment Density

Employment density within the Greater Lowell region is shown on the next page in Map 1, Northern Middlesex Employment Density. The map illustrates where businesses with 10 or more employees are located throughout the region. Significant clusters of employers are located along or with easy access to major highways and corridors, as well as in downtown Lowell and other commercial centers.

NEW BUSINESSES AND JOBS

New Businesses

The Greater Lowell region has attracted a substantial number of new businesses since the end of the 2008 recession. As illustrated in Table 14, the region saw a 29.4% increase in the number of businesses between 2010 and 2018. More than half of the region's new businesses located within the City of Lowell. Lowell also experienced the largest percentage increase (72.4%) in businesses between 2010 and 2018.

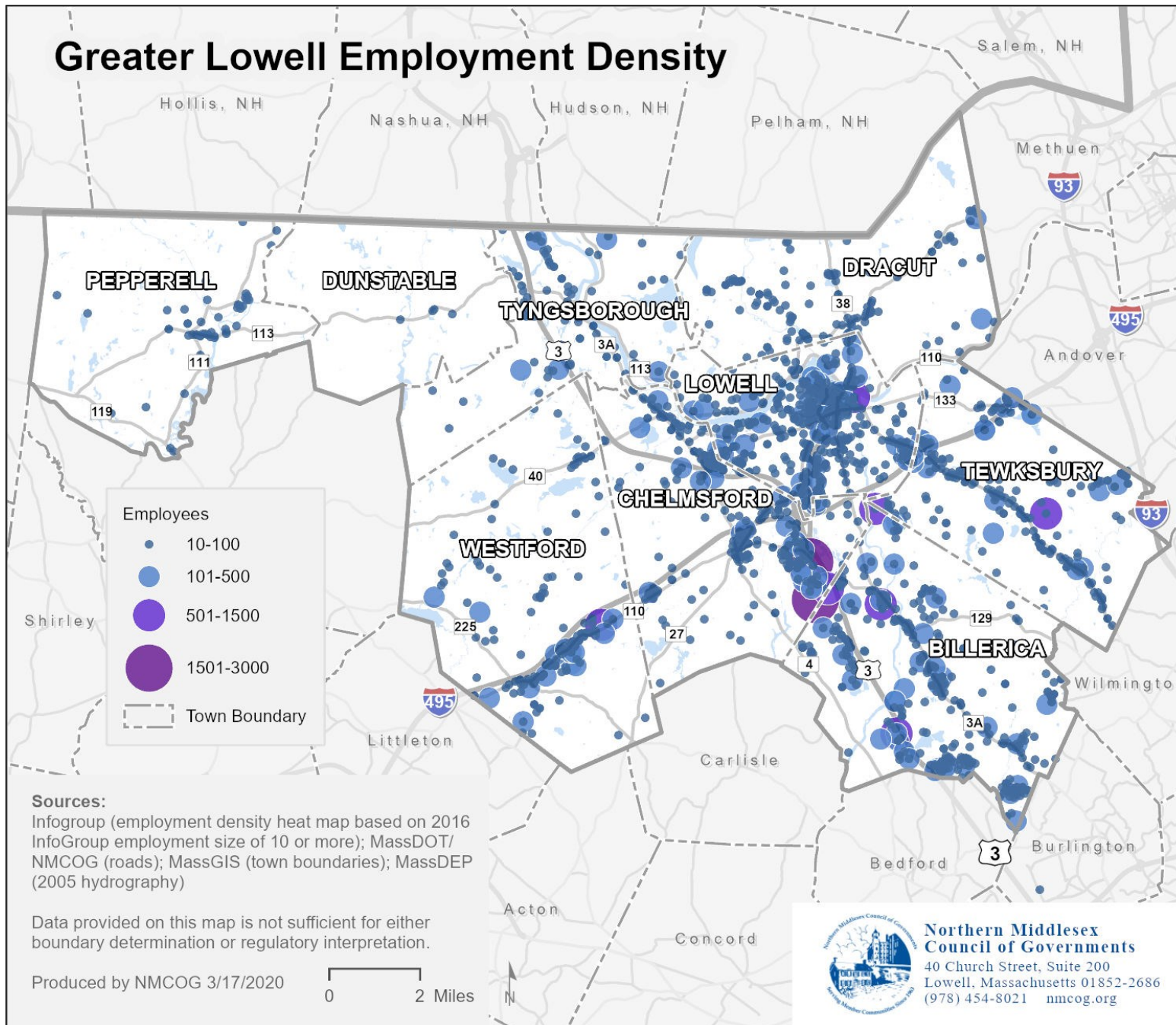
Note: EOLWD data on employment and wages is derived from the ES-202 reports based upon information submitted by employers subject to unemployment compensation laws.

Table 15: New Jobs Created 2010-2018

| Community | Number of Jobs 2010 | Number of Jobs 2018 | New Jobs 2010 to 2018 | Percent Change 2010 to 2018 |
|--------------|---------------------|---------------------|-----------------------|-----------------------------|
| Billerica | 18,024 | 22,651 | 4,627 | 25.7 |
| Chelmsford | 19,979 | 20,801 | 822 | 4.1 |
| Dracut | 4,212 | 5,215 | 1,003 | 23.8 |
| Dunstable | 153 | 245 | 92 | 60.1 |
| Lowell | 27,118 | 32,256 | 5,138 | 18.9 |
| Pepperell | 1,186 | 1,405 | 219 | 18.5 |
| Tewksbury | 13,222 | 14,295 | 1,073 | 8.1 |
| Tyngsborough | 3,587 | 4,018 | 431 | 12.0 |
| Westford | 10,340 | 11,838 | 1,498 | 14.5 |
| Total | 97,821 | 112,724 | 14,903 | 15.2 |

Source: Massachusetts Executive Office of Labor and Workforce Development, ES-202

Map 1: Greater Lowell Employment Density



SUMMARY BACKGROUND

EMPLOYMENT PROJECTIONS BY INDUSTRY

Table 16: Top 15 Industries* for Projected Employment Growth in the Greater Lowell Workforce Development Area

| Industry | Employment Growth 2016-2026 | % Change 2016-2026 | Projected 2026 Employment | Location Quotient | Average Annual Wages |
|---|-----------------------------|--------------------|---------------------------|-------------------|----------------------|
| Health Care and Social Assistance | 2,846 | 14.6 | 22,389 | 0.88 | \$48,133 |
| Educational Services | 1,775 | 16.2 | 12,739 | 0.92 | \$50,161 |
| Professional, Scientific, and Technical Services | 1,207 | 9.5 | 13,899 | 1.18 | \$132,582 |
| Ambulatory Health Care Services | 960 | 14.7 | 7,507 | 0.99 | \$55,574 |
| Accommodation and Food Services | 824 | 8.7 | 10,250 | 0.87 | \$20,918 |
| Construction | 796 | 11.4 | 7,772 | 1.33 | \$70,335 |
| Food Services and Drinking Places | 775 | 8.8 | 9,536 | 0.93 | \$20,397 |
| Wholesale Trade | 744 | 16.3 | 5,300 | 0.97 | \$85,181 |
| Social Assistance | 650 | 14.3 | 5,205 | 1.05 | \$28,223 |
| Specialty Trade Contractors | 630 | 11.3 | 6,185 | 1.61 | \$69,816 |
| Merchant Wholesalers, Durable Goods | 449 | 15.6 | 3,328 | 1.26 | \$83,040 |
| Retail Trade | 360 | 3.4 | 10,880 | 0.83 | \$28,686 |
| Wholesale Electronic Markets and Agents and Brokers | 308 | 33.9 | 1,217 | 1.00 | \$95,358 |
| Other Services (except Government) | 246 | 6.2 | 4,202 | 0.88 | \$38,284 |
| Arts, Entertainment, and Recreation | 215 | 11.6 | 2,074 | 0.86 | \$22,734 |

* Out of seventy-two (72) industries examined and ranked by the Massachusetts Executive Office of Labor and Workforce Development.

Source: Massachusetts Executive Office of Labor and Workforce Development

Table 16 shows the top fifteen (15) industries with the highest projected increase in total employment in the Greater Lowell Workforce Development Area between 2016 and 2026, as calculated by the Massachusetts Executive Office of Labor and Workforce Development. Health care and social assistance, the industry with the largest projected job growth, is already the largest employer in the region (see Table 7). Similarly, the education industry has the second highest projection for job growth and ranks as the fifth largest employer in the region.

Unfortunately, these industries have average annual salaries below the \$60,560 needed to afford a two-bedroom rental at the fair market rate. The CEDS Committee and NMCOG should work with the MassHire Greater Lowell Workforce Board to prioritize higher paying industries that are within the region's industry clusters. The region would benefit from better and higher paying jobs.

SUMMARY BACKGROUND

OPPORTUNITY ZONES

Opportunity Zones were created under the 2017 Tax Cuts and Jobs Act to stimulate economic development and job creation by incentivizing long-term investments in low-income neighborhoods. There are more than 8,760 qualified Opportunity Zones nationwide. By investing in Opportunity Zones, investors stand to gain a temporary deferral on their capital gains if they hold their investments for at least 5 years, and a permanent exclusion from a tax on capital gains if the investments are held for 10 years.

In addition to tax advantages, Opportunity Zones are eligible for EDA funding through its special needs category, even if the area does not meet EDA's economic distress criteria. An additional 189 federal programs could be targeted for additional support. Between January 2018 and January 2020, EDA had invested nearly \$347 million in 239 projects in or near Opportunity Zones across the United States.

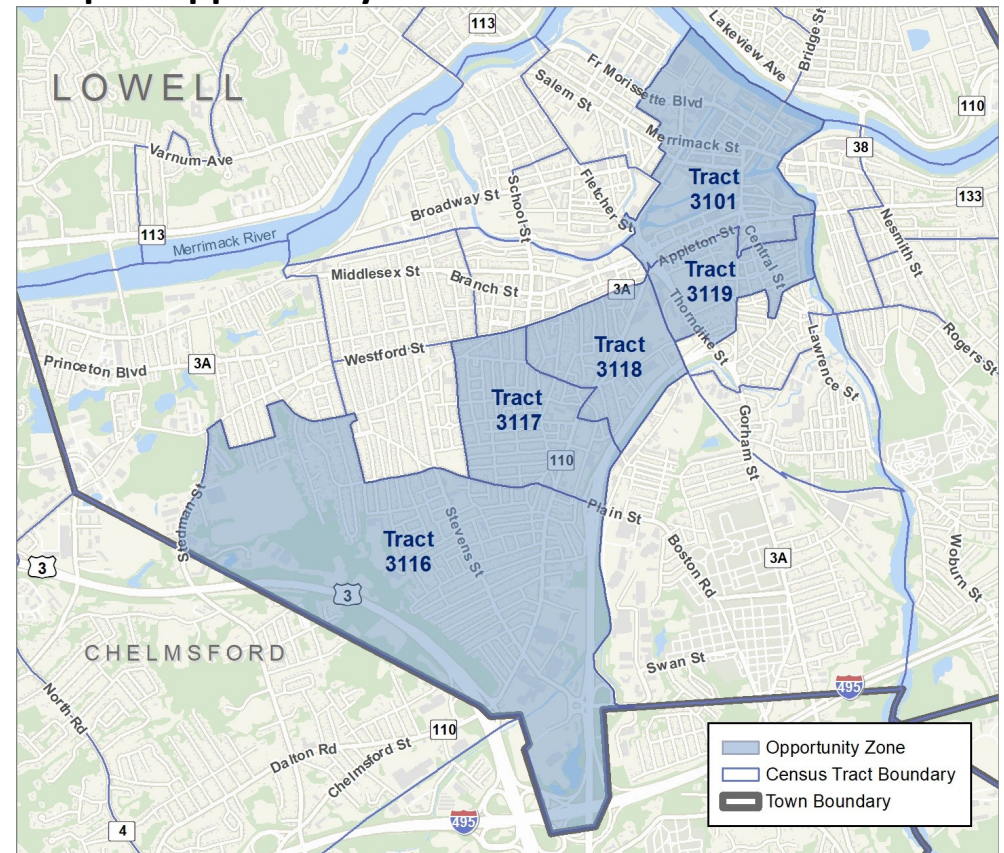
Greater Lowell's Opportunity Zones

The Greater Lowell region has five qualified Opportunity Zones located in the City of Lowell. These Opportunity Zones are in Census Tracts 3101, 3116, 3117, 3118, and 3119 as shown on Map 2. This area includes much of the City's downtown, as well as the Hamilton Canal Innovation District (HCID) and the Jackson/Appleton/Middlesex (JAM) Urban Renewal Area.

LOCUS, which is a national collaboration between Smart Growth America and real estate developers, ranked Lowell's Opportunity Zone in Census Tract 3101 as 6th in Massachusetts for "Smart Growth Potential". Walkability, job density, and housing diversity are used as key criteria for that ranking.

The City of Lowell's website includes a section promoting Opportunity Zones in the City. Lowell's goals for the Opportunity Zones include encouraging investment in the downtown; facilitating investment along the Route 110 corridor; leveraging the presence of the Gallagher Terminal, UMass Lowell, and large employers to stoke investment; and improving roadway, streetscape, and utility infrastructure along major corridors.

Map 2: Opportunity Zones in Lowell



Sources:
US Census/MassGIS (Census 2010 tracts);
MassDOT/NMCOG (roads, structures, open space);
MassGIS (town boundaries); MassDEP (2005/2011 hydrography)

Data provided on this map is not sufficient for either boundary determination or regulatory interpretation.

Produced by NMCOG: 2/12/2020

0 1,000 Feet



The Northern Middlesex Council of Governments
40 Church Street, Suite 200
Lowell, Massachusetts 01852
(978) 454-8021 nmco.org

SUMMARY BACKGROUND

Table 17: 2013-2017 Housing Units

| Community | Total Housing Units | Single Family | Multi-Family | Renter-Occupied |
|------------------------------|---------------------|---------------|--------------|-----------------|
| Billerica | 14,974 | 78.0% | 22.0% | 19.1% |
| Chelmsford | 14,147 | 74.9% | 25.1% | 16.7% |
| Dracut | 11,543 | 71.7% | 28.4% | 23.5% |
| Dunstable | 1,174 | 99.6% | 0.4% | 3.8% |
| Lowell | 41,489 | 37.3% | 62.7% | 57.8% |
| Pepperell | 4,665 | 80.8% | 19.2% | 21.9% |
| Tewksbury | 11,911 | 82.4% | 17.6% | 13.3% |
| Tyngsborough | 4,431 | 84.3% | 15.8% | 14.0% |
| Westford | 8,637 | 91.0% | 9.0% | 10.8% |
| Greater Lowell Region | 112,971 | 64.1% | 35.9% | 31.7% |
| Massachusetts | 2,864,989 | 57.5% | 42.4% | 37.6% |
| United States | 135,393,564 | 67.5% | 32.5% | 36.2% |

Source: U.S. Census Bureau, 2013-2017 ACS 5-Year Estimate

HOUSING UNITS AND HOUSEHOLDS

Housing Units

As shown in Table 17, the Greater Lowell region had 112,971 housing units in 2013-2017. The number of housing units in the region increased by 3.2% between 2010 and 2013-2017. More than thirty-five percent (36.7%) of those housing units in 2013-2017 were in the City of Lowell. Overall, the Greater Lowell region had a lower percentage of multi-family units (35.9%) than the State (42.4%), but a higher percentage than the nation (32.5%). The region had a lower percentage of rental units (31.7%) than the state (37.6%) or nation (36.2%). The City of Lowell is the only community in the region with greater than 50% of multi-family units (62.7%) and rental units (57.8%).

Table 18: Projected Growth in Total Households

| Community | 2010 No. of Households | 2020 Projection | 2030 Projection | 2040 Projection | % Change between 2010 |
|--------------|------------------------|-----------------|-----------------|-----------------|-----------------------|
| Billerica | 14,034 | 15,885 | 16,617 | 16,753 | 19.4 |
| Chelmsford | 13,313 | 14,394 | 14,962 | 15,063 | 13.1 |
| Dracut | 10,956 | 12,543 | 13,306 | 13,595 | 24.1 |
| Dunstable | 1,063 | 1,200 | 1,314 | 1,412 | 32.8 |
| Lowell | 38,470 | 41,427 | 42,388 | 42,867 | 11.4 |
| Pepperell | 4,197 | 5,136 | 5,270 | 5,973 | 42.3 |
| Tewksbury | 10,492 | 11,623 | 12,043 | 11,975 | 14.1 |
| Tyngsborough | 3,999 | 5,020 | 5,505 | 5,622 | 40.6 |
| Westford | 7,498 | 9,042 | 9,704 | 9,480 | 26.4 |
| Total | 104,022 | 116,271 | 121,559 | 122,740 | 18.0 |

Source: 2010 U.S. Census and projections developed by the UMass Donahue Institute for MassDOT

Growth in Households

The number of households in the region, which are occupied housing units, has grown consistently since 2000. Similar to the population and employment projections, the UMass Donahue Institute prepared household projections for MassDOT in 2018. These household projections show a growth in regional households from 104,022 in 2010 to 122,749 households in 2040 or by 18%. Household growth in the City of Lowell was limited to 11.4%, but the suburban towns, particularly Pepperell (42.3%), Tyngsborough (40.6%), and Dunstable (32.8%) can expect to see more significant household growth according to the Donahue Institute.

SUMMARY BACKGROUND

MEDIAN HOUSEHOLD INCOME AND HOUSING COSTS

Median Household Income

The median household income for the Greater Lowell region increased by 35.6% between 1999 and 2013-2017 as shown in Table 19. This increase in median household income lagged behind that of Massachusetts, but was more than four times the national increase. Dunstable, Westford, Chelmsford and Tyngsborough had median household incomes greater than \$100,000 in 2013-2017, while the City of Lowell was below \$50,000 at \$48,581. More than 11% of the region's population was below the poverty line in 2013-2017, while nearly a quarter (22.4%) of Lowell's population was below the poverty level.

Table 20: 2013-2017 Housing Costs

| Community | Median Value of Owner-Occupied Units 2013-2017 | Median Gross Rent 2017 |
|---------------|--|------------------------|
| Billerica | \$371,500 | \$1,340 |
| Chelmsford | \$368,500 | \$1,306 |
| Dracut | \$304,800 | \$1,281 |
| Dunstable | \$460,600 | \$1,682 |
| Lowell | \$240,500 | \$1,089 |
| Pepperell | \$326,100 | \$1,118 |
| Tewksbury | \$357,700 | \$1,647 |
| Tyngsborough | \$348,300 | \$1,266 |
| Westford | \$485,600 | \$1,841 |
| Massachusetts | \$352,600 | \$1,173 |
| United States | \$193,500 | \$982 |

Source: U.S. Census Bureau, 2009-2013 and 2013-2017 ACS 5-Year Estimate

Table 19: Median Household Income

| Community | 1999 | 2013-2017 | % Change |
|------------------------------|-----------------|-----------------|-------------|
| Billerica | \$67,799 | \$99,453 | 46.7 |
| Chelmsford | \$70,207 | \$106,432 | 51.6 |
| Dracut | \$57,676 | \$86,697 | 50.3 |
| Dunstable | \$86,633 | \$138,700 | 60.1 |
| Lowell | \$39,192 | \$48,581 | 24.0 |
| Pepperell | \$65,163 | \$90,029 | 38.2 |
| Tewksbury | \$68,800 | \$93,817 | 36.4 |
| Tyngsborough | \$69,818 | \$101,303 | 45.1 |
| Westford | \$98,272 | \$138,006 | 40.4 |
| Greater Lowell Region | \$58,472 | \$79,284 | 35.6 |
| Massachusetts | \$50,502 | \$74,167 | 46.9 |
| United States | \$41,994 | \$57,652 | 37.3 |

Sources: U.S. Census Bureau, 2000 Census and 2013-2017 American Community Survey

Median Housing Costs

Based upon data from the 2013-2017 American Community Survey (ACS), the median value of owner-occupied housing units in the Greater Lowell region ranged from \$240,500 in Lowell to \$485,600 in Westford as shown in Table 20. These median values outpaced the national average (\$193,500), while five of the nine Greater Lowell communities had a higher median value than the State (\$352,600). In terms of median gross rents, every Greater Lowell community had median gross rents greater than the national average of \$982. The median gross rents ranged from \$1,089 in Lowell to \$1,841 in Westford. It is difficult finding affordable rental properties in the Greater Lowell region.

SUMMARY BACKGROUND

LIVING WAGE AND HOUSING COSTS

Table 21: Housing Costs as a Percentage of Income – 2013-2017

| Community | Percent of Households With a Mortgage Paying >30% of Income for Housing | Percent of Rental Households Paying > 30% of Income for Housing |
|---------------|---|---|
| Billerica | 29.7 | 43.4 |
| Chelmsford | 24.8 | 42.8 |
| Dracut | 31.6 | 51.1 |
| Dunstable | 28.3 | 13.2 |
| Lowell | 35.1 | 57.7 |
| Pepperell | 28.4 | 36.7 |
| Tewksbury | 31.5 | 51.3 |
| Tyngsborough | 23.1 | 40.8 |
| Westford | 22.1 | 42.9 |
| Massachusetts | 31.5 | 50.1 |
| United States | 29.5 | 50.6 |

Source: U.S. Census Bureau, 2013-2017 American Community Survey

Living Wage and Housing Costs

In order to afford a two-bedroom rental unit in the Lowell Fair Market Rent Area (FMRA), an annual income of \$60,560 (\$ 29.12 for a single earner) is required, according to the National Low Income Housing Coalition. The FMRA is calculated by the U.S. Department of Housing and Urban Development (HUD), which has set the fair market rent for a two-bedroom unit in the Lowell FMRA at \$1,514. Based on full-time work (2,080 hours per year) and no more than 30% of gross income being spent on housing, an hourly wage of \$29.12 (\$60,560 annually) would be needed to afford a two-bedroom unit in the Greater Lowell region.

Housing Costs as a Percentage of Income

As shown in Table 21, the percentage of households with a mortgage paying greater than 30% for housing is higher in four Greater Lowell communities (Lowell, Dracut, Tewksbury, and Billerica) than it is in the nation. This is largely due to the higher housing ownership cost in the region. Seven of the Greater Lowell communities have rental households paying more than 30% of their income on housing. Only Lowell (57.7%), Tewksbury (51.3%) and Dracut (51.1%) have higher percentages than the State (50.1%) and nation (50.6%). For the most part, the housing burden faced by renters is much higher than that faced by homeowners in the region.

Table 22: Subsidized Housing Inventories (SHI) in the Greater Lowell Region

| Community | SHI Inventory January 2014 | SHI Inventory December 2019 | Percent Change 1/2014 – 12/2019 |
|------------------------------|----------------------------|-----------------------------|---------------------------------|
| Billerica | 857 (5.9%) | 1,178 (8.2%) | 37.5% |
| Chelmsford | 1,064 (7.7%) | 1,340 (9.8%) | 25.9% |
| Dracut | 719 (6.4%) | 590 (5.2%) | -17.9% |
| Dunstable | 0 (0.0%) | 0 (0.0%) | 0.0% |
| Lowell | 5,215 (12.6%) | 5,154 (12.5%) | -1.2% |
| Pepperell | 129 (3.0%) | 130 (3.0%) | 0.8% |
| Tewksbury | 1,030 (9.5%) | 1,052 (9.7%) | 2.1% |
| Tyngsborough | 340 (8.2%) | 436 (10.5%) | 28.2% |
| Westford | 351 (4.6%) | 1,057 (13.8%) | 201.1% |
| Greater Lowell region | 9,705 (8.9%) | 10,937 (10.0%) | 12.7% |

Source: Department of Housing and Community Development SHI reports for January 2014 and December 2019

Subsidized Housing

Communities in Massachusetts must comply with Chapter 40B in meeting their commitment of 10% of their year-round housing stock as affordable. As of December 2019, the Greater Lowell area surpassed the 10% affordable housing goals as shown in Table 22. Between January 2014 and December 2019, the number of affordable housing units increased by 12.7%. Lowell, Westford and Tyngsborough are currently above the 10% goal.

SWOT ANALYSIS

SWOT SESSION RESULTS

In developing the SWOT Analysis section of the CEDS, the NMCOG staff pulled together information from the three CEDS SWOT sessions and the CEDS survey that was made available to business owners and residents. The CEDS SWOT sessions were held at Lowell City Hall on November 21, 2019, the Tewksbury Public Library on January 21, 2020 and the Chelmsford Police Department Public Meeting Room on February 4, 2020. The CEDS Survey was issued on January 15, 2020 and remained open until February 20, 2020, and received 132 responses. In addition, issues and priorities identified by municipal plans and planning processes were also analyzed, including a local economic development SWOT session at the Westford Business Forum on November 7, 2019.

SWOT Session Results: The prioritized Strengths, Weaknesses, Opportunities and Threats identified at the SWOT Sessions are below:

Strengths:

Quality of life, including diverse cultural assets, restaurants, open space and recreation, and historic assets;
Educated workforce;
Entrepreneurial spirit and pro-business attitude;
Proximity to highways;
Proximity to Boston;
Affordable commercial space;
Variety of housing options;
High quality healthcare;
UMass Lowell and quality K-12 education;
Green energy opportunities;
Presence of STEM clusters; and
Regional cooperation and organizations.

Opportunities:

Business recruitment, including attraction of diverse industries and expansion of business incubators;

Weaknesses:

Traffic;
Lack of affordable housing and resistance to new housing;
Regional and intercommunity competition and proximity to tax-free New Hampshire;
Cost of doing business, including rent, taxes and energy;
Limited regional transit and coordination with other services;
Aging infrastructure and lack of sewer in some communities;
Aging workforce;
Cumbersome permitting process;
High cost of living;
Lack of developable land;
Lack of regional identity and safety issues in some areas;
Lack of vocational training;
Opioid crisis;
Lack of amenities to attract workforce; and
Lack of retail/high-end restaurants.

Threats:

Cost of housing, lack of housing opportunities, and resistance to housing construction;

SWOT ANALYSIS

CEDS SURVEY RESULTS

Opportunities (cont.):

Diversify housing stock for older and younger owners;
Rezone to allow affordable housing, including converting single-family homes to multi-family;
Attract and expand STEM clusters, including biotech and robotics;
Utilize business incubators, integrate UMass Lowell R & D and attract cluster expansion from the Boston area;
Link vocational education to job market and fully integrate Middlesex Community College into workforce development system;
Regional strategy, visioning and marketing;
Redevelopment of vacant buildings, including a focus on the Hamilton Canal District, and improve the appeal of commercial areas;
Infrastructure improvements, traffic mitigation and improved transit and business shuttle options;
Regionalize resources; and
Expand and capitalize on cultural and arts assets.

Threats (cont.):

Aging infrastructure and cost of energy;
Higher taxes;
Climate change and other environmental threats;
Aging workforce;
Increased traffic and poor transit service;
Underemployment and poverty;
Costs and regulations in Massachusetts;
Cost of education and college debt;
Increase in cost of living;
Competition from other areas, including New Hampshire;
Lack of retirement resources and social safety net;
Lack of developable land;
Economic downturn and decline in tax revenues;
Lack of affordable childcare; and
Lack of community involvement.

CEDS Survey Results:

Benefits:

Interstate Highway Access;
Quality of Life;
Quality of Local Schools;
Availability of Space/Property;
Availability of Qualified Employees;
Community Image;
Industry Clusters; and
Proximity to Boston.

Challenges:

Cost of rent/real estate;
Traffic;
Taxes;
Lack of public transit;
Access to capital;
Community image;
Lack of business development programs; and
Energy costs.

SWOT ANALYSIS

CEDS SWOT SUMMARY

Based on the input from the CEDS SWOT sessions and the CEDS survey and staff analysis, the responses to be addressed fell within the following six priority areas:

Community and Quality of Life - The region's high quality of life, diverse cultural assets and extensive outdoor recreational opportunities were all identified as significant strengths in the SWOT analysis. However, there is a lack of a regional identity or marketable brand for the region. Focusing on branding the region will attract private sector investment and the relocation of businesses to the region.

Economic Development - The presence of science and technology clusters and affordable commercial space, especially relative to the Greater Boston region, are principal strengths of the Greater Lowell region. Yet, the cost of doing business relative to the rest of the country, perceived cumbersome permitting and regulations, and the lack of developable land served by water and sewer were all identified as issues.

Housing - The region enjoys a variety of housing options and relatively low prices compared to Greater Boston, although housing costs are burdensome (> 30%) to many families. More than 10% of the region's year-round housing units are affordable, while most communities are focused on developing more market-rate and affordable housing to meet the needs of expanding businesses. Resistance to new housing construction provides a challenge to meeting the State's housing production goal of 135,000 new housing units by 2025.

Infrastructure - Aging infrastructure, high energy costs and limited water and sewer access were key issues identified through the SWOT analysis. Infrastructure improvements that support commercial, industrial and residential development help to grow the economy. The focus on "green energy" initiatives broaden the employment base in the region and have environmentally beneficial results.

Transportation - The region's highway system is a significant asset for economic development and most of the region's largest employers are located with easy access to these highways. Yet, traffic congestion on local and state roads, as well as highways, costs state and municipal governments and private employers lost productivity from their employees. Furthermore, public transit options within the region are limited and are not well connected to transit systems outside of the region. Investments in highway and transit improvements are an essential element to a growing economy.

Workforce Development and Employment Support - The region's highly educated workforce and the active participation by UMass Lowell and Middlesex Community College offer real incentives for relocated or expanding businesses. The MassHire Greater Lowell Workforce Board and MassHire Lowell Career Center offer targeted programs for business clusters and unemployed and underemployed workers. The region faces challenges in terms of an aging workforce, limited affordable childcare and a mismatch between the skills required by industry and what's available in the workforce.

SWOT ANALYSIS

SWOT PRIORITY AREAS

| PRIORITY AREA | STRENGTHS | WEAKNESSES | OPPORTUNITIES | THREATS |
|--|--|---|---|---|
| Community & Quality of Life | <ul style="list-style-type: none"> • Quality of life, including open space, recreation and historic assets • Diverse cultural assets • Good restaurants • Strong regional cooperation, regional organizations and non-profits • Proximity to Boston | <ul style="list-style-type: none"> • High cost of living • Lack of regional identity • Opioid crisis and perceived safety issues in some areas • Lack of amenities to attract workforce • Lack of retail and high-end restaurants | <ul style="list-style-type: none"> • Regional strategy, vision and marketing • Expand and capitalize on culture and arts assets | <ul style="list-style-type: none"> • Underemployment and poverty • Increase in cost of living • Lack of community involvement • Climate change and other environmental threats |
| Economic Development | <ul style="list-style-type: none"> • Affordable commercial space • Presence of science and technology clusters • Entrepreneurial spirit and pro-business attitude | <ul style="list-style-type: none"> • Cost of doing-business, including rent, taxes and energy • Permitting process is cumbersome • Lack of developable land • Regional competition and competition between towns • Proximity to tax-free New Hampshire | <ul style="list-style-type: none"> • Business recruitment, including attraction of diverse industries and expansion of business incubators • Attract and expand science and technology clusters, including biotech and robotics industry • Utilize business incubators, integrate UMass Lowell R&D, and support science and tech expansion from the Boston area • Redevelopment of vacant buildings, including a focus on the Hamilton Canal District, and improve appeal of commercial areas | <ul style="list-style-type: none"> • Higher taxes • Costs and regulations in Massachusetts • Economic downturn • Competition from other communities, including tax free New Hampshire |

(continued)

SWOT ANALYSIS

SWOT PRIORITY AREAS (continued)

| PRIORITY AREA | STRENGTHS | WEAKNESSES | OPPORTUNITIES | THREATS |
|---|--|--|--|---|
| Housing | <ul style="list-style-type: none"> Variety of housing options | <ul style="list-style-type: none"> Lack of affordable housing Resistance to new housing construction | <ul style="list-style-type: none"> Diversify housing stock for older and younger owners Rezone to allow affordable housing, including converting single family homes to multi-family | <ul style="list-style-type: none"> Cost of housing and lack of housing opportunities Resistance to new housing construction |
| Infrastructure | <ul style="list-style-type: none"> Green energy opportunities | <ul style="list-style-type: none"> Aging infrastructure Lack of sewer in some communities | <ul style="list-style-type: none"> Infrastructure improvements Regionalize resources | <ul style="list-style-type: none"> Aging infrastructure Cost of energy Decline in tax revenues |
| Transportation | <ul style="list-style-type: none"> Proximity to highways | <ul style="list-style-type: none"> Traffic Limited regional transit Lack of coordination with other regional transit services | <ul style="list-style-type: none"> Traffic mitigation Improve transit and business shuttle options | <ul style="list-style-type: none"> Increased traffic Poor transit service |
| Workforce Development & Employment Support | <ul style="list-style-type: none"> UMass Lowell and Middlesex Community College High quality K-12 education (some municipalities) High quality healthcare Educated workforce | <ul style="list-style-type: none"> Lack of vocational training Aging workforce | <ul style="list-style-type: none"> Link vocational education to job market, integrate Middlesex Community college into workforce development | <ul style="list-style-type: none"> Cost of education College debt Lack of social safety net Lack of affordable childcare Aging workforce Lack of retirement resources |

STRATEGIC DIRECTION AND ACTION PLAN

INTRODUCTION

The Strategic Direction and Action Plan has been developed in accordance with the EDA guidance. This section builds upon the results of the CEDS SWOT sessions, the CEDS Survey and the data in the Summary Background section. EDA focuses attention on the economic resiliency issues, which is quite relevant at this point in history. The resiliency issues facing our region are used in the overall framework for specific goals derived through the SWOT Analysis section. Economic resilience is the ability to avoid, withstand, and recover from shocks, such as natural disasters, the impacts of climate change, a pandemic, and economic shifts. These economic shifts include the closure of a large employer, changes in market conditions that impact the demand for certain goods and services, or the temporary closure of large portions of the economy from a natural disaster or pandemic. For a region to be economically resilient, it must have the ability to recover quickly from a shock, the ability to withstand a shock, and the ability to avoid the shock altogether. EDA guidance suggests that the regional CEDS document incorporate “steady-state” and “responsive” initiatives to promote resilience. In addition to the six focus areas, this section will provide information on those projects completed since the *Greater Lowell CEDS Update for 2010-2013* and the projects from that document that are continuing, along with the new projects that have been identified through this CEDS planning process.

Outlined below are the Vision Statement and Goals for this section:

Vision Statement: The Vision for the Greater Lowell region is to build upon the region’s historic past 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; and
- An inclusive and racially diverse workforce that encourages economic success.
- 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.

Goals: Based on input from the three regional SWOT sessions, guidance from the Greater Lowell CEDS Committee, and analysis of issues and opportunities identified in local and regional plans, the priorities to be addressed fall within seven distinct areas: Economic Resiliency, Economic Development, Workforce Development and Employment Support, Infrastructure, Transportation, Housing and Quality of Life. These priority areas provide the foundation for the development of the CEDS goals.

STRATEGIC DIRECTION AND ACTION PLAN

GOALS

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.

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.

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. – to overcome barriers to employment.

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.

Goal 5. Transportation: Develop the transportation infrastructure to ensure that the Transportation Network supports economic development needs and accommodates future economic growth and addresses evolving mobility technology, which is trending toward driverless cars, ride sharing, telecommuting and electrification.

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.

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 economic growth.

STRATEGIC DIRECTION AND ACTION PLAN

CORONAVIRUS (COVID - 19)

The social and economic fabric of our country has been upended as a result of the coronavirus disease. COVID-19 spread from Wuhan, China in December 2019 to Asia then to Europe and has now arrived in the United States. In order to contain the spread of this disease, the federal government established a Task Force to create national policies to address this issue. State and local governments have established specific emergency measures to control the spread of the disease – stay in place measures, the closure of non-essential businesses, work from home policies, and limiting access to hospitals and elderly facilities. These measures have resulted in laying off many service industry employees, particularly in the restaurant, retail, personal services and hospitality industries. The closing of sports activities, museums, theatres, cinemas and other recreational industries has forced workers to be laid off as well. Schools and churches have closed and local government offices are now closed to the public. Even the health care industry has been impacted with 30% layoffs at Circle Health and the Lowell Community Health Center, which impacts property owners and suppliers. As testing becomes more available, the number of individuals affected by the coronavirus has increased dramatically, while the number of deaths attributed to the disease is growing exponentially. While President Trump stated that this will continue until July or August, other studies within the U.S. Department of Health and Human Services suggest that it could last for up to 18 months. Congress has passed three pieces of legislation to address the shortage of test kits and medical equipment and to provide relief to businesses and families directly. On March 27th the \$2.2 trillion Coronavirus Aid, Relief, and Economic Security (CARES) Act was signed into law. This legislation provides for \$1.5 billion through EDA over a two and a half year period for economic recovery. There may be a need for a fourth economic relief package by the end of April when Congress returns.

The information within the Summary Background section is based upon the data available as of late 2019 and early 2020. Limited data related to the coronavirus pandemic is yet available, although data released in late March and early April, 2020 shows that the number of unemployed and underemployed workers has begun to skyrocket. During the week of March 23rd, 3.3 million Americans applied for unemployment insurance, raising the national unemployment rate to 5.5%. Between March 15th and 21st 2020, 147,995 unemployment claims were filed in the Greater Lowell region, compared to 17,000 in February 2020. The President approved a federal disaster declaration for the Commonwealth of Massachusetts on March 18th. Small businesses and private non-profits are eligible to apply for Economic Injury Disaster Loans (EIDL) from the U.S. Small Business Administration (SBA). The specific action steps outlined in the Strategic Direction and Action Plan are based on the assumption that the pandemic could last for another 6-12 months and that the unemployment rate in our region could reach 20% by the end of this year.

STRATEGIC DIRECTION AND ACTION PLAN

ECONOMIC RESILIENCY

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 capacity and ability to respond to recovery needs following an incident.

Objective 1. Implement steady-state resiliency initiatives to bolster the region's ability to withstand or avoid a shock.

- Initiate regional comprehensive planning with broad involvement from the community that will lead to a vision for resilience, and align with other regional and local planning efforts, such as the regional transportation plan, hazard mitigation plans, community master plans, economic development strategies, housing production plans, municipal vulnerability plans, climate action plans and other relevant resources.
- Diversify the skills of the regional workforce through job training and educational opportunities offered through the MassHire Greater Lowell Workforce Board (MHGLWB), MassHire Lowell Career Center, Middlesex Community College, UMass Lowell, UTEC, CBA and other entities.
- Pursue economic development opportunities that build upon existing and emerging industry clusters, including life sciences, health care, computer/electronic technology and innovation, biotech, advanced manufacturing, and renewable energy.
- Work with MHGLWB, the MassHire Lowell Career Center and Middlesex Community College to assist and retrain workers during periods of economic downturn, so that workforce skills are transferrable from one industry to another.
- Diversify the workforce through increased inclusion of minority residents, which will help innovate the economy and enable businesses to return to full operation.
- Attract and grow small businesses throughout the region through entrepreneurial programs offered by EforAll and the Lowell Development and Financial Corporation (LDFC).
- Support business incubators and accelerators focused on targeted industries.
- Continue to work with the Office of Technical Assistance (OTA) and the Toxics Use Reduction Institute (TURI) to provide confidential and free assistance to local industries in reducing the use of toxics and understanding their vulnerabilities to climate change and natural hazards.
- Identify and implement adaptation measures to protect critical infrastructure, businesses and major employment sites from the effects of climate change, such as flooding, severe storms, extreme temperatures and power outages.

STRATEGIC DIRECTION AND ACTION PLAN

ECONOMIC RESILIENCY (cont.)

- Improve stormwater management by working with the Northern Middlesex Stormwater Collaborative (NMSC) communities on compliance with the EPA MS4 permit and implementation of the required six minimum control measures.
- Promote the use of renewable energy as a means of reducing greenhouse gas generation, addressing climate change, and reducing energy costs.
- Address the economic recovery needs of the region resulting from the pandemic through the approved CEDS document.
- Work with National Grid and other utilities to improve the reliability of the electric power grid and to protect the generation and distribution systems from the impacts of climate change and natural hazards.

Objective 2. Implement responsive resiliency initiatives to enhance the region's capacity and ability to respond to recovery needs following an incident.

- Establish a process for regular communication and monitoring of business community issues – both pre- and post-disaster.
- Work with the Regional Emergency Planning Committees (REPCs) to support multi-jurisdictional cooperation in the provision of critical resources during an emergency and throughout the recovery phase.
- Provide communities with information concerning resources and funding opportunities for emergency response and disaster recovery through the COVID-19 Economic Development Recovery Task Force.
- Ensure that local Comprehensive Emergency Management Plans and Hazard Mitigation Plans address the concerns and needs of local businesses and industries.
- Monitor and update hazard mitigation projects to reflect revised FEMA floodplain mapping.
- Educate local businesses on the need to have an up-to-date Continuity of Operations (COOP) plan.
- Review the economic development initiatives designed to enhance economic recovery from the pandemic and update the region's economic recovery plan.
- Increase communication among the CEDS Committee partners to coordinate efforts to address unemployment, small business needs and the overall regional economy impacted by the pandemic or other natural disaster.

STRATEGIC DIRECTION AND ACTION PLAN

ECONOMIC DEVELOPMENT

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.

Objective 1. Restore the regional and local economies devastated by the COVID-19 pandemic.

- Apply for planning and public works funds under the CARES Act \$1.5 billion NOFA from the Economic Development Administration
- Work with the Greater Lowell CEDS Committee members to provide direct assistance to municipalities, small businesses and nonprofit organizations.
- Support requests for business loans from the State's \$10 million fund and SBA's Economic Injury Disaster Loan (EIDL) program.
- Identify infrastructure improvements in the region that could be addressed by the CARES Act or another legislative relief package.
- Apply for EDA planning funds to develop the Annual CEDS Update to incorporate up-to-date economic data on the COVID-19 pandemic.

Objective 2. Utilize the Greater Lowell CEDS Committee to implement the Five-Year CEDS document and address economic recovery issues.

- Schedule quarterly meetings for the CEDS Committee to implement the CEDS document and address economic recovery issues.
- Identify the needs of the small business community working with the Chambers of Commerce in the region, the Economic Development Committees, the Middlesex 3 Coalition, MHGLWB, CTI's Small Business Assistance Center, the Lowell Plan/LDFC, MassDevelopment, EOHED and MOBD.
- Formulate an economic development recovery action plan to address the needs of municipalities, small businesses and nonprofits.
- Submit the Annual CEDS Update to address the economic and employment changes that have taken place since March 2020.
- Submit the Economic Development District (EDD) application for the Northern Middlesex Economic Development District, Inc. to EDA and examine opportunities available under a Revolving Loan Fund (RLF) program to be approved by EDA.

Objective 3. Focus on the science and technology clusters related to health care, biotech and advanced manufacturing.

- Work with UMass Lowell, Middlesex Community College and MHGLWB to promote STEM industries and develop a STEM database.
- Develop a regional marketing campaign to promote the area's business clusters, competitive real estate prices, and skilled labor force.
- Focus business recruitment efforts on enterprises that are likely to provide higher skill, higher wage jobs.
- Support LDFC's new incubator loan fund to retain businesses emerging from UML's Innovation Hub and M2D2 in Lowell.
- Market the region's science and technology clusters to Greater Boston venture capital investors.

STRATEGIC DIRECTION AND ACTION PLAN

ECONOMIC DEVELOPMENT (cont.)

Objective 4. Secure economic development funding to support regional economic development projects.

- Apply for federal and state funding, such as brownfields redevelopment funding, New Market Tax Credits and EDA's Seed Fund Support Grant, which can be targeted to priority projects and initiatives.
- Identify funding for the Working Cities Lowell program to support the Jeanne D'Arc business lending program and other initiatives to create jobs for low-income and minority residents and address barriers to their active participation in government.
- Support the collaboration of the LDFC, Working Cities Lowell, Mill City Grows, the Merrimack Valley Food Bank and EforAll to identify funding from the Massachusetts Food Trust Program to develop the Merrimack Valley Food HUB.
- Promote the City's Opportunity Zones program to attract private investment by utilizing Smart Growth America's new National Opportunity Zones Marketplace resource.

Objective 5. Redevelop vacant and underutilized buildings for industrial, commercial, and/or residential uses.

- Work with communities to collect and map site data for available industrial, commercial and multifamily residential properties.
- Provide support to communities in streamlining permitting for the redevelopment of vacant and underutilized sites.
- Support the City of Lowell in its implementation of redevelopment efforts related to the Hamilton Canal Innovation District and the Ayer's City Industrial Park projects.

Objective 6. Attract and grow small businesses throughout the region.

- Work with small business service providers to ensure that high quality small business development assistance is affordable and accessible.
- Establish a primary point of contact or web-based portal to direct entrepreneurs to appropriate assistance providers, such as EforAll, LDFC, CTI's Entrepreneurship Center and The Entrepreneurship Center and The Launch at Middlesex Community College.
- Building on the successful model of the New Vestures co-work space in Lowell, investigate the viability of an additional food-based maker space or shared community kitchen in the region.
- Expand the venture fund providing seed money to MCC students to launch or grow community-based businesses.

STRATEGIC DIRECTION AND ACTION PLAN

WORKFORCE DEVELOPMENT AND EMPLOYMENT SUPPORT

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.

Objective 1. Integrate the education and workforce development systems to support business expansion in the region.

- Encourage stronger ties between the primary and secondary school systems and UMass Lowell (UML) and Middlesex Community College (MCC) so that high school students are prepared for the working world. Support students from the technical high schools and utilize these facilities at night for adult learning.
- Strengthen coordination between the MHGLWB, MassHire Lowell Career Center, UML, MCC and the private sector to educate the region's workforce and develop the skilled workers needed by industry.
- Support the development of certificate programs at UML and MCC that meet regional industry current and future needs.
- Identify funding sources at the federal and state levels that will support workforce development initiatives in the region.

Objective 2. Focus education and workforce development programs on the STEM industries.

- Implement the MHGLWB 2018-2021 Strategic Plan, particularly in the areas of Advanced Manufacturing, Healthcare and Social Assistance and Professional, Technical and Scientific (IT) sectors.
- Utilize the UML facilities – Emerging Technologies and Innovation Center, Health and Social Sciences Building and Innovation Hub – to train UML students for the targeted growth industries.
- Build upon the programs established by MCC – a learn-and-earn biotechnology program, a dental training program, and a robust nursing and radiology program.

Objective 3. Address traditional barriers faced by students in attending education and workforce development programs.

- Increase the availability of quality, affordable childcare and transportation.
- Provide tuition assistance to encourage students to complete their higher education.
- Support diversity in the workforce by encouraging minority and low-income residents to participate in these programs and provide employment placement upon completion.
- Provide young adults with up-to-date data on current and long-term employment opportunities.
- Focus on creating career ladders, especially in emerging industries, and establish life-long learning habits.

STRATEGIC DIRECTION AND ACTION PLAN

INFRASTRUCTURE

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.

Objective 1. Target infrastructure improvements to those areas prioritized for industrial, commercial or residential growth.

- Increase water and sewer capacity to address the projected growth in businesses and households.
- Utilize EDA Public Works, MassWorks, SRF or Housing Choice Capital grants in conjunction with local bonding to expand water and sewer infrastructure.
- Improve the telecommunications network to enhance access to global networks and to address gaps in broadband availability.
- Provide utility options to local communities and residents, particularly related to cable or internet service.
- Improve stormwater management by working with the Northern Middlesex Stormwater Collaborative (NMSC) communities on compliance with the EPA MS4 permit and implementation of the required six minimum control measures.

Objective 2. Support clean energy generation and research in order to stabilize energy costs and reduce environmental impacts.

- Implement the recommendations of the *Siting of Renewable Energy Facilities* report funded by EDA.
- Encourage the use of electric aggregation to reduce the cost of energy to businesses, municipalities and homeowners.
- Promote the use of renewable energy as a means of reducing greenhouse gas generation, addressing climate change, and reducing energy costs.
- Provide information to residents and businesses on federal and state grants and tax credits for the installation of renewable energy and energy efficiency improvements.
- Encourage local communities to install solar on municipal buildings and properties, to purchase electric vehicles and to install electric vehicle charging stations through the Green Communities program and grants from the Massachusetts Clean Energy Center (MCEC).
- Through the Affordable Access to Regional Coordination (AARC) grant program, work with owners and developers of affordable housing to install energy efficiency and renewable energy improvements.

STRATEGIC DIRECTION AND ACTION PLAN

INFRASTRUCTURE (cont.)

Objective 3. Install, upgrade and maintain infrastructure capable of withstanding natural disasters affecting the region.

- Develop Hazard Mitigation Plans in conjunction with the community's Municipal Vulnerability Preparedness program.
- Identify and implement adaptation measures to protect critical infrastructure from the effects of climate change, such as flooding, severe storms, extreme temperatures and power outages.
- Work with National Grid and other utilities to improve the reliability of the electric power grid and to protect the generation and distribution systems from the impacts of climate change and natural hazards.
- Provide alternative drinking water supplies for local communities in the event of contamination from natural hazards.
- Develop a regional hazard mitigation strategy that considers area businesses and protects the economic vitality of the region.
- Monitor and update hazard mitigation projects to reflect revised FEMA floodplain mapping.

STRATEGIC DIRECTION AND ACTION PLAN

TRANSPORTATION

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.

Objective 1: Invest in the regional highway system to enhance access to municipal and employment centers.

- Implement regional transportation projects, such as the Rourke Bridge replacement, Phase III of the Middlesex Turnpike, Lowell's Canal Bridges, the Lord Overpass/Thorndike Street improvement project, Route 38 resurfacing and improvement in Tewksbury, Route 3A in Billerica, and Route 113 reconstruction in Dunstable and Pepperell.
- Implement the Transportation Improvement Program (TIP) to address priority transportation projects.
- Coordinate economic development and transportation initiatives to strengthen the regional economy.
- Alleviate highway bottlenecks and improve the performance of existing transportation facilities to reduce congestion and improve safety. Expand parking capacity at the Tyngsborough Park & Ride lot and North Billerica commuter rail station to reduce congestion.
- Maintain I-495, I-93 and Route 3 to handle increased freight transportation into and out of the region.

Objective 2: Expand the transit network to provide improved connection from residences to employment centers inside and outside the region.

- Utilize the Lowell Regional Transit Authority (LRTA) system to connect residents to jobs and services in the Greater Lowell region.
- Access the commuter rail system in Lowell and North Billerica through the LRTA system to take advantage of employment opportunities in Boston.
- Expand transit service to better serve suburban employment centers in Chelmsford, Dracut, Pepperell, Tyngsborough and Westford.
- Use the LRTA system to connect multi-family and affordable housing with employment, health care and educational opportunities.
- Support business shuttle services, such as CrossTown Connect, the Middlesex 3 TMA and Restaurant Express, and the Littleton Westford Commuter Rail Shuttle, to transport workers from their homes to companies in the Greater Lowell region.
- Improve transit options through evening and weekend service where appropriate.
- Work with the State of New Hampshire to extend the commuter rail system to Nashua, Manchester and Concord, New Hampshire and develop the Vinal Square commuter station.

STRATEGIC DIRECTION AND ACTION PLAN

TRANSPORTATION (cont.)

Objective 3: Reduce automobile-related environmental impacts, such as greenhouse gas emissions, through other transportation modes.

- Promote policies to increase bicycle and pedestrian infrastructure to encourage these modes of travel.
- Invest in the Bruce Freeman Rail Trail extension of downtown Lowell via the River Meadow Brook trail, the Yankee Doodle Bike Path and other new pedestrian/bike trails in Greater Lowell
- Implement the Northern Middlesex Metropolitan Planning Organization (MPO) TIP projects designed to reduce greenhouse gas emissions.
- Examine downtown Lowell intersections to plan upgrades and provide safer bicycle and pedestrian options.
- Promote the use of electric cars through the installation of additional charging stations throughout the region.

STRATEGIC DIRECTION AND ACTION PLAN

HOUSING

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.

Objective 1: Encourage the development of market-rate housing to support the State’s goal of 135,000 new housing units by 2025.

- Support the participation of local communities in the Housing Choice Initiative and designation as Housing Choice communities.
- Encourage Housing Choice communities to apply for Housing Choice Capital grants to upgrade their overall infrastructure.
- Promote streamline permitting processes and design guidelines to encourage development that meets the needs of local communities.
- Match the housing needs of expanding and relocating businesses to encourage investments in our local communities.

Objective 2: Support the development of affordable housing, including options for low and moderate-income residents.

- Develop Housing Production Plans (HPPs) and incorporate these recommendations into updated community Master Plans.
- Support municipalities in developing an Inclusionary Housing Bylaw through resources provided by the MassHousing Partnership.
- Support the City’s homeless plan and address the needs of the at risk homeless population.
- Identify and address infrastructure barriers to residential development through Housing Choice Capital and MassWorks grants.
- Support the development of diverse rental units, in terms of types of units (duplexes vs. multi-family) and number of bedrooms.
- Work with non-profit entities, such as Coalition for a Better Acre (CBA) and Common Ground, to develop affordable housing projects.
- Research and promote Foreclosure Assistance Programs through the State’s Emergency Homeowners Loan Program (EHL) or Community Teamwork, Inc. to help homeowners avoid foreclosure and maintain strong residential neighborhoods.

Objective 3: Establish housing development capacity at the local level to create more market-rate and affordable housing.

- Create Affordable Housing Committees and Affordable Housing Trusts to oversee the HPP and finance affordable housing.
- Encourage communities to use CPA funds for community education, first-time home buyer’s assistance, rental assistance, renovation, sale, and purchase of affordable housing units, and partnerships with private and non-profit developers to create affordable housing.
- Develop partnerships with private and non-profit developers and public agencies to address the housing needs of the community.
- Apply for Community Development Block Grants (CDBG) at the state level to rehab local housing stock.
- Work with the Lowell Development and Financial Corporation (LDFC), the Merrimack Valley Housing Partnership (MVHP), and local financial institutions to promote and support home ownership.
- Identify tax title properties and vacant parcels as potential development sites through the HPP.

STRATEGIC DIRECTION AND ACTION PLAN

COMMUNITY AND QUALITY OF LIFE

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.

Objective 1. Maintain the region's quality of life by protecting natural, cultural and historic resources and expanding recreational assets.

- Implement the recommendations in the Natural and Cultural Resources and Open Space and Recreation sections of the Master Plans and Open Space and Recreation Plans adopted by communities across the region.
- Work with Dracut to update the Open Space and Recreation Plan.
- Utilize the Community Preservation Act (CPA) to implement open space, recreation, and historic preservation projects.
- Develop walking and bike trails, boat launches, and other public recreation opportunities throughout the region.
- Support initiatives by the Lowell National Historical Park (LNHP), local land trusts and other organizations to maintain and improve access to open spaces along the Merrimack, Nashua, Nissitissit, Shawsheen and Concord Rivers.

Objective 2: Support the creative economy in the Merrimack Valley by celebrating the region's unique cultural assets.

- Develop affordable housing for artists in downtown Lowell.
- Partner with local organizations to support different venues for artists in the region, such as Chelmsford's Center for the Arts and Fourth of July Art Festival, Westford's Parish Center for the Arts, and Lowell's Brush Art Gallery, Western Avenue Studios, Arts League of Lowell, Whistler House Art Gallery, and Merrimack Repertory Theatre.
- Collaborate with the owners of vacant space, local artists and arts organizations to identify opportunities for pop-up retail, temporary art installations, events, or other uses that support the area's vibrancy.
- Work with local organizations and business associations to introduce more event programming.
- Partner with local municipalities and organizations to support pop-up retail and events in vacant spaces in the region's commercial centers.
- Support streetscape improvements in the region's commercial areas that contribute to their vibrancy and safety, including bicycle lanes, street plantings and street furniture. If feasible, artfully designed bicycle racks, aesthetic treatments for crosswalks, decorative bus stops and the installation of period street lighting would add to commercial areas' vibrancy and welcoming aesthetic.

Objective 3: Celebrate the ethnic diversity in the City of Lowell as reflected in its restaurants and retail businesses.

- Utilize funding from the Barr Foundation to develop a new Cultural Economy Plan for Lowell.
- Develop a regional marketing campaign and work with communities to create local marketing and branding plans.
- Capitalize on Lowell's status as a Gateway City by supporting its restaurants and retail enterprises.
- Create a pedestrian linkage from the Canalway Cultural District to the Western Avenue Studios.
- Market the diversity and authenticity of Lowell's restaurants and neighborhoods.
- Develop branding and signage that reflects the ethnic diversity of Lowell's neighborhoods, such as been done in *Little Cambodia*.

STRATEGIC DIRECTION AND ACTION PLAN

COMPLETED CEDS PRIORITY PROJECTS

Within the *Greater Lowell Comprehensive Economic Development Strategy (CEDS) Update for 2010-2013*, the Greater Lowell CEDS Committee identified short-term, intermediate and long-term development projects based upon the 2013 EDA Investment Priorities and the specific CEDS goals. A full listing and description of the completed projects over the last few years is provided in the Appendix. Highlighted below are some of these priority development projects:

| | | |
|---------------------------------|---|---|
| Hamilton Crossing Mill 2 and 6 | Siting of Renewable Energy Facilities report* | Dracut Town Hall and High School |
| Billerica Sewer Plant Upgrade | 43 Katrina Road in Chelmsford | EDA Planning Grant* |
| Bruce Freeman Rail Trail | Dracut Sewer Projects (30,31,32) | Rourke Bridge Feasibility Study |
| Dunstable Route 113 | Lowell Downtown Improvements | Tewksbury Master Plan |
| Tyngsborough Old Town Hall | Minot's Corner Route 110, Westford | Red Pine Terrace Affordable Housing, Tyngsborough |
| Boston Affordable Housing Dev. | University Avenue Bridge | Tewksbury Water Treatment Facility |
| LRTA Operating Assistance | LRTA Capital and Planning Assistance | Dunstable Water Line Upgrade, MUD District |
| Gallagher Terminal | Arlington St. Dracut | Pawtucket Canal Bridge, Lowell* |
| East Street, Tewksbury | Princeton Westford Apartments | Tyngsborough Sewer Expansion |
| Stonybrook Housing II, Westford | Tyngsborough Senior Center | Allen Road, Billerica |
| Central Fire Station, Westford | Route 110/Tadmuck Road, Westford | Route 40 at Oak Hill, Westford |
| Route 38 Resurfacing, Tewksbury | Lowell Connector Improvements | UMass Lowell – West Campus |
| LRTA Transit buses | Gallagher Terminal Upgrades | Greater Lowell Ex-Offender Re-entry partnership |
| Main Street Bridge Replacement | Safe and Successful Youth Initiative | Interstate 495 Improvements |

*Funded by the Economic Development Administration (EDA)

STRATEGIC DIRECTION AND ACTION PLAN

CONTINUING AND NEW CEDS PRIORITY PROJECTS

Within the *Greater Lowell Comprehensive Economic Development Strategy (CEDS) Update for 2010-2013*, the Greater Lowell CEDS Committee identified short-term, intermediate and long-term development projects based upon the 2013 EDA Investment Priorities and the specific CEDS goals. A full listing and description of the continuing projects from the *2010-2013 CEDS Update* and new projects is provided in the Appendix. Outlined below are some of these priority development projects:

Continuing

| | | |
|-----------------------------------|---|---|
| Lowell JAM Plan | Lowell Hamilton Canal Innovation District | Lowell Tanner Street Initiative (Ayer's City) |
| EDD Designation* | Billerica Sewer Line Extension | Pepperell Paper Mill |
| MHGLWB Connecting Activities | MHGLWB Workforce Training | Upper Merrimack Street Traffic Calming |
| Dracut Navy Yard Mill Development | Lowell Neighborhood Business Improvements | Lowell CSO Project |
| 970 Broadway Ind. Redev., Dracut | 12 North Main Street, Westford | Riverside Senior Affordable Housing |
| VFW Highway Bridge, Lowell | Lowell Route 38 improvements | Middlesex Turnpike – Phase 3 – Billerica |
| Route 4 Bridge over I-495 | Route 40 at Dunstable Road, Westford | Tyngsborough Sewer Expansion, Phase II |
| Tyngsborough Town Center | North Chelmsford Commuter Rail Station | Commuter Rail Extension to Concord, NH |
| Route 113 and River Road | Former Pepperell Paper Mill site | LRTA Operating and Capital Assistance |
| LRTA Planning Assistance | Rehab Intermodal Hub | Pawtucket Falls Overlook Trail, Lowell |
| Nashua Road, Dracut | Yankee Doodle Bike Path, Billerica | Lord Overpass/Thorndike Street, Lowell |

New

| | | |
|------------------------------------|--|--|
| Vinal Square Revitalization | Center Village Revitalization | Chelmsford Rte. 3 Highway Interchange |
| Dracut Veteran and Elderly Housing | GoLowell Implementation | Chelmsford Wastewater Study |
| Tanner Street Realignment | Peter Fitzpatrick School, Pepperell | Town Beach and Playground, Tyngsborough |
| ADA and Trail Improvements | Tyngsborough Dam Restoration | Old Town Hall parking lot, Tyngsborough |
| Tewksbury Elementary School | Tewksbury Central Fire Station | DPW/School Maintenance Facility, Tewksbury |
| Stormwater Improvement Plan | Glad Valley/Lexington Road, Billerica | Water Distribution System, Tewksbury |
| Dislocated Worker grant | Route 113, Dunstable | Workforce Inn. & Opp. Act- Adult, Youth, Dis. Worker |
| EDA Econ. Adjust. grant* | Hale/Howard Street improvement, Lowell | CARES Act economic adjustment assistance* |

*Funded by the Economic Development Administration (EDA)

EVALUATION FRAMEWORK

INTRODUCTION

As outlined in previous CEDS documents, the most critical aspect of any plan is the evaluation component, or in this case, the evaluation framework. Without an evaluation of the programmatic efforts undertaken to achieve the Goals and Objectives outlined in the Strategic Direction and Action Plan, it is difficult for NMCOG and its economic development partners to determine the success of the program and to determine what changes, if any, need to be made. Given the circumstances related to the COVID-19 pandemic, there is great uncertainty as to what will transpire over the next two months, let alone the next five years. Achieving the CEDS Goals and Objectives is the responsibility of NMCOG, the Greater Lowell CEDS Committee, and other economic development stakeholders in the region. However, as the lead economic development agency for the region, NMCOG assumes the responsibility for collecting information and reporting on the achievements made in relation to the stated Goals and Objectives.

The *Greater Lowell Comprehensive Economic Development Strategy (CEDS) for May 2020 - May 2025* represents the first CEDS document developed by NMCOG since the *2010-2013 CEDS Update* was submitted to the Economic Development Administration. Since NMCOG has not been designated as an Economic Development District (EDD) yet, the agency must compete for Capacity Building or Economic Adjustment Assistance grants from EDA on a competitive basis. As a result, NMCOG has had to wait for two or three grant cycles to be approved for EDA funding, unlike the EDDs, who receive a five-year contract to implement “a continuous, comprehensive economic development process”. NMCOG plans to apply for EDD status as part of this year’s CEDS program in order to address this funding situation and hopes to receive additional funds through the CARES Act Notice of Fund Availability (NOFA) to be issued by EDA in the next few weeks.

This section outlines the Evaluation Framework for the *Greater Lowell CEDS for May 2020 - May 2025* and provides evaluation criteria and performance measures based upon what has been done in the past. This methodology focuses on both quantitative and qualitative measures and provides an overall assessment of the program activities related to the Goals and Objectives identified in this document. Over the next five years, the annual assessment process will show how the region addressed these Goals and Objectives and identify areas that need to be further addressed. This evaluation process will enable NMCOG and its economic development partners to address those issues most important to the economic recovery of the region from recent extensive layoffs and improve the quality of life post-COVID-19 pandemic.

The three major components of the Evaluation Framework are: the CEDS Implementation Process, the CEDS Goals, and the CEDS Priority Projects. While the CEDS Priority Projects – completed and ongoing/new – have been summarized in the Strategic Direction and Action Plan and provided in the Appendix, the CEDS Implementation Process and CEDS Goals are summarized over the next few pages.

EVALUATION FRAMEWORK

CEDS IMPLEMENTATION PROCESS

CEDS Implementation Process

The CEDS Implementation Process outlines how the “grass-roots” CEDS process is to be implemented over the five year period, the level of participation at the Greater Lowell CEDS Committee meetings and other economic development meetings, the availability and dissemination of data that was developed through the completion of the Five-Year CEDS and the CEDS marketing and outreach process.

Levels of Participation

The levels of participation at the CEDS Committee meetings are critical to the continuing success of the “grass-roots” CEDS planning process. NMCOG will recruit additional economic development stakeholders from various backgrounds to serve on the Greater Lowell CEDS Committee.

Due to the amount of time since the last Annual CEDS Update was completed, the Greater Lowell CEDS Committee had to be reconstituted. NMCOG was able to add representatives from local communities, the Cambodian Mutual Assistance Association, EforAll, and Mill Cities Communities Investment to provide different perspectives on the region’s economic needs and the actions required to address these needs.

Data Development and Dissemination

NMCOG provides data to the general public, local communities, other organizations, and the private sector on an ongoing basis. The CEDS document provides additional extensive data to supplement and enrich the economic development planning process. Our regional partners have used this data to apply for federal, state and foundation grants, which enable them to maintain or expand their services. We provide this information through our web site – www.nmcog.org – and social media – Facebook and Twitter – as well as by telephone, e-mail and mail.

NMCOG will expand its data development and dissemination role due to the CEDS document. With the impending release of the 2020 U.S. Census, NMCOG will be providing updated data to our local communities and economic development partners. NMCOG will analyze the newly released economic data that captures the economic downturn resulting from the pandemic and provide this in the Annual CEDS Update.

CEDS Marketing & Outreach

NMCOG can expand its marketing and outreach efforts to promote the CEDS. Given the serious economic recovery needs resulting from the COVID-19 pandemic, the Greater Lowell region needs an economic recovery plan to re-energize the economy. The CEDS document can provide the foundation upon which this economic recovery plan can be developed.

NMCOG will work with the Greater Lowell CEDS Committee and its member communities to address the economic recovery issues. In partnership with EDA, other federal agencies, and the Commonwealth of Massachusetts, NMCOG will apply for CARES Act funds to advance the economic recovery, while supporting our economic development partners in applying for federal and state assistance.

EVALUATION FRAMEWORK

GOALS AND OBJECTIVES

Goals and Objectives

The seven CEDS Goals and Objectives were summarized in the Strategic Direction and Action Plan. Outlined below are the specific measures, indicators, principal partners and data sources associated with each of the goals. These criteria are set up with the understanding that the data baseline will be effective as of May 1, 2020 and the Annual CEDS Update will summarize the activities that take place until the document is completed for submission to EDA. The performance indicators will reflect whether the specific measures have been positive, negative or unchanged. The assessment reports will also summarize the annual change that has taken place. In this way, the region's performance in meeting these specific measures over the course of the next year will be measured and tracked.

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.

| Measure | Indicator | Principal Partners | Data Source |
|--|--|---|---|
| Diversify skills | Number of enrollees and graduates | MHGLWB, GLCC, MCC, UML, UTEC and CBA | Enrollment and graduate data |
| Retrain workers | Number of retrained workers | MHGLWB, GLCC and MCC | Client data |
| Attract and grow small businesses | Number of new small businesses | EforAll and LDFC | Client data |
| Support business incubators and accelerators | Number of business incubators and accelerators | UMass Lowell | List of businesses |
| Improve stormwater management | Compliance with EPA MS4 Permit | NMCOG, NMSC and local communities | NMSC deliverables and Annual Reports submitted to EPA by municipalities |
| Address economic recovery | Total funding made available | NMCOG, Greater Lowell CEDS, MHGLWB and GLCC | Funding levels |
| Establish Hazard Mitigation Plans | Number of Hazard Mitigation Plans | NMCOG, FEMA, MEMA and local communities | Number of HMPs prepared by local communities and approved by FEMA |

EVALUATION FRAMEWORK

GOALS AND OBJECTIVES

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.

| Measure | Indicator | Principal Partners | Data Source |
|---|---|--|------------------------------|
| Grow business establishments | Number of businesses | NMCOG, CEDS Partners and private businesses | ES-202 |
| Increase employment | Total Number of Jobs | NMCOG, CEDS Partners and private businesses | ES-202 |
| Improve wages | Average wages | NMCOG, CEDS Partners and private businesses | ES-202 |
| Reduce unemployment rate | Unemployment rate | NMCOG, CEDS Partners and private businesses | LAUS data |
| Grow economy through CARES ACT | CARES Act funding | NMCOG, EDA and CEDS Partners | EDA reports |
| Increase small business loans | Number and amount of business loans | GLCC, Middlesex 3, CTI, LDFC, Lowell Plan, MHGLWB, EforAll, and local financial institutions | Greater Lowell CEDS survey |
| Grow STEM industries | Number of STEM industries | UML, MCC, MHGLWB and NMCOG | ES-202 |
| Increase federal and state funding (including EDA grants) | Number of federal and state grants (including EDA grants) | NMCOG, CEDS Partners, Congressional Offices, MOBD and MassDevelopment | Agency reports |
| Reduce poverty rate | Poverty rate | NMCOG and CEDS Partners | U.S. Census |
| Expand Opportunity Zone investments | Number and amount of Opportunity Zone investments | Lowell DPD and NMCOG | Lowell DPD |
| Assist entrepreneurs to grow their businesses | Number of requests for assistance | MCC Entrepreneurship Center/the Launch and EforAll | Reports from MCC and EforAll |
| Expand venture fund for MCC students | Level of venture funds | MCC | Reports from MCC |

EVALUATION FRAMEWORK

GOALS AND OBJECTIVES

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 employment support services – day care, transportation, language training, etc. – to overcome barriers to employment.

| Measure | Indicator | Principal Partners | Data Source |
|--|--|--|--------------------|
| Increase workforce training participation | Number of residents served by workforce training programs | MHGLWB, GLCC, MHLCC, CTI, MCC, UML, and other skill training providers | Agency reports |
| Enhance workforce training services for businesses | Number of businesses receiving services from workforce training programs | MHGLWB, GLCC, MHLCC, CTI, MCC, UML, regional technical high schools and other skill training providers | Agency reports |
| Increase level of skills training certification | Number of industry-recognized certifications and credentials Issued | MHGLWB, GLCC, MHLCC, regional technical schools, MCC and UML | Agency reports |
| Increase STEM graduates | Number of students graduating with STEM degrees | UML and MCC | Graduation reports |
| Increase availability of child care | Number of child care slots | MHGLWB and MHLCC | Agency data |

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.

| Measure | Indicator | Principal Partners | Data Source |
|---------------------------------|-----------------------------------|---|---|
| Increase sewer capacity | Sewer coverage by community | NMCOG and local communities | Sewer report |
| Increase water capacity | Water coverage by community | NMCOG and local communities | Water report |
| Update hazard mitigation plans | Number of hazard mitigation plans | NMCOG and local communities | NMCOG |
| Increase infrastructure funding | Amount of infrastructure funding | EDA, EOHEd, DHCD, NMCOG and local communities | Grant awards, municipal budget appropriations |
| Improve broadband coverage | Percentage of broadband coverage | NMCOG and local communities | Community reports |

EVALUATION FRAMEWORK

GOALS AND OBJECTIVES

Goal 5. Transportation: Develop the transportation infrastructure to ensure that the Transportation Network supports economic development needs and accommodates future economic growth and addresses evolving mobility technology, which is trending toward driverless cars, ride sharing, telecommuting and electrification.

| Measure | Indicator | Principal Partners | Data Source |
|---|---|---|---------------|
| Increase transit for affordable housing units | Number of affordable housing units within one-half mile of a transit route | NMCOG and LRTA | RTP follow up |
| Increase transit serving higher education and workforce training facilities | Number of transit routes serving higher education and workforce training facilities | NMCOG, LRTA, UML, MCC, MHGLWB and MHLCC | RTP follow up |
| Increase transit service to businesses | Number of businesses located within one-quarter mile of a transit route or station | NMCOG, LRTA, GLCC, and Middlesex 3 | RTP follow up |
| Increase population served by transit | Total population located Within one-quarter mile of a transit route or station | NMCOG and LRTA | RTP follow up |
| Improve bridge conditions | Number of structurally deficient bridges | MassDOT, NMCOG and NMMPO | RTP follow up |
| Increase transit ridership | Total number of transit rider trips | NMCOG and LRTA | NTD reporting |
| Increase walking and bicycle trails | Number and miles of walking and bicycle trails | NMCOG and local communities | RTP follow up |

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.

| Measure | Indicator | Principal Partners | Data Source |
|---|--|---|-------------------------------|
| Increase number of housing units | Number of housing permits and units | DHCD, NMCOG and local communities | Local Building Department |
| Increase affordable housing units | Number of affordable housing units | DHCD, NMCOG and local communities | SHI reports |
| Update Housing Production Plans | Number of updated Housing Production Plans | DHCD, NMCOG and local communities | DHCD web site |
| Increase CPA funds for affordable housing | Amount of CPA funds for affordable housing | NMCOG, local communities and CPC Committees | City budget and Town warrants |

EVALUATION FRAMEWORK

GOALS AND OBJECTIVES

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 economic growth.

| Measure | Indicator | Principal Partners | Data Source |
|---|--|---|-------------------------------|
| Increase CPA funds for open space, recreation and historic preservation | Amount of CPA funds for open space, recreation and historic preservation | NMCOG, local communities and CPC Committees | City budget and Town warrants |
| Increase affordable housing for artists | Number of affordable housing units for artists | Local communities and NMCOG | Building Department |
| Transform vacant space into creative economy space | Amount of vacant space transformed into creative economy space | Local communities and NMCOG | Building Department |