

## CHAPTER 3 TRANSPORTATION PLANNING PROCESS

Transportation planning is a collaborative process that involves government agencies, non-profit organizations, elected officials, advocacy and special interest groups, the business community and the public. Key transportation planning activities that are undertaken on an ongoing basis include the following:

- Monitoring existing operating conditions;
- Tracking demographic trends, including population, employment, income, race, age, gender and persons with special transportation needs;
- Identifying current and future transportation needs for all modes of transportation;
- Completing planning studies that analyze transportation problems and propose solutions;
- Developing capital improvement programs and operational strategies that address transportation needs;
- Assessing the impacts of transportation improvements on the environment and climate change;
- Evaluating transportation equity for low-income, Limited English Proficiency (LEP) and minority populations;
- Evaluating the public health and social impacts of transportation decisions, projects and priorities;
- Integrating local planning and economic development initiatives with the regional transportation planning process; and
- Soliciting public input throughout the planning process.

*The U.S. Department of Transportation (USDOT), Federal Highway Administration must certify that a 3C planning process is being carried out on all transportation projects receiving federal funding. Part of the certification involves the preparation of three documents: the Unified Planning Work Program (UPWP), the Long Range Regional Transportation Plan (RTP), and the Transportation Improvement Program (TIP). NMCOG staff carries out the administrative and technical functions related to the NMMPO.*

In metropolitan areas with more than 50,000 people, the Metropolitan Planning Organization (MPO) provides the forum for collaboration and decision-making on transportation issues. The Northern Middlesex Metropolitan Planning Organization (NMMPO) is the policymaking body for the Greater Lowell area, and is required by federal law to carry out a continuing, cooperative and comprehensive planning process that is called the 3C planning process. These three elements of the 3C planning process are described as follows:

- Continuing: Planning must be maintained as an ongoing activity and should address both short-term needs and the long-term vision for the region;

- Cooperative: The process must involve a wide variety of interested parties through a public participation process; and
- Comprehensive: The process must cover all transportation modes and be consistent with regional and local land use and economic development plans.

The membership of the NMMPO consists of the membership outlined in Figure 3.1. The Secretary of MassDOT acts as Chairman of the NMMPO. A copy of the region’s MPO Memorandum of Understanding (MOU) is included in Appendix D.

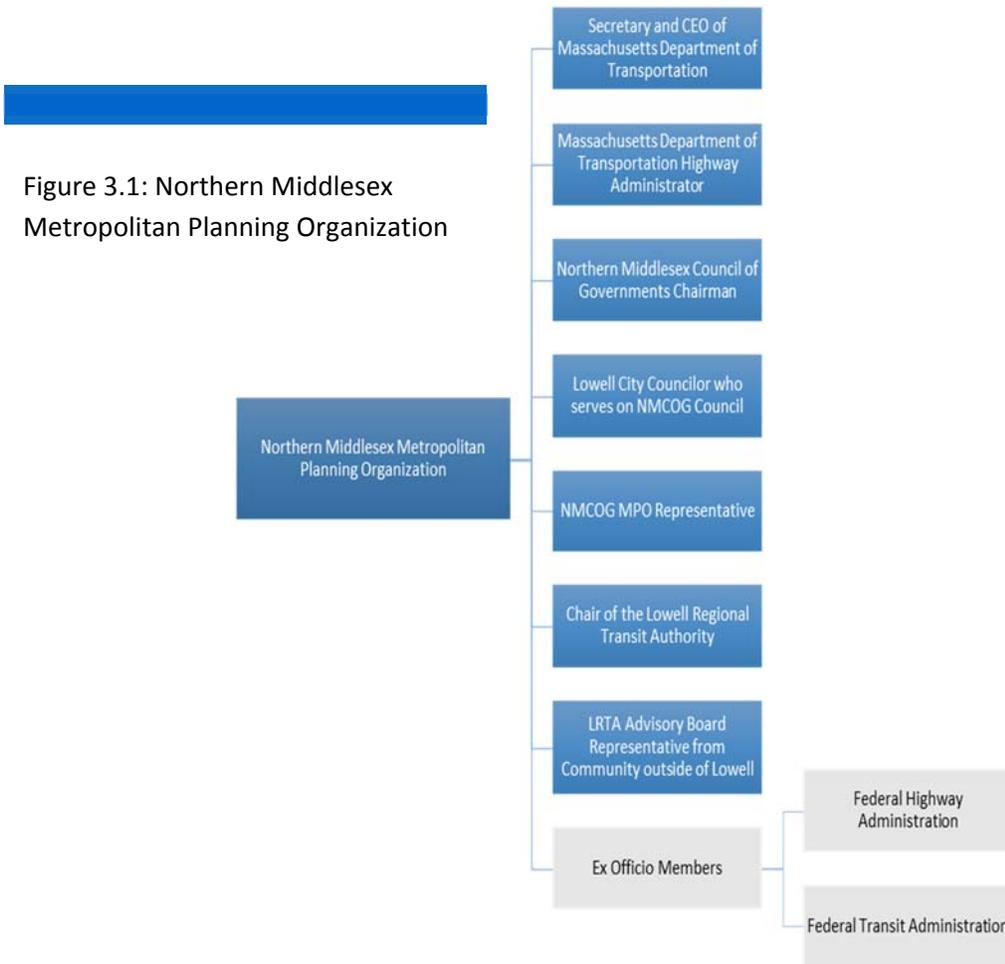


Figure 3.1: Northern Middlesex Metropolitan Planning Organization

## ROLES AND RESPONSIBILITIES OF PARTICIPATING AGENCIES

The following sections discuss the primary agencies involved in the transportation planning process for the Northern Middlesex region. These agencies comprise the NMMPO membership and function at the regional, state and federal levels of government to ensure that the transportation needs of the region are met for all modes of transportation.

### NORTHERN MIDDLESEX COUNCIL OF GOVERNMENTS

The Northern Middlesex Council of Governments (NMCOG) was created under Chapter 40B of the General Laws of Massachusetts and is one of thirteen regional planning agencies (RPAs) in the Commonwealth. NMCOG serves its member communities in an advisory capacity by studying and making recommendations regarding transportation, economic and community development, housing, land use, historic preservation, municipal service delivery, zoning, environmental and energy issues, and public safety. NMCOG's policy-making body, comprised of three members from each community (one Planning Board member, a Board of Selectmen member or City Councilor, and an alternate), provides local representation and policy guidance to the Council's staff of professional planners. The Council's planning district includes Billerica, Chelmsford, Dracut, Dunstable, Lowell, Pepperell, Tewksbury, Tyngsborough and Westford (see Map 1.1 on Page 1-3). NMCOG functions as the regional transportation planning agency for the Greater Lowell area and serves as technical staff to the NMMPO.



### LOWELL REGIONAL TRANSIT AUTHORITY

The Lowell Regional Transit Authority (LRTA) has statutory responsibility for providing mass transportation under the provisions of Chapter 161B of the Massachusetts General Laws. The LRTA service area includes the following communities: Acton, Billerica, Carlisle, Chelmsford, Dracut, Dunstable, Groton, Lowell, Maynard, Pepperell, Tewksbury, Townsend, Tyngsborough and Westford (see Map 6.1 in Chapter 6, page 6-3). A chief elected official or designee from each member community serves on the LRTA Advisory Board.



## MASSACHUSETTS DEPARTMENT OF TRANSPORTATION



In June 2009 Chapter 25 of the Acts of 2009, “An Act Modernizing the Transportation Systems of the Commonwealth of Massachusetts” was signed into law. The transportation reform legislation integrated all Massachusetts transportation agencies and authorities into a new MassDOT. A five-member Board of

Directors appointed by the Governor oversees the organization. MassDOT is administered by a Secretary of Transportation, who is appointed by the Governor to serve as the agency’s Chief Executive Officer. MassDOT is comprised of four divisions: Highway, Mass Transit, Aeronautics and the Registry of Motor Vehicles (RMV), in addition to an Office of Planning and Programming.

## FEDERAL HIGHWAY ADMINISTRATION AND FEDERAL TRANSIT ADMINISTRATION

An annual certification process through FHWA and FTA ensures that the State and the NMMPO are adhering to the 3C transportation planning process in accordance with federal requirements. Approval of federally-aided transportation projects requires the planning process to be “cooperative, comprehensive, and continuing.” As previously discussed, the Federal Highway Administration (FHWA) and Federal Transit Administration (FTA) are ex-officio non-voting members of the NMMPO.



## RELATIONSHIP BETWEEN THE RTP, TIP AND UPWP

The Regional Transportation Plan (RTP) is one of three federally required certification documents produced by the NMMPO. The other two documents are the Unified Planning Work Program (UPWP) and Transportation Improvement Program (TIP). The UPWP describes the planning studies and activities to be performed by the NMMPO each fiscal year. RTP projects and recommendations are often proposed as solutions to transportation problems or deficiencies identified through a study performed as part of the UPWP.

The Transportation Improvement Program (TIP) is a financially-constrained five-year listing of all federally-funded and regionally significant projects with the region. TIP projects must be drawn from a conforming RTP. In Massachusetts, the TIP is updated annually.

## STATE POLICIES

The 2009 restructuring of transportation agencies in Massachusetts led to a comprehensive re-evaluation of statewide policies and initiatives that impact transportation decision-making. The information below outlines the policy initiatives that have been implemented by MassDOT and other state agencies, such as the Executive Office of Energy and Environmental Affairs (EOEEA), the Executive Office of Health and Human Services (EOHHS), and the Executive Office of Housing and Economic Development (EOHED).

### WEMOVE MASSACHUSETTS INITIATIVE

In 2014, MassDOT released *weMove Massachusetts: Planning for Performance* (WMM), the Commonwealth's Long Range Transportation Plan. The Plan summarized MassDOT's new approach to multimodal capital planning and the use of scenario planning. WMM contains a Planning for Performance tool that incorporates important MassDOT policy initiatives, such as mode shift and sustainability, into the capital planning process. The tool can be used to calculate the performance outcomes resulting from different funding levels available to MassDOT. It also allows customers and stakeholders to understand the impacts of investment or disinvestment in the transportation system.

### MASSDOT CAPITAL INVESTMENT PLAN

The MassDOT Capital Investment Plan (CIP) is a five-year plan that outlines investments in the transportation infrastructure that serves residents and businesses across the Commonwealth. The CIP is funded from a mix of federal and state sources and investments are designed to address three priority areas: System Reliability; Asset Modernization; and Capacity Expansion. The Plan is developed annually in coordination with federal state, regional, and municipal partners, and with input from the public. It includes investments that improve reliability, safety and resiliency of the transportation system.

### REGIONAL PARTNERSHIPS

The Draft FFY 2020-2024 CIP includes investments of \$18.3 billion dollars in transportation improvement projects for both MassDOT and MBTA. The CIP identifies all sources of transportation funding available to Massachusetts, including federal funding through the metropolitan planning and process. The Northern Middlesex MPO programs federal funding through the Regional Transportation Plan (RTP) and the Transportation Improvement Program (TIP). The Northern Middlesex TIP programs projects in the Massachusetts Statewide Transportation Improvement Program (STIP), which directly feeds into the Capital Investment Plan. Projects recommended in this Regional Transportation Plan will likely be included as recommendations of the Capital Improvement Plan at some point in time. The FFY 2020-2024 CIP includes project recommendations for the first five years of the region's RTP, which also mirrors the FFY 2020-2024 TIP and STIP.

---

## MUNICIPAL PARTNERSHIPS

The 2020–2024 CIP includes several different programs that provide state and federal funds through either direct grants or reimbursements to cities and towns, and/or by leveraging private investment in support of economic growth. These programs and funding sources are described below:

- **Chapter 90** reflects the Administration's commitment to local transportation infrastructure for all 351 cities and towns across the Commonwealth. Chapter 90 funding is established by the Legislature on an annual basis and allocated by a legislatively established formula. The funding program reimburses cities and towns for costs incurred for eligible transportation infrastructure projects.
- The **Complete Streets Program** provides funding and technical assistance to communities that demonstrate a commitment to providing safe and accessible options for all modes of travel. There have been 198 approved Complete Streets policies approved, 146 technical assistance grants awarded, and 95 municipal projects approved as part of the program, since its launch in 2016. The 2020-2024 CIP estimates \$40.5 million in spending for this program over the five years.
- The **Municipal Small Bridge Program**, begun by the Baker-Polito Administration in SFY2017, assists municipalities in replacing and repairing town-owned bridges that are less than 20 feet long and are not eligible for federal funding. A total of \$42.5 million has been awarded for 91 municipal small bridge projects to date. The current CIP assumes \$56.2 million in spending over the next five years.
- A new grant program initiated in 2019, the **Workforce Transportation Options Program**, will be administered by the Rail and Transit Division. The program uses federal Congestion Mitigation Air Quality (CMAQ) funds to leverage private and other non-state funds to improve options for workforce transportation. This program replaces the Commonwealth's MassRides program, which ended on June 30, 2019. Approximately \$1.975 million is anticipated to be spent annually.
- Under the **Mobility Assistance Program**, state and federal funds are provided for the purchase of vans and related equipment to provide transportation services for elderly persons and individuals of all ages with disabilities. The program is administered by the Rail and Transit Division and uses funds provided through the regional Councils on Aging, the Regional Transit Authorities, and non-profit organizations. The CIP has assumed \$50.2 million in state and federal funds will be available to support this program.
- The **Industrial Rail Access Program** uses state funds to leverage private investment in private sector rail lines that will increase freight rail usage or that will modernize an active line to increase the utility of that line to customers. The Rail and Transit Division annually programs \$3 million (\$15 million over five years) to leverage private investment funds.

---

## GLOBAL WARMING SOLUTIONS ACT

The Global Warming Solutions Act (GWSA) of 2008 mandates the reduction of greenhouse gas (GHG) emissions to 80 percent below 1990 levels by 2050. It also requires the Secretary of Energy and Environmental Affairs to set a legally enforceable GHG emissions limit for 2020 of between 10 percent and 25 percent below 1990, and to issue a plan for achieving those reductions, while growing the clean energy economy.

The Commonwealth set the GHG emissions limit at the statutory maximum of 25 percent and released the *Clean Energy and Climate Plan for 2020*, which contained a portfolio of policies designed to meet the limit. The portfolio included established and new measures that reduce energy waste, save money, and stimulate the adoption of clean energy technologies, thereby creating jobs at the same time GHG emissions are being reduced. It estimated that 42,000 to 48,000 jobs will result from full implementation of the plan in 2020. As of 2018, 110,000 jobs were created in Massachusetts in the area of clean energy, far surpassing expectations.<sup>1</sup>

Massachusetts is a member of the Multi-state Zero Emission Vehicle (ZEV) Task Force and is committed to increasing the share of ZEVs in the Commonwealth. The Massachusetts Offers Rebates for Electric Vehicles (MOR-EV) program by the Department of Energy Resources (DOER) and the Clean Cities Coalition has issued or reserved over \$23 million in consumer rebates for over 11,000 ZEV purchases or leases since 2014. In December 2018, the MOR-EV program was extended through June 30, 2019 with additional funding to sustain this popular program. The Massachusetts Electric Vehicle Incentive Program (MassEVIP) through the Department of Environmental Protection (MassDEP) has given \$2.66 million to Massachusetts municipalities, state agencies, and public colleges and universities to acquire 267 electric vehicles and 92 publicly accessible charging stations, and \$1.35 million to employers to acquire 543 electric charging stations at 265 separate locations. The 15,111 electric vehicles registered in the Commonwealth as of September 2018 have resulted in net reductions of 33,150 metric tons of CO<sub>2</sub>e in 2018.<sup>2</sup>

The latest statewide GHG inventory by MassDEP shows that GHG emissions in 2016 were 21.4% below the 1990 baseline level. The decrease in GHG emissions comes despite a 13% growth in population and 24% growth in vehicle miles traveled (VMT). Significant GHG emissions reduction from the electric sector since 2005 has been a major contributor to the drop in gross GHG emissions, and vehicle standards have

---

<sup>1</sup> Global Warming Solutions Act: Ten-Year Progress Report, 2018, Executive Office of Energy and Environmental Affairs.

<sup>2</sup> <https://www.mass.gov/files/documents/2019/04/02/GWSA-10-Year-Progress-Report.pdf>

lowered the carbon intensity of each VMT while energy efficiency measures in buildings helped control energy demand despite increased economic growth and variable weather conditions.<sup>3</sup>

Massachusetts continues to be involved with regional and national organizations to address the issue of transportation GHG emissions. For example, the Transportation and Climate Initiative, a collaboration of transportation, energy, and environmental agencies from the Northeast and Mid-Atlantic states, seeks to develop the clean energy economy and reduce GHG emissions from the transportation sector. In December 2018, Massachusetts and other participating states and jurisdiction announced their agreement to work together over the course of 2019 to study the feasibility of a potential program that would reduce climate changing pollution from transportation, create economic opportunity, and improve transportation equity for currently underserved and overburdened populations. At the conclusion of the policy development process, all member states will decide whether to adopt and implement the policy.

---

## COMPREHENSIVE ENERGY PLAN

On September 16, 2016, Governor Baker issued Executive Order No. 569 Establishing an Integrated Climate Change Strategy for the Commonwealth. The Executive Order included a directive for the Secretary of EEA to publish “a comprehensive energy plan which shall include and be based upon reasonable projections of the Commonwealth’s energy demands for electricity, transportation, and thermal conditioning, and include strategies for meeting these demands in a regional context, prioritizing meeting energy demand through conservation, energy efficiency, and other demand-reduction resources in a manner that contributes to the Commonwealth meeting [GHG] limits.” The objective of the Comprehensive Energy Plan (CEP) is to analyze competing pathways going forward and to provide strategy recommendations for achieving a clean, affordable, resilient energy future for the Commonwealth.

The CEP Comprehensive Energy Plan was completed in 2018 and found that reductions of emissions from the use of gasoline and diesel in the transportation sector are needed to meet GWSA goals. The transportation sector is primarily dependent on consumer choices and remains highly dependent on fossil fuel to power vehicles. Emissions from the transportation sector have remained relatively similar to 1990 levels. The Plan puts forth recommendation for transportation electrification through increased deployment of EVs and charging infrastructure. It also suggests the development of a biofuels industry to provide alternative transportation fuels.

---

<sup>3</sup> Ibid.

## SUSTAINABLE DEVELOPMENT PRINCIPLES

The Commonwealth of Massachusetts has adopted ten sustainable development principles to care for the built and natural environment through integrated energy and environment, housing and economic development, and transportation policies, programs, investments, and regulations. The Commonwealth encourages the coordination and cooperation of all agencies in investing public funds in “smart growth” and equitable development, giving priority to investments that will create good jobs and wages and provide access to transit, housing and open space. Furthermore, the Commonwealth strives to advance these principles in partnership with regional and municipal governments, non-profit organizations, businesses and other stakeholders. The ten principles are listed in Table 3.1.

**Table 3.1: Sustainable Development Principles for the Commonwealth**

Sustainable Development Principles	Descriptions
<b>Concentrate Development and Mix Uses</b>	Support the revitalization of city and town centers and neighborhoods by promoting development that is compact, conserves land, protects historic resources, and integrates uses. Encourage remediation and reuse of existing sites, structures, and infrastructure rather than new construction in undeveloped areas. Create pedestrian friendly districts and neighborhoods that mix commercial, civic, cultural, educational, and recreational activities with open spaces and homes.
<b>Advance Equity</b>	Promote equitable sharing of the benefits and burdens of development. Provide technical and strategic support for inclusive community planning and decision-making to ensure social, economic, and environmental justice. Ensure that the interests of future generations are not compromised by today's decisions.
<b>Make Efficient Decisions</b>	Make regulatory and permitting processes for development clear, predictable, coordinated, and timely in accordance with smart growth and environmental stewardship.
<b>Protect Land and Ecosystems</b>	Protect and restore environmentally sensitive lands, natural resources, agricultural lands, critical habitats, wetlands and water resources, and cultural and historic landscapes. Increase the quantity, quality and accessibility of open spaces and recreational opportunities.
<b>Use Natural Resources Wisely</b>	Construct and promote developments, buildings, and infrastructure that conserve natural resources by reducing waste and pollution through efficient use of land, energy, water, and materials.
<b>Expand Housing Opportunities</b>	Support the construction and rehabilitation of homes to meet the needs of people of all abilities, income levels, and household types. Build homes near jobs, transit, and where services are available. Foster the development of housing, particularly multifamily and smaller single-family homes, in a way that is compatible with a community's character and vision and with providing new housing choices for people of all means.

**Table 3.1: Sustainable Development Principles for the Commonwealth**

Sustainable Development Principles	Descriptions
<b>Provide Transportation Choice</b>	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 transportation infrastructure that supports sound economic development consistent with smart growth objectives.
<b>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.
<b>Promote Clean Energy</b>	Maximize energy efficiency and renewable energy opportunities. Support energy conservation strategies, local clean power generation, distributed generation technologies, and innovative industries. Reduce greenhouse gas emissions and consumption of fossil fuels.
<b>Plan Regionally</b>	Support the development and implementation of local and regional state and interstate plans that have broad public support and are consistent with these principles. Foster development projects, land and water conservation, transportation and housing that have a regional or multi-community benefit. Consider the long-term costs and benefits to the Commonwealth.

Source: Massachusetts Executive Office of Energy and Environment

## THE HEALTHY TRANSPORTATION COMPACT

The Healthy Transportation Compact is an interagency initiative whose members include the Secretaries of Transportation, Health and Human Services, and Energy and Environmental Affairs, as well as the MassDOT Highway and Transit Administrators, and the Commissioner of Public Health. As a key requirement of the 2009 transportation reform legislation, the Compact is designed to facilitate transportation decisions that balance the needs of all transportation users, expand mobility, improve public health, support a cleaner environment and create stronger communities.

The Compact focuses on the following tasks:

- Promote interagency cooperation to implement state and federal policies and programs;
- Reduce greenhouse gas emissions, improve access to services for persons with mobility limitations and increase opportunities for physical activities;
- Increase bicycle and pedestrian travel and facilitate implementation of the Bay State Greenway Network;

- Work with the Massachusetts Bicycle and Pedestrian Advisory Board (MABPAB) to effectively implement a policy of complete streets for all users, consistent with the current edition of the Project Development and Design Guide;
- Implement health impact assessments for use by planners, transportation administrators, public health administrators and developers;
- Expand service offerings for the Safe Routes to School program;
- Initiate public-private partnerships that support healthy transportation with private and non-profit institutions;
- Establish an advisory council with private and non-profit advocacy; and
- Develop goals for the Compact and measure progress toward these goals.

---

## MASS IN MOTION

Mass in Motion is a program administered by the Executive Office of Health and Human Services (EOHHS) that promotes wellness by stressing the importance of sound nutrition and physical activity. The program awards grants to communities to undertake wellness initiatives through measures such as developing policies and regulations that support nutrition and physical activity, creating a healthier environment for residents, and working with schools to promote a healthier lifestyle for youth.

## REGIONAL PLANS AND POLICIES

Transportation issues are regional in nature and cannot always be addressed by a single jurisdiction. The development of the Regional Transportation Plan has considered the policy recommendations and projects outlined in the region's primary planning documents, including the *Regional Strategic Plan for Greater Lowell*, the *Greater Lowell Comprehensive Economic Development Strategy*, and the region's *Hazard Mitigation Plan*.

---

## REGIONAL STRATEGIC PLAN

In 2011, NMCOG adopted the *Regional Strategic Plan for Greater Lowell*, utilizing funding provided by the Executive Office of Housing and Economic Development. The Regional Strategic Plan (RSP) assists NMCOG and its member communities in planning for future development initiatives and for the preservation of important natural resources and open space. The RSP offers recommendations relative to housing, economic development and the protection of open space and environmentally sensitive resource areas. The RSP focuses on smart growth and sustainable development principles that promote compact growth in those areas with available infrastructure, and which foster the protection and preservation of the region's most valuable environmental and cultural resources. The Plan identifies locations in each community where growth is appropriate based on zoning, infrastructure, access and environmental impacts.

The goals of the RSP are outlined below and the Regional Transportation Plan has been developed to ensure consistency with these goals:

### LAND USE GOALS

---

- Use land efficiently and protect sensitive resource areas by directing growth to priority development areas and locations with adequate infrastructure;
- Support the transformation of key underutilized lands, such as “brownfields”, to productive uses that complement the community and enhance existing neighborhoods;
- Incentivize redevelopment activities through land use tools, streamlined permitting and economic incentives;
- Minimize the environmental impact of future development by encouraging mixed-use and compact development patterns, and by promoting the use of low impact development techniques; and
- Use capital facilities and infrastructure efficiently and in a manner that is consistent with the region’s natural features, respectful of the character of its communities and neighborhoods, and that builds upon the economic strengths of each community.

### ECONOMIC DEVELOPMENT GOALS

---

- 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;
- 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;
- Utilize a combination of economic development and redevelopment strategies that reflects the character of each community and address infrastructure barriers (roads, wastewater capacity, telecommunications, etc) to future economic growth; and
- Increase the supply of skilled workers for industry in the region through the integration of economic development and workforce development strategies.

### HOUSING GOALS

---

- 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;
- Encourage mixed-use development that ties together residential and commercial uses in city and town centers and mill districts throughout the region;

- Increase housing options available to families, young couples, single adults, seniors, artists, students, the disabled, veterans, and other groups so that they may live and work in the Greater Lowell region;
- Address expiring affordability restrictions<sup>4</sup> as a means of maintaining the region's stock of affordable housing; and
- Encourage the location of future housing in areas served by public transit.

#### NATURAL, CULTURAL AND ENVIRONMENTAL RESOURCES GOALS

---

- Care for the natural environment by protecting and restoring natural systems, conserving habitat, improving water quality, and reducing air pollution, thereby ensuring that all residents, regardless of social and economic status, live in a healthy environment;
- Promote the use of innovative, environmentally-sensitive development practices, including design, materials, construction, and on-going maintenance;
- Encourage the use of low impact development techniques and other best management practices (BMPs) for managing stormwater;
- Preserve, protect and enhance the region's remaining agricultural lands;
- Support agricultural, farmland and aquatic uses that enhance the local food system and increase its capacity to produce fresh and minimally processed foods;
- Preserve significant historic, visual and cultural resources, including public views, landmarks, archaeological sites, historic and cultural landscapes, and areas of special character;
- Improve public access to the region's waterways, water bodies and open spaces; and
- Promote the production and use of alternative energy.

#### GREATER LOWELL COMPREHENSIVE ECONOMIC DEVELOPMENT STRATEGY

---

In 2014, NMCOG adopted the *Greater Lowell Comprehensive Economic Development Strategy (CEDS) Update for 2010-2013*. This document built upon previous five-year economic development "blueprints" for the Greater Lowell region. The 2010-2013 CEDS Update included Comprehensive Needs Analysis, Vision, Action Plan and Evaluation sections required by the Economic Development Administration (EDA) of the U.S. Department of Commerce (DOC). The CEDS provided new information regarding current economic conditions, past activities in terms of project development, goal attainment and capacity building, a revised project priority list and new activities for the next program year.

---

<sup>4</sup> Affordability restrictions are often established for 15-30 years and expire over time.

The connection between transportation and economic development is woven throughout the 2010-2013 CEDS Update. A discussion of topics such as alternative transportation modes and facilities, such as bicycle and pedestrian paths, and environmental issues, such as air quality, closely ties the CEDS to the RTP and TIP. In addition, many of the TIP projects are included on the CEDS Priority Project List. The transportation projects listed in the CEDS are essential to upgrading the infrastructure in the region, in order to encourage economic growth and the maintenance of the region's quality of life. The Evaluation section outlines the criteria by which progress on the CEDS "grass-roots" planning process, goal attainment and project development will be assessed on a qualitative and quantitative basis.

NMCOG recently received a grant from the Economic Development Administration of the U.S. Department of Commerce to develop the 2019-2022 CEDS. With each new CEDS document, NMCOG strives to integrate the transportation and economic development planning processes, to identify and promote regional economic development and transportation projects, and to support local economic development and transportation initiatives. These efforts have resulted in the creative use of the limited federal, state, local and private funding sources to further the economic development and transportation goals and objectives for the region.

---

#### HAZARD MITIGATION PLAN FOR THE NORTHERN MIDDLESEX REGION

The development of a regional mitigation plan before disaster strikes results in the most efficient and effective means of reducing the loss of life and property. Mitigation helps to minimize or prevent damage to structures, infrastructure, and other resources. The regional nature of the Plan helps to ensure that mitigation initiatives, measures and strategies are coordinated across municipal boundaries. Ultimately, such regional integration improves the ability of the local communities to implement post-disaster recovery projects in a cooperative and coordinated manner.

The *Hazard Mitigation Plan for the Northern Middlesex Region* identifies several mitigation projects that are transportation-related, such as the reconstruction of structurally deficient bridges, traffic improvements along evacuation routes and near critical facilities, and improvements to reduce roadway flooding. It is important that the RTP consider the Hazard Mitigation Plan recommendations in order to protect the region's residents and infrastructure in the event of a natural disaster.

NMCOG prepared the 2015 *Hazard Mitigation Plan*, which contains an inventory and assessment of natural hazard risks, a vulnerability analysis based on the geographic location of critical infrastructure and facilities, and an existing protection matrix for the region and its nine member communities. This Plan takes into account the potential impacts of climate change. Through discussions with local officials and the region's Multi Hazard Community Planning Team, a list of hazard mitigation actions and projects has

been developed for future implementation. The Plan was approved for a five-year period and will need to be updated in 2020.

## LOCAL PLANS AND POLICIES

Data and project information used to develop the Regional Transportation Plan was drawn from municipal Master Plans, Open Space and Recreation Plans, GIS sources, Housing Production Plans, local bylaws and ordinances, the UMass Lowell Transportation Master Plan and local Economic Development Plans and Strategies. The primary purpose of transportation is to move people and goods from one place to another, but transportation systems also affect community character, the natural and human environment, and economic development patterns. A transportation system can improve the economy, shape development patterns, and influence quality of life and the natural environment.

Development density and location influences the regional travel patterns, and access to the transportation system can influence land use and development trends. For example, a connected system of streets in an area with high residential densities and a mix of land uses can facilitate pedestrian and bicycle travel, and provide the critical population threshold needed to efficiently operate public transportation. However, low-density dispersed land use patterns can encourage travel by single-occupancy vehicles.

The projects and policies set forth in the Regional Transportation Plan have been reviewed for consistency with goals and recommendations established in local plans and policy documents, as described above. The NMMPO and the local communities have a shared interest in managing the region's transportation resources and promoting livable communities.