

CHAPTER 12 LINKING TRANSPORTATION AND ECONOMIC DEVELOPMENT

The economic competitiveness of the Greater Lowell region depends largely on the quality of our transportation system. The Northern Middlesex region is well served by the highway network provided through I-495, I-93 and Route 3, as well as the local street network. The widening of Route 3 generated economic benefits for the region, while addressing critical traffic and safety issues. Transportation infrastructure improvements in the region have encouraged private investment in our member communities, thus generating state and local taxes and creating valuable private sector jobs. Private businesses are able to access labor, supply and customer markets through this efficient transportation network. Further public and private investment in the transportation network, including locally initiated projects such as the Middlesex Turnpike, fuels the growth of the Greater Lowell economy.

SUPPORTING ECONOMIC DEVELOPMENT THROUGH TRANSPORTATION DEVELOPMENT

Within the introduction of this document, the goal established for the Economic Vitality component of the Regional Transportation Plan (RTP) reads as follows: *Ensure that the transportation network supports economic development needs and accommodates future economic growth.* This RTP supports projects, programs and policies that:

- Advance corridor and community development and redevelopment opportunities to improve the region's economy and enhance the quality of life;
- Prioritize transportation investments that serve targeted development sites;
- Advance strategies to support connections between key employment origins and destinations;
- Expand transit service to regional employment markets that are either underserved or not currently served;
- Improve bicycle and pedestrian access to employment, educational, health care, and recreational opportunities; and
- Connect multi-family and affordable housing with employment and educational opportunities.

At the federal level, there has been increased discussion of tying together the transportation, economic development, community development, workforce development and environmental planning programs undertaken by regional planning agencies, MPOs, and local communities. The Economic Development Administration (EDA), for instance, has outlined measures by which regional planning agencies can tie together their planning efforts in other functional areas, so that there is a more comprehensive approach to planning for sustainable development. The NMMPO has long recognized the need to support the transportation and economic development initiatives by combining these components within a single element in the UPWP.

This chapter provides an overview on how each transportation and economic development component supports the region’s efforts to increase employment opportunities and enhance the quality of life. A summary of the economic development planning processes that the region follows in working with the *Regional Strategic Plan for Greater Lowell*, the Greater Lowell Comprehensive Economic Development Strategy (CEDS) and with local communities will be provided, along with a description of how those activities support the Economic Goals and Objectives within this RTP. Additionally, there is discussion on how the initiatives and projects undertaken through the region’s economic development planning initiatives, particularly the *Greater Lowell Comprehensive Economic Development Strategy (CEDS) Update for 2020-2024* and the *Regional Strategic Plan for Greater Lowell*, are implemented and how they rely on transportation projects and programs. The implementation of these initiatives relies on numerous federal, state and local funding sources, including the federal and state highway and transit funds, public works funds from EDA, and the Commonwealth’s MassWorks and District Local Technical Assistance (DLTA) programs.

ECONOMIC DEVELOPMENT PERFORMANCE MEASURES AND TARGETS

In order to determine whether the transportation initiatives under the RTP meet the Economic Development Goals and Objectives, specific performance measures and targets have been established as follows:

- Number of businesses formed;
- Number of Affordable Housing facilities served by transit;
- New jobs created;
- Number of new transit routes to serve employment centers, health care facilities, and educational facilities;
- Increase in population residing within ¼ mile of a transit station or route by 5%, as compared to 2016;¹ and
- Increase in population residing within ½ mile of bicycle facilities by 15%, as compared to 2016.²

¹ The 2016 RTP included places of employment within one quarter of a mile of a transit route and a half-mile of bicycle facilities as performance measures and targets. However, the data source for the physical locations of places of employment contained significant inaccuracies. Therefore, places of employment has been removed from the 2020 RTP performance measures and targets, while NMCOG assesses the availability of another data source.

² Ibid.

NUMBER OF BUSINESSES FORMED

The Northern Middlesex region has attracted a substantial number of new businesses since the end of the 2008 recession. As shown in Table 12.1 below, between 2010 and 2018 the region saw a 29.4% increase in the number of businesses, with over half of the business creation (1,445) occurring in Lowell. Similarly, the period from 2014 to 2018 saw a 15.5% growth in the number businesses, with over half of the new businesses (789) locating in Lowell. Compared with other communities in the region, Lowell experienced the largest percentage increase during both periods, with 72.4% growth between 2010 and 2018 and 29.8% growth between 2014 and 2018. Lowell has the greatest level of transit coverage in the region and is home to one of the region’s two MBTA rail stations.

Table 12.1: Number of Businesses Formed 2010-2018

| Community | 2010 | 2014 | 2018 | New Businesses 2010 to 2018 | Percent Change 2010 to 2018 | New Businesses 2014 to 2018 | Percent Change 2014 to 2018 |
|--------------|--------------|--------------|--------------|-----------------------------------|--------------------------------------|--------------------------------------|--------------------------------------|
| Billerica | 1,160 | 1,213 | 1,305 | 145 | 12.50% | 92 | 7.60% |
| Chelmsford | 1,098 | 1,136 | 1,198 | 100 | 9.10% | 62 | 5.50% |
| Dracut | 571 | 625 | 684 | 113 | 19.80% | 59 | 9.40% |
| Dunstable | 61 | 61 | 79 | 18 | 29.50% | 18 | 29.50% |
| Lowell | 1,995 | 2,651 | 3,440 | 1,445 | 72.40% | 789 | 29.80% |
| Pepperell | 231 | 233 | 263 | 32 | 13.90% | 30 | 12.90% |
| Tewksbury | 838 | 841 | 909 | 71 | 8.50% | 68 | 8.10% |
| Tyngsborough | 361 | 364 | 388 | 27 | 7.50% | 24 | 6.60% |
| Westford | 651 | 678 | 745 | 94 | 14.40% | 67 | 9.90% |
| Total | 6,966 | 7,802 | 9,011 | 2,045 | 29.40% | 1,209 | 15.50% |

Source: Massachusetts Executive Office of Labor and Workforce Development, www.mass.gov/orgs/labor-market-information, accessed 5/30/2019.

NUMBER OF AFFORDABLE HOUSING FACILITIES SERVED BY TRANSIT

As of February 2019, there were 9,121 housing units in 162 facilities identified by the Department of Housing and Community Development as Chapter 40B Subsidized Housing within one-half mile of a transit route. This number will be used as a baseline for tracking future progress in providing transit service to affordable housing facilities in the region. For the purpose of this analysis, transit routes include LRTA bus routes, MBTA commuter rail stations, MBTA bus routes, Merrimack Valley Regional Transit Authority bus routes, and Nashua Transit System bus routes.

NEW JOBS CREATED

The Northern Middlesex region has experienced significant job growth since the end of the last recession. As shown in Table 12.2 below, between 2010 and 2018 the number of jobs in the region increased by 15.2%, with more than one-third of the job growth (5,138) occurring in Lowell and more than one-quarter of the job growth (4,627) occurring in Billerica. Between 2014 and 2018, the region

experienced an 8.4% increase in jobs, with over half (4,569) of new jobs locating in Lowell and more than one-quarter (2,509) locating in Billerica. As mentioned above, Lowell has the most extensive level of transit route coverage in the region. MBTA commuter rail stations are located in the City of Lowell and in North Billerica.

Table 12.2: New Jobs Created 2010-2018

| Community | 2010 | 2014 | 2018 | New Jobs 2010 to 2018 | Percent Change 2010 to 2018 | New Jobs 2014 to 2018 | Percent Change 2014 to 2018 |
|--------------|---------------|----------------|----------------|--------------------------|-----------------------------------|--------------------------|-----------------------------------|
| Billerica | 18,024 | 20,142 | 22,651 | 4,627 | 25.7% | 2,509 | 12.5% |
| Chelmsford | 19,979 | 21,194 | 20,801 | 822 | 4.1% | (393) | -1.9% |
| Dracut | 4,212 | 5,502 | 5,215 | 1,003 | 23.8% | (287) | -5.2% |
| Dunstable | 153 | 153 | 245 | 92 | 60.1% | 92 | 60.1% |
| Lowell | 27,118 | 27,687 | 32,256 | 5,138 | 18.9% | 4,569 | 16.5% |
| Pepperell | 1,186 | 1,314 | 1,405 | 219 | 18.5% | 91 | 6.9% |
| Tewksbury | 13,222 | 12,752 | 14,295 | 1,073 | 8.1% | 1,543 | 12.1% |
| Tyngsborough | 3,587 | 4,068 | 4,018 | 431 | 12.0% | (50) | -1.2% |
| Westford | 10,340 | 11,209 | 11,838 | 1,498 | 14.5% | 629 | 5.6% |
| Total | 97,821 | 104,021 | 112,724 | 14,903 | 15.2% | 8,703 | 8.4% |

Source: Massachusetts Executive Office of Labor and Workforce Development, www.mass.gov/orgs/labor-market-information, accessed 5/30/2019.

NUMBER OF NEW TRANSIT ROUTES TO SERVE EMPLOYMENT CENTERS, HEALTH CARE FACILITIES, AND EDUCATIONAL FACILITIES

In August 2017, the LRTA began operating the #20 Downtown/UMass North bus route. This route offers direct connections between UMass North Campus, Downtown Lowell and the UMass Lowell Inn and Conference Center on weekdays from 7:15 a.m. to 11:00 a.m. throughout the school year. Open to the general public, the #20 route enables a direct connection from north of the Merrimack River to Downtown Lowell, without requiring a transfer at the Kennedy Bus Hub. The Downtown Lowell route served by route #20 encompasses much of central business district, a significant employment center. In addition, UMass Lowell is the largest higher educational facility in the region and is also a major employer. Middlesex Community College’s principal facilities in Lowell and the Lowell General Hospital Saints Campus are within a quarter mile of the route.

Since the 2016 RTP, the LRTA has altered the routes #7, #9 and #20 to include the University Crossing stop at UMass Lowell, thereby improving the interconnectedness of the Downtown Lowell routes. In 2017, the LRTA and UMass Lowell collaborated on a transit program whereby the LRTA charges the University directly for rides taken by UMass students. The students are allowed to ride LRTA buses without paying a fee, significantly increasing the number of potential riders served by the LRTA system.

In early 2019, the LRTA was awarded a state grant to begin a nine-month Sunday service pilot. The new service will begin on June 16, 2019 with ten bus routes operating between 10:00 a.m. and 6:00 p.m. At

the end the nine-month pilot, the State and LRTA will analyze the effectiveness of Sunday service to determine whether it will be continued.

POPULATION AND PLACES OF EMPLOYMENT INCREASE WITHIN ¼ MILE OF A TRANSIT STATION OR ROUTE, BY 5% AS COMPARED TO 2011

As illustrated in Table 12.3 below, population within a quarter mile of a transit station or route grew by 4.1% between 2011 and 2016. However, the number of businesses within a quarter mile of a transit station or route shrank by 0.5%, or by 24 businesses, during the same time period.³ This slight decline in businesses occurred despite a corresponding region-wide growth in the number of businesses, as discussed on page 12-3. . For the purpose of this analysis, transit routes include LRTA bus routes, MBTA commuter rail stations, MBTA bus routes, Merrimack Valley Regional Transit Authority bus routes, and Nashua Transit System bus routes.

Table 12.3: Population and Places of Employment within One-Quarter Mile of a Transit Station or Bus Route

| | 2011 | 2016 | 2011 to 2016 Change | 2011 to 2016 Percent Change |
|---|---------|---------|---------------------|-----------------------------|
| Population residing within 0.25 miles of a transit station or route | 131,501 | 136,953 | 5,452 | 4.1% |
| Businesses located within 0.25 miles of a transit station or route | 7,070 | 7,036 | (34) | -0.5% |

Source: 2011 and 2016 American Community Survey and 2011 and 2016 InfoGroup

INCREASE IN POPULATION AND PLACES OF EMPLOYMENT WITHIN ½ MILE OF BICYCLE FACILITIES-BY 15% AS COMPARED TO 2011

The population residing within a half-mile of a bicycle facility grew by 5.0% between 2011 and 2016, as illustrated in Table 12.4. However, despite the regional growth in businesses since 2010 described above, the number of businesses within a half mile of bicycle facilities actually shrank by 1.0%, or 47 businesses, during the same time period. For the purpose of this analysis, bicycle facilities include paved off-street bike trails across the region, as well as Lowell’s bike lanes, sharrows and shared use bike lanes.

³ 2016 is the most recent data available for the physical locations of businesses

Table 12.4: Population and Places of Employment Located within 1/2 Mile of a Bicycle Facility

| | 2011 | 2016 | 2011 to 2016 Change | 2011 to 2016 Percent Change |
|--|---------|---------|---------------------|-----------------------------|
| Population residing within 0.5 miles of a bicycle facility | 118,956 | 124,916 | 5,960 | 5.0% |
| Businesses located within 0.5 miles of a bicycle facility | 4,774 | 4,727 | (47) | (1.0%) |

Source: 2011 and 2016 American Community Survey and 2011 and 2016 InfoGroup

REGIONAL STRATEGIC PLAN FOR GREATER LOWELL

NMCOG received funding from the Massachusetts Executive Office of Housing and Economic Development (EOHED) to develop and complete a Regional Strategic Plan (RSP) for the Northern Middlesex region. This state initiative to “increase local and regional planning capacity in the areas of economic development, housing and resource preservation” helped NMCOG update its previous regional policy plan, *2020 Vision: Planning for Growth in the Northern Middlesex Region*, which was completed in 1999. The RSP provides guidance to local and regional decision-makers on land use, infrastructure investment, environmental resource protection and housing and economic development policy. Within the document, there are various strategies for advancing housing initiatives and economic development through cooperative efforts between local, state and regional levels of government, as well as increased interaction and coordination with federal agencies.

The RSP fully supports the Sustainable Development Principles established by the Commonwealth as follows:

1. Concentrate Development and Mix Uses
2. Advance Equity
3. Make Efficient Decisions
4. Protect Land and Ecosystems
5. Use Natural Resources Wisely
6. Expand Housing Opportunities
7. Provide Transportation Choice
 - a) *Maintain and expand transportation options that maximize mobility, reduce congestion, conserve fuel and improve air quality. Prioritize rail, bus, boat, rapid and surface transit, shared-vehicle and shared-ride services, bicycling, and walking. Invest strategically in existing and new passenger and freight infrastructure that supports sound economic development consistent with smart growth objectives.*
8. Increase Job and Business Opportunities

- b) *Attract businesses and jobs to locations near housing, infrastructure, and transportation options. Promote economic development in industry clusters. Expand access to education, training and entrepreneurial opportunities. Support the growth of local businesses, including sustainable natural resource-based businesses, such as agriculture, forestry, clean energy technology and fisheries.*

9. Promote Clean Energy

10. Plan Regionally

The development of the RSP involved a public input process that included two Visioning Sessions. The first session was held at the UMass Lowell Inn and Conference Center. This session provided attendees with an overview of the planning project and with information regarding the proposed Land Use Reform Act (LUPA). In addition, a SWOT Analysis (Strengths, Weaknesses, Opportunities and Threats) was performed as a means of gathering input and ideas to be used in the formulation of the RSP goals. Draft goals were developed and discussed at the second SWOT session, held in Tewksbury, and input was received on the priority development and priority preservation areas in the region.

In addition to the public visioning sessions, numerous meetings with local officials and municipal staff were held to collect data, and receive input and feedback relative to the identification of the priority development and preservation areas. The RSP was also discussed at several meetings of the NMCOG Council. Based on input received throughout the plan development process, goals were formulated and organized into four subject areas: land use, economic development, housing and natural, cultural and environmental resources. The specific economic development goals were as follows:

1. Create a regional economic development framework that supports the efforts of private industry, local communities and agencies, educational institutions, federal and state agencies, and private foundations to create jobs and improve the quality of life in the region;
2. Create higher-skilled, higher wage jobs within industry clusters – biotech, nanotech, high technology, “green” industries, and emerging technology – to diversify the regional economy and focus on the global economy;
3. Utilize a combination of economic development and redevelopment strategies that reflects the character of each community and addresses infrastructure barriers (roads, wastewater capacity, telecommunications, etc.) to future economic growth; and
4. Increase the supply of skilled workers for industry in the region through the integration of economic development and workforce development strategies.

Once the final RSP was developed, presentations were made before the Lowell City Council and the Boards of Selectmen in each of the suburban communities. By early 2012, every community had approved and adopted the RSP. The *Regional Strategic Plan for Greater Lowell* can be accessed at <http://www.nmcog.org/regional-strategic-plan> .

GREATER LOWELL COMPREHENSIVE ECONOMIC DEVELOPMENT STRATEGY (CEDS)

The partnership between NMCOG and the Economic Development Administration (EDA) began with the submission of the *Greater Lowell Comprehensive Economic Development Strategy (CEDS) for 2004-2008*. This document represented the Five-Year CEDS for the Greater Lowell region and was followed by subsequent Annual Updates that built upon the initial document. The economic development framework for the Greater Lowell region was established through the development and implementation of this CEDS document. Initially, NMCOG staff held a Kick-Off Session at Lowell City Hall and nine additional public meetings to receive input from economic development stakeholders in the region. Six CEDS Committee meetings were subsequently held for additional input and feedback on the draft Needs Analysis, Vision and Action sections of the CEDS document. Goals and Objectives related to Economic Development, Workforce Development, Education, Affordable Housing, Racial and Ethnic Diversity, Pockets of Distress, Regional Transportation System, Quality of Life, Technology and Financial Investments were established. NMCOG staff then identified short-term (up to 18 months), intermediate (2-4 years) and long-term (5+ years) CEDS Priority Projects that supported these goals and objectives. Chief among these projects were the highway and transit projects identified within the Transportation Improvement Program (TIP) and Regional Transportation Program (RTP). It was generally recognized that the development of infrastructure, particularly related to transportation, was a critical component to a growing economy.

When the five-year period had ended, NMCOG received another Short-Term Planning grant from EDA to develop the *Greater Lowell Comprehensive Economic Development Strategy (CEDS) for 2009-2013*. This document built upon the initial work that the previous CEDS activities had fostered. In order to gather public input, NMCOG staff held two SWOT (Strengths, Weaknesses, Opportunities and Threats) sessions and six CEDS Committee meetings. A new set of Goals and Objectives was approved by the Greater Lowell CEDS Committee and established as follows:

1. **Economic Development** – Develop a regional economic development framework that supports the efforts of private industry, local communities and agencies, educational institutions, federal and state agencies and private foundations to create jobs and improve the quality of life in the region.
2. **Workforce Development** – Increase the supply of skilled workers for industry in the region through the integration of the economic development and workforce development systems.
3. **Education** – Increase the educational and workforce skills of primary, secondary, and college students to meet the current and future needs of industry.
4. **Affordable Housing** – Create more affordable and market-rate 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 quality housing.
5. **Regional Transportation System** – Develop the infrastructure needed to build upon the strengths of the regional highway system and the public transportation networks to enhance access to the economic centers of the region.

6. **Infrastructure** – Build upon the existing sewer, water, telecommunication and public utility infrastructure to increase capacity so that private businesses and homeowners can grow in the future.
7. **Financial Investments** – Target federal, state, local, non-profit and private funds to those projects that create jobs and improve the quality of life in the neighborhoods.
8. **Quality of Life** – Maintain the community character in the region by preserving and protecting the region’s natural, cultural and historic resources and encouraging concentrated development.

As with the previous Five-Year CEDS documents, NMCOG staff identified major regional development projects, as well as specific short-term (up to 18 months), intermediate (2-4 years) and long-term (5+ years) CEDS Priority Projects that supported these goals and objectives. The major development projects included Hamilton Canal, Lowell Junction, District Local Technical Assistance (DLTA) projects, Tyngsborough Town Center Revitalization, Downtown Lowell Renaissance Plan, Pepperell Paper Mill Site Redevelopment Project, Middlesex Turnpike Corridor Development and Woburn Street Corridor. For the most part, each of these major development projects had a transportation component as part of the project. The CEDS Priority Projects provided an update on the status of these projects since the *Greater Lowell Annual CEDS Update for 2008* was completed and identified an updated list of the short-term, intermediate and long-term projects that advanced the Goals and Objectives identified in the Five-Year CEDS.

The *Greater Lowell Comprehensive Economic Development Strategy Update for 2010-2013* was built off the Five-Year CEDS document for 2009-2013. While the same Goals and Objectives were utilized, there were different major development projects and CEDS Priority Projects in the updated document. The major regional development projects in 2013 were the Middlesex Village/Wood Street – Rourke Bridge Study, Tewksbury Master Plan, Hamilton Canal, Hamilton Crossing, Tanner Street Initiative, Middlesex Turnpike, five corridor studies (Woburn Street in Billerica, Lowell and Tewksbury; Route 38 in Tewksbury; Route 133 in Tewksbury; East Street in Tewksbury; and Minot’s Corner/Route 110 in Westford), the MassWorks projects, the Chelmsford and Dracut Town Center Studies and the UMass Lowell projects. The Hamilton Canal Development District and Tanner Street Initiative (now the Ayer City Urban Renewal Plan) in Lowell, Middlesex Turnpike Phase 3 in Billerica, and the Route 38 Corridor Improvements in Tewksbury stand out as examples of the strong link and interdependency between transportation and economic development. The implementation of these four projects is likely to result in more than 4,000 permanent jobs. In addition to these major projects, the *Greater Lowell CEDS Update for 2010-2013* identified 70 short-term priority projects.

NMCOG has been awarded a grant from the EDA effective April 30, 2019 to complete the *Greater Lowell CEDS for 2020-2024*. This Five-Year CEDS will build upon the previous work in the *Greater Lowell CEDS Update for 2010-2013*, and will incorporate an extensive public and stakeholder input process to identify new Goals, Objectives and projects to address current conditions. NMCOG’s collaborative partners, stakeholders and the region’s municipalities use the planning process to articulate their own economic and transportation priorities in the regional context and to explore opportunities for cooperation. The

CEDS planning process provides the framework for a number of related local and regional activities – transportation, expedited permitting, affordable housing, etc. – to be addressed collectively in order to provide a stronger base for economic development.

In addition, there are a number of economic development projects under the District Local Technical Assistance (DLTA) program funded by the Department of Housing and Community Development (DHCD) that have integral transportation components. These regional development projects, combined with the CEDS Priority Projects, provide the means to address overlapping transportation and economic development goals.

CREATING ECONOMIC OPPORTUNITY

As previously discussed, the region’s transportation network must be well managed and maintained to ensure the continued economic vitality of the region. Transportation support clusters and agglomerations, enhances employment and labor market accessibility, opens new markets for businesses and improves supply chain efficiency. It results in healthy main streets, downtowns and town centers. Transportation projects create jobs and can be linked to workforce development programs that help underserved populations obtain employment. Given the importance that Millennials place on mobility and their desire to forego car ownership, access to employment and recreation in walkable, bikeable, and transit-accessible areas is becoming a key factor for recruiting this critical workforce group.

The USDOT recognizes that transportation and economic opportunity are interconnected: one of the four strategic goals of the USDOT Strategic Plan for FY 2018-2022 is to “Invest in Infrastructure to Ensure Mobility and Accessibility and to Stimulate Economic Growth, Productivity and Competitiveness for American Workers and Businesses.” Transportation costs are the second largest expense for American households, and low-income households are less likely to own a car compared to higher income households. A lack of transportation options, unreliable transit and unsafe streets can interfere with access to jobs and other essential services.

The USDOT and FHWA promote policies and activities that encourage economic development through transportation. This concept is strongly tied to Environmental Justice, as transportation has the potential to improve economic opportunities for minority and low-income communities. The NMMPO strongly supports these initiatives and is committed to working with its transportation and economic development partners to ensure that the region’s low income and minority communities are afforded access to the programs that facilitate access to employment, education and other essential services.

The NMMPO will continue to work with providers of public transportation, as part of the transportation planning process, to identify transportation connectivity gaps in accessing essential services. Through the UPWP tasks, the NMMPO staff will continue to identify gaps in the connectivity of the transportation system and outline infrastructure and operational solutions that provide the public, especially the traditionally underserved populations, with adequate access to employment, education and health care. The effectiveness of the public participation process for engaging transportation disadvantaged

communities in the transportation decision-making process is evaluated in the Public Participation Plan. The Section 5310 Coordinated Human Service Public Transportation Plan will be updated during FY 2020 and NMMPO staff will continue to assess the safety and condition of pedestrian and bicycle facilities, including compliance with the Americans with Disabilities Act.

TRANSPORTATION AND ECONOMIC DEVELOPMENT PRIORITIZATION AND COORDINATION

The link between transportation and economic development in the Northern Middlesex region is well documented. The economic vitality of the Northern Middlesex region depends upon the active implementation of transportation projects throughout our communities. For these reasons, the NMMPO has established a Transportation and Economic Development Prioritization and Coordination Task as part of the annual UPWP. To illustrate the tie-ins between the aforementioned economic development documents and the transportation work plan for our region, the following projects have been identified under this year's work element:

- **Hamilton Canal District (Lowell)**

NMCOG staff will continue to work with the City of Lowell on the Hamilton Canal Innovation District project. The City of Lowell, with the assistance of NMCOG staff, received an additional \$2.482 million in EDA Public Works grant funds for the construction of 450 feet of new roadway, a new canal bridge and utilities to support the planned development of more than 203,000 square feet of office/R&D space, 21,800 square feet of retail space, a municipal parking garage funded by a \$35 million investment by the City, and up to 68 new housing units. Construction on the canal bridge is expected to be completed in July 2019. The Judicial Center has been largely constructed and is expected to open for business in 2020. The City previously received \$4,572,000 in MassWorks funds as a match for the EDA Public Works grant.

The City received \$2 million in MassWorks funds in 2016 to upgrade a section of Thorndike Street adjacent to the Gallagher Intermodal Transportation Center in support of the mixed-use, transit oriented Thorndike Exchange project. Construction of this project began in spring 2018. NMCOG staff continued to work with the City of Lowell to ensure that the \$15 million in State funds awarded in April 2014 for off-site traffic improvements needed to accommodate the Hamilton Canal development project, such as the Lord Overpass improvements, were included on the State's Capital Investment Program.

NMCOG staff continues to work with the City of Lowell on the planning and design of these vehicular, transit and pedestrian improvements. The combination of multiple transportation and economic development funding sources provide for the improvement of the multimodal corridor along Thorndike Street, from its junction with the Lowell Connector to Gallagher Terminal and the Hamilton Canal Innovation District.

- **Ayer City Urban Renewal Plan (Lowell)**

During the past five years, NMCOG staff have assisted the City of Lowell in the development of the Ayer's City Industrial Park Urban Revitalization and Renewal Plan (ACIP). Through the redevelopment of a blighted industrial district located between the Lowell Connector and Tanner Street, the Urban Renewal Plan called for the implementation of several transportation improvements, including the de-elevation of the section of the Lowell Connector extending from Plain Street to Gorham Street; the relocation and redesign of the intersection of the Lowell Connector ramps, Tanner Street and Plain Street; pedestrian improvements along Tanner Street; and the construction of a pedestrian greenway along River Meadow Brook (as outlined in the River Meadow Brook Greenway Feasibility Study completed by NMCOG under the FFY 2014 UPWP). The Urban Renewal Plan was approved by DHCD in 2014. MEPA certification for the ACIP Plan was received in February 2016.

The City has been working with Watermark Engineering to produce final design and engineering documents for the realignment of Tanner Street. It is expected that 100% design plans for the project will be completed this summer. The new roadway will create a new 4-way intersection at the Target Plaza and extend up to Montreal Street, which will be extended a short distance to connect to the new Tanner Street. Additionally, the new Tanner Street will connect with the existing Tanner Street at the intersection with West London Street. The City will be working with an appraiser to determine the value of the properties to be taken by eminent domain due to the new road alignment. The City will apply for MassWorks funds in order to construct the project. NMCOG staff will continue to work with the City to advance the transportation components of the urban renewal plans.

- **Thorndike Street Improvement Project (Lowell)**

The Thorndike Street widening project works in conjunction with a number of other infrastructure projects, including the recently completed South Common Redevelopment Phase 1 project, the redevelopment of the Lord Overpass, and the future improvements to the end of the Lowell Connector. The project was completed by S&R Corporation in October 2018. The project added a left turn lane into the Gallagher Terminal property and a left-turn lane onto Highland Street. Construction documents for the Lord Overpass are being finalized and it is anticipated the project will be bid by the end of May 2019 with construction to start in the fall 2019. The Thorndike Exchange project, which is a \$50 million TDI project dependent upon these infrastructure improvements, is expected to be completed over the next two to three years. Phase I is near completion, but needs tenant fit up for the commercial units. Phase II has received a foundation permit and has submitted a structural application, thus anticipating a 2-3 year period for completion. NMCOG staff will work with the City staff to support the completion of the Thorndike Street Improvement Project and the Thorndike Exchange project.

- **Rourke Bridge (Lowell)**

The replacement of the temporary Rourke Bridge in Lowell has been a priority for the region for many years. The Rourke Bridge is located on Wood Street, which serves as a major arterial between Route 3 at Drum Hill Square and the north side of the Merrimack River at Pawtucket Boulevard. The current bridge is located along the most congested corridors in the region. During peak travel periods, the bridge cannot physically accommodate the movement of emergency vehicles, requiring emergency responders to find alternate routes, which increases response times and places patients at undue risk. In 2014, NMCOG used a \$500,000 earmark to study replacing the temporary bridge with a more permanent structure. NMCOG staff worked with MassDOT, the City of Lowell and the Towns of Chelmsford and Dracut to hire a consultant (Vanasse Hangen Brustlin, Inc.) to lead the study. The results of the feasibility study identified several alternatives for a new crossing, along with recommendations for improvements to nearby roads and intersections. The cost of replacing the bridge ranges from \$50-70 million, depending on the alignment that is ultimately selected.

In 2015, the Lowell City Council voted to move three alternatives forward into the design phase. In 2018, MassDOT provided funding for the preliminary design and environmental permitting for a new bridge. The design will include an expansion of the bridge from two to four lanes and include upgraded bicycle and pedestrian facilities. Funding for the final design and construction has not yet been identified. Due to the importance of this corridor for regional traffic flow, emergency response, and economic development, NMCOG will continue to pursue funding for the construction of a new bridge. The high priority of this project cannot be overstated.

- **Route 38 Corridor Improvements (Tewksbury)**

The Route 38 project in Tewksbury provides an opportunity to attract increased private investment through the improvement of travel and safety conditions along the corridor. The Route 38 Corridor Study, completed by NMCOG staff, identified the need for extensive transportation improvements to address congestion, safety and pedestrian facilities throughout the corridor. The results of the study were intended to assist the Town in making informed decisions regarding land use and development, based on the capacity of the roadway and projected operating conditions along the corridor. The study was conducted to assess current and future operating conditions, define the development thresholds at which it becomes necessary to implement specific levels of travel mitigation in order to accommodate anticipated development, and project traffic conditions along the corridor over twenty years, based on high, medium and low development scenarios. The Tewksbury Economic Development Committee identified several sites along the Route 38 corridor that have potential for new development or redevelopment.

Full build-out of the underdeveloped and vacant properties has the potential to generate several thousand additional trips per day, creating significant impacts along an already overburdened corridor.

The implementation of the Route 38 improvements will require collaboration between the NMMPO, the Town, MassDOT and private sector partners. Established economic development and transportation partnerships in the region will be leveraged to advance the transportation recommendations through inclusion in the TIP, Regional Transportation Plan, Congestion Management Program and the new *Greater Lowell CEDS for 2020-2024*. Multiple funding sources will be needed, given the large cost of the project.

The proposed improvements include two projects programmed in the regional TIP – (1) Salem/South/Main in FFY 2019 and (2) the resurfacing of Route 38 and sidewalk reconstruction between Colonial Drive North to the intersection of Old Boston Road in FFY 2021. The Town is in the process of reviewing an extension of this project further southward to Victor Drive. A new project submission could include Route 38 from Colonial Drive to Victor Drive or Livingston Street. Route 38 intersection improvements from the Lowell line to Pike/Astle Streets was outside the TIP target projects, but is programmed for FFY 2023 utilizing Statewide HSIP funding.

With the increased focus on Route 38, several private investment redevelopment projects have been completed or are in the process of being completed. The development of 192 housing units at Balsam Place and the 13,500-square foot Lowell General Hospital (LGH) urgent care facility/patient service center have been completed. This \$51 million development project created fourteen full-time jobs and numerous construction jobs.

The Tewksbury Town Center Master Plan Committee completed the Town Center Master Plan in April 2016. The principal focus of the Town Center Master Plan was on traffic and circulation, a façade improvement program, streetscape improvements, signage and wayfinding, land use and zoning improvements and public and private investment projects. The Town voted two years ago to replace the Fire Station in the Town Center, which will have an economic impact upon this area. Construction will begin by January 2020 and take 14 months to be completed.

- **Boston Road Phase 2 Revitalization Project (North) (Billerica)**

The Town applied for \$2 million in MassWorks funds in 2017 to support three commercial development projects: the construction of a 4,950 square foot commercial facility at 328 Boston Road to include Sal’s Pizza and two other retail tenants; the construction of a 7,500 square foot retail facility at 324-326 Boston Road to include a restaurant, retail shop and café; and the potential development of an independent living/assisted living facility on Boston Road. Private investors will provide \$3 million as matching funds to the MassWorks grant, while the State and Town are already investing \$176 million in the new Billerica High School in this immediate area.

The Town did not receive MassWorks funding for this project, but has decided to move forward with the project. This project is programmed in FFY 2022 and 2023 of the FFY 2020-2024 Northern Middlesex TIP. The Town submitted the 25% design documents to MassDOT in October 2018 and is still awaiting feedback. The project will help create 50 part-time and 18 full-time jobs, in addition to construction jobs.

- **Vinal Square and Town Center Improvements (Chelmsford)**

NMCOG staff completed the Strategic Action Plan for the Town of Chelmsford in January 2015. This Plan included the implementation of the transportation improvements recommended in the Vinal Square Traffic Study, completed by NMCOG under the FFY 2014 UPWP. It also included recommendations relative to streetscape improvements, lighting, signage, parking, and pedestrian connectivity. The plan was designed to encourage reinvestment in the Vinal Square neighborhood. NMCOG staff has continued to assist the Town with the implementation of the recommendations. All of the roadways within the Square (Route 40, Route 3A and Route 4) are on the federal aid system and most are owned and controlled by MassDOT. Collaboration between the Town, MassDOT, residents and the business community will be needed to advance the recommendations. The Town has invested some funds to begin the streetscape improvements through an initial ground study. NMCOG staff also worked with the Town on a Visioning Project to determine alternative uses for the UMass Lowell West campus in North Chelmsford. UMass Lowell recently sold the West campus to a private developer.

NMCOG staff will continue to assist the Town in implementing the recommendations outlined in the Chelmsford Center Village Pedestrian and Parking Plan completed six years ago. The Town of Chelmsford received a MassWorks grant of \$370,000 in 2016 to construct a portion of the Beaver Brook Walk, build a pocket park and provide public parking and landscaping along the Bruce Freeman Rail Trail. These public improvements were to be matched by \$15 million in private investment to construct the 54-unit market-rate rental project entitled the Grist Mill Apartments in the Town's Center Village Overlay District. Due to some delays in the development project, the Town requested an one-year extension from DHCD on its MassWorks grant. DHCD extended the project until June 30, 2019. The Grist Mill Apartments are under construction and will be completed by October 2019. The Town has also been approved for TIP eligibility for a Route 110 improvement project in the Town Center with proposed improvements to access, parking, and bicycle and pedestrian facilities. This project is included in the RTP recommendations and it will be considered in future TIP programming.

- **Lowell's Canal Bridges (Lowell)**

The City of Lowell is unique in that there are eight bridges crossing the canal system that were previously owned and/or controlled by Enel Green Power, a multi-national power company, until the City took ownership in July 2017. Prior to the City taking ownership, Enel repaired two of the bridges – Broadway Street over the Pawtucket Canal and Kearney Square over the Eastern Canal. The remaining six bridges were in various states of disrepair or deterioration, resulting in closures or weight restrictions. This adversely affected public safety, commerce, economic development, traffic congestion, and transportation efficiency. Buses, fire apparatus, and larger commercial vehicles were prohibited from crossing these spans, and had to detour around these bridges. In 2015, the

City of Lowell was awarded a TIGER Grant for \$13,389,750 to address the repair of these six bridges. This work has been overseen by MassDOT in conjunction with the City of Lowell. The design and engineering of the six bridges was completed in 18 months. Due to funding constraints, the superstructure replacement at the Suffolk Street over the Northern Canal was removed from the original project scope and the City will seek additional funds to complete the project. Project bids for the five remaining bridges were opened on February 21, 2018 and awarded to the low bidder in March 2018. Construction began on July 1, 2018 with final construction anticipated on April 1, 2022. The status of the five bridges as of April 2019 was as follows:

1. Pawtucket Street over the Pawtucket Canal – Utility relocation underway. Closed for one lane of traffic inbound to Lowell beginning in mid-May 2019. Bridge completion is anticipated by April 2022.
 2. Pawtucket Street over the Northern Canal - Construction underway and closed to vehicular traffic (open to pedestrian traffic). Bridge completion is expected by November 2020.
 3. Central Street over the Lower Pawtucket Canal – Construction work began in early April 2019. Bridge completion is anticipated by September 2021.
 4. Merrimack Street over the Western Canal – Under construction. Bridge completion is anticipated by October 2019.
 5. Merrimack Street over the Merrimack Canal – Project complete.
- **Route 3 Exit 36 Southbound Ramp Study (Tyngsborough)**

In 2014, NMCOG, the Nashua Regional Planning Commission (NRPC), the Town of Tyngsborough, Massachusetts and the City of Nashua, New Hampshire completed a feasibility and planning study to assess the impacts and benefits of adding a southbound off ramp at Exit 36 on Route 3. The project area straddles the Massachusetts/New Hampshire border and directly impacts the City of Nashua and the Town of Tyngsborough. The area is an economic center for both the NMCOG and NRPC regions due to the significant amount of commercial, retail and high-density residential development. In addition, the expansion of Route 3 in Massachusetts has provided additional untapped economic development opportunities for this region.

Traffic congestion and the lack of a well-coordinated development strategy across municipal and state boundaries have impeded economic growth and development in some portions of the project area. There has been discussion for a number of years regarding the potential extension of MBTA commuter rail along the Daniel Webster Highway in South Nashua. Potentially, commuter rail riders could access the new station via Exit 36.

The study found that the construction of a southbound ramp at Exit 36 will improve overall operating conditions in the study area by relieving traffic congestion and delay, reducing greenhouse gas emissions, improving travel time, and decreasing lost productivity. The project would also enhance the efficiency of public transportation and support future passenger rail service.

The benefits to economic development are significant as the project would also generate opportunities for business investment and serve as catalyst for future sustainable development.

The Exit 36 Southbound project has been included in the NRPC Long Range Transportation Plan (LRTP) for many years and is widely accepted as having significant benefit for a relatively small investment. The project was also recommended as part of the Daniel Webster Highway and Spit Brook Road Corridor Study completed in 2002. Most recently, the City of Nashua Transportation Task Force included Exit 36 Southbound (Exit 36S) in its report to the Mayor as a high priority project for the City – citing congestion relief and economic development opportunities to the City. In 2015, the Tyngsborough Board of Selectmen voted unanimously to support the project given the economic development benefits along the northern section of Middlesex Road. The bi-state nature of the project provides opportunities for innovative financing, interstate cooperation, and public/private partnerships.

The project is still awaiting funding approvals from New Hampshire. Tyngsborough has expressed renewed interest in this project due to its focus on developing a new town center. Several buildings have been identified as the core of the new town center – Old Town Hall, Winslow School, the First Parish Meeting House and the Littlefield Library - and there needs to be an overall plan to tie these buildings together. The connections will largely be accomplished through road and sidewalk improvements that make the area more accessible to residents, visitors and shoppers. The Town needs to address its goal of making the area a commercial destination in order to complement the historical and institutional buildings in the area. NMCOG staff will continue to work with the Town to assess the interests of its residents in establishing a new town center and to develop streetscape and transportation improvements that would make the area more attractive, particularly for pedestrians. There will also need to be a focus on business incentives to attract private investment to the area.

- **Route 110 and Route 40 Corridor Improvements (Westford)**

Over the past six years, NMCOG staff has assisted the Town of Westford in advancing improvements along the Route 110 corridor in Westford, which is the town’s fastest growing business corridor. One million square feet of new development have been permitted along the corridor, necessitating the need to expand transportation infrastructure. The Town has also considered the establishment of multifamily zoning along this corridor to address their affordable housing goals.

The Town has completed intersection improvements at Route 110 and Tadmuck Road. In order to access the Route 110 corridor, visitors and customers utilizing Route 495 need to travel via Boston Road. This road has been described as the “gateway” to the Route 110 corridor and the Town Center and is need of improvement in the future. Upgrades to Boston Road between I-495 and Main Street are currently recommended in this RTP and the Boston Road project is programmed in FFY 2024 of the FFY 2020-2024 Northern Middlesex TIP, which was endorsed by the NMMPO in May 2019.

NMCOG staff also assisted the Town with the planning and project initiation processes for improvements along the Route 40 corridor. This corridor contains some of the few remaining industrially zoned parcels in the community. Improvements at two intersections along the corridor were programmed on the FY 2018-2022 TIP. The intersection improvement at Route 40 and Oak Hill Road were begun in April 2018 and is anticipated that construction will be completed in Fall 2019. The intersection improvements at Groton Road and Dunstable Road were started in March 2019 and are expected to be completed by Spring 2020. Both of these locations were on the region's high crash list.

- **Appleton, Middlesex and Jackson Streets (Lowell) And Route 113 (Pepperell) Corridor Studies**

NMCOG staff has worked closely with the City of Lowell and Town of Pepperell to address traffic, land use, and economic development issues related to Appleton, Middlesex and Jackson Streets (Lowell) and Route 113 (Pepperell). The work related to Appleton, Middlesex and Jackson Streets, addressed the connections between Appleton Street and the Lord Overpass, as well as the tie-ins with Central and Church Streets, to provide more efficient traffic flow and pedestrian safety. The draft corridor study for Appleton Street also addressed the land use and economic development issues, as a means to encourage more private investment along the corridor. The corridor study was expanded to Middlesex and Jackson Streets in order to complement the City's efforts to be designated as a Transformative Development Initiative (TDI). NMCOG staff has collected data for Middlesex and Jackson Streets similar to that developed for Appleton Street as part of its partnership responsibilities. NMCOG staff will work with the City staff to review and update the draft Appleton, Middlesex and Jackson Streets corridor study over the coming months.

In terms of the Route 113 Corridor Study, NMCOG staff built upon the previous work in Railroad Square and along the corridor to encourage additional private investment. Private businesses located along the corridor sought to address various transportation issues - congestion, parking, pedestrian traffic, bike lanes, etc. The Town also wanted to encourage additional investment and provide the support services and infrastructure that these businesses need. These actions are related to the reuse of the former Pepperell Paper Mill building site and the review of zoning changes to address the needs of the business community. The initial draft corridor study will be incorporated within the Economic Development section of the updated Master Plan in late 2019.

- **Route 129 Corridor (Chelmsford)**

The Town of Chelmsford has focused on the need to support the businesses along the Route 129 corridor and to attract more private investment to the area. NMCOG staff had worked with the Town of Chelmsford to survey the business community on the need for an overlay district that would allow business amenities along Route 129. The adoption of the Route 129 Business Amenity Overlay District (BADO) by Chelmsford Town Meeting in 2016 has provided new opportunities for business amenities and multifamily housing NMCOG staff worked last year with the Chelmsford

Economic Development Commission to develop a Permitting Handbook and an additional business survey to improve the overall business climate in Chelmsford.

The Town applied for funding under the MassWorks program to address road, sidewalk and bicycle infrastructure issues in the Route 129 Corridor. Identified as the Chelmsford Route 129 Billerica Road Enhanced Mobility project, these infrastructure improvements were designed to support a \$6 million private two-building mixed-use development that included a 4,300 square foot 200-seat restaurant and 8,000 square feet of retail and service space at the corner of Billerica Road and Scientia Drive. The Route 129 area would be enhanced by a Mass Housing Choice Capital Grant request for \$250,000 to develop 3,400 linear feet of new sidewalks along Turnpike Road and a MassDOT TIP project scheduled for FFY 2019 to realign the Billerica Road intersection, reconstruct the bridge/culvert adjacent to River Meadow Brook and provide new sidewalks and bike lanes. The project would create 100 construction jobs, 10 full-time jobs and 60 part-time jobs. Unfortunately, the Town only received funding under the Housing Choice Capital Grant program.

With funding from MassDevelopment's Site Readiness Program, the Town of Chelmsford was able to hire Camoin Associates and Howard Stein Hudson to complete an analysis on repositioning the Chelmsford Cross Roads at Route 129 Business Park for the future. The study entitled *Chelmsford Cross Roads at 129: Repositioning a Suburban Office Park for a New Era* was released in May 2019. This study focused on several areas: Existing Conditions Analysis, Market Analysis, Stakeholder Strategy Session, Suburban office park case studies, Strategy recommendations for repositioning the park, Conceptual visualizations of the future of the park, and the final presentation to stakeholders, conducted on May 14, 2019. This study provides a blueprint for the Chelmsford Economic Development Commission to move forward in addressing the needs of the current businesses and in attracting new private investment in the Route 129 corridor. As noted in the previous discussion, the need for transportation infrastructure improvements in this area is an important component for future economic success.

- **Working Cities Challenge (WCC)/Smart Growth America Project (Lowell)**

Four years ago, the City of Lowell was chosen as one of six cities in Massachusetts to be designated as a Working Cities Challenge (WCC) community by the Federal Reserve Bank of Boston. This designation was made as a result of the unique partnerships established by the City and the Coalition for a Better Acre (CBA) to address the barriers facing Acre residents in accessing employment and educational opportunities to improve their quality of life. A significant barrier to the Acre residents is access to transportation options in order to get to work or to attend classroom training. The WCC Board and staff have continued to work directly with the Federal Reserve Bank of Boston to focus on the economic development, cultural and educational needs of Acre residents. Within this year's DLTA program, NMCOG agreed to work with the City of Lowell to address pedestrian and bicycle issues related to the City's Complete Streets Program in downtown and the Acre. The Economic Development Work Group of the WCC has adopted the Smart Growth America

recommendations as part of its work plan for 2019 and Jeanne D’Arc Credit Union has allocated \$200,000 in small business loan funds for Acre businesses.

TRAVEL AND TOURISM LINKS TO ECONOMIC DEVELOPMENT

As the Commonwealth’s third largest industry, tourism contributes more than \$20 billion annually in direct spending alone. More than 27 million annual visitors sustain an industry that supports nearly 150,000 jobs statewide.⁴ The transportation needs of the tourism and recreational industries differ from commuter travel, with tourism generally seen as a generator of travel demand and transportation as the key to accessing major tourist attractions. Transportation is a critical element in the operation of visitor attractions and in supporting activities, such as national and state parks, performance venues, sport arenas, museums and recreational facilities. Effective transportation planning can help balance the needs of different groups during peak tourism seasons or special events. Meeting these needs requires consideration of the following factors:

- Alleviating traffic congestion and parking concerns near visitor attractions;
- Creating better access and mobility to meet the needs of those traveling to various attractions and venues;
- Improving traveler information resources;
- Linking existing but separate tourist attractions; and
- Establishing an ongoing collaborative process between the NMMPO, local communities, and organizations representing tourism interests.

While transportation facilities span all modes of travel, recreation and tourist facilities can have special transportation needs. Travel to tourism and recreation sites is often concentrated in certain seasons or on weekends. Visitors to tourism and recreation sites often need guidance on how to access those facilities, as well as suggestions on routing and mode choices. Such needs can be served through information kiosks, websites, 511 traveler information, specialized maps, and signage.

NMMPO TOURISM AND TRANSPORTATION ACTIVITIES

The NMMPO has included a work task in the UPWP entitled “Enhancing Travel and Tourism”. Through this task, an inventory of tourist sites and attractions was developed for the entire region. This information can be accessed on the NMCOG website: <http://www.nmcog.org/enhancing-travel-and-tourism>. NMCOG worked with the Greater Merrimack Valley Convention and Visitors Bureau to solicit input on development of the inventory and on identifying the needs of the tourist industry in the

⁴ <https://www.massvacation.com/travel-trade/getting-around/stats-reports/>

Northern Middlesex region. The inventory includes the following types of sites, facilities, venues and events:

- Museums
- Festivals and Fairs
- Sporting Events and Related Sites
- Art Galleries
- Parks and Open Space
- Historic Building and Sites
- Music Venues
- Theaters
- Entertainment Complexes

Accessing these cultural, recreational, and educational assets is critical to the economic strength of the region. NMMPO staff have collaborated with the LRTA to identify transit facilities near each site. An interactive map showing the location of each site or event and its proximity to nearby transit facilities, bus stops and parking facilities, will be available on the NMCOCG website by July 2019. The NMMPO will continue to coordinate with tourism and recreation stakeholders across the region to address transportation needs, and to collaborate on planning activities relative to tourist attractions and upcoming special events.

The NMMPO has a long history of working with the National Park Service to improve transportation access to and within the Lowell National Historical Park. This collaborative process included the design and construction of the Merrimack Riverwalk, the development of the Lowell Canal walkway system, future extension of the tourist trolley system, and planning for special events, such as the Lowell Folk Festival and Summer Concerts in the Park series. Most recently, NMMPO staff has been working the National Park Service and the City of Lowell on the design of the Pawtucket Falls Overlook, a pedestrian project located on the north bank of the Merrimack River adjacent to the VFW Highway. This facility will overlook the historic Pawtucket Dam and falls, which supplied the waterpower that led to development of textile mills in the City of Lowell and was ultimately responsible for the American Industrial Revolution.

CONCLUSION

Many of the above economic development initiatives have been discussed in greater detail in previous sections of this document. NMMPO staff will continue to work with its member communities to target the Opportunity Zones, Priority Development Areas, Economic Opportunity Areas, Priority Development Sites and other state and federally designated economic development areas for transportation infrastructure support. These transportation investments will provide direct connections between employment centers and employees, facilitate the delivery of goods and services, and allow businesses to efficiently transport their goods to market. NMCOCG and the NMMPO staff will build upon the corridor studies previously developed and identify community development and redevelopment

opportunities that enhance economic growth. Transit service in the region will continue to be examined to determine whether changes are needed to better serve the changing regional employment markets. Bicycle and pedestrian access to employment, educational, healthcare and recreational opportunities will be improved. Residents of multi-family and affordable housing in the region will be better connected with employment and educational opportunities in order to improve their economic condition and quality of life.