

# 2016 CEDS

COMPREHENSIVE ECONOMIC DEVELOPMENT STRATEGY





## Our Region's Values:

Invest in Place

Invest in People

Invest in Business &  
Industry

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# Introduction

Since its inception in 1967, Eastern Maine Development Corporation (EMDC) has provided economic development strategies for Penobscot, Piscataquis, Waldo, and Hancock Counties of Maine. Through strategic planning, workforce development, and capital management, EMDC has evolved to its current status as a non-profit organization dedicated to helping Maine on the pathway to economic prosperity.

Home to 264,273 residents (estimated 2015 US Census Data), the EMDC region contains 20% of Maine's population and approximately 20% of Maine's jobs as of May 2016. As the designated administrator of the Eastern Maine Economic Development District, EMDC must regularly develop and publish a Comprehensive Economic Development Strategy (CEDS) for its region. The CEDS relies on the input and support from EMDC's regional partners representing both the public and private sectors.

In large part, the data in this CEDS report was collected through EMDC's "Re-Engineering the Region" effort. Through an investment by the U.S. Department of Commerce, Economic Development Administration (EDA) in 2014, EMDC led a short-term strategic planning project with the goal of developing a blueprint focused on rebuilding our region and spurring economic growth following the massive layoffs and closures of paper mills, manufacturing, and negative supply chain business impacts.

Through this effort, the Re-Engineering the Region work consisted of the following components:

- Comprehensive supply chain analysis performed by Camoin Associates
- Workforce analysis performed by EMDC
- Community-based advisory meetings
- 100+ interviews with regional businesses
- Targeted industry-specific focus groups
- Public forums with community stakeholders representing both public and private sectors.

Many promising opportunities emerged as well as potential barriers to growth that need to be addressed. The prospects described within this report are only a few of many bright spots that EMDC and its partner organizations have uncovered over the past 24 months. The CEDS will become our roadmap to guide our diverse strategies as we work to revitalize Eastern Maine.

# Eastern Maine: By The Numbers

	Maine	EDD	Hancock	Penobscot	Piscataquis	Waldo
<b>*Population (2015)</b>	1,329,328	264,273	54,659	152,692	16,931	39,155
<i>% Change from 2010</i>	0.1%	-2.8	0.4	-0.8	-3.4	1.0
<b>% 18-64 (est. avail. labor mkt)</b>	61.9	64.0	60.0	64.3	41.6	62.8
<i>% Change from 2010</i>	-1.5	-1.07	-3.0	-1.7	-2.1	2.5

<b>Labor Force</b>						
Labor Participation 2016**	668,800	130,060	29,410	73,150	7,250	20,250
2015 Labor Participation	661,992	129,061	28,997	73,142	7,159	19,763
Avg Monthly Wage – 2015#		\$34,398	\$34,736	\$38,012	\$30,368	\$34,476
2013 Avg Monthly Wage		\$33,033	\$33,800	\$36,244	\$29,224	\$32,864
Total Wages – 2015#		\$993,819,673	\$193,240,814	\$661,029,509	\$41,882,045	\$97,667,305
2013 Total Wages		\$945,481,382	\$187,558,648	\$626,452,033	\$40,435,657	\$91,035,044
<i>% Change</i>			1.0	0.95	0.96	0.93
Unemployed**	25,400	5,580	1,120	3,290	360	810
2015 Unemployed	29,231	6,380	1,385	3,584	416	995
% Unemployment Rate**	3.7	4.13	3.7	4.3	4.7	3.8
2015 Unemployment Rate	4.2	4.9	4.6	4.7	5.5	4.8
<i>% Change</i>	-0.5	-0.78	-0.9	-0.4	-0.8	-1.0

<b>Income &amp; Poverty</b>						
Per Capita Income (2014)	\$27,332	\$24,670	\$28,077	\$24,076	\$22,796	\$23,729
Median Household Income	\$48,804	\$42,721	\$45,747	\$44,543	\$37,110	\$43,484
% Persons in Poverty	14.1	16.6	12.9	18.0	20.3	15.0

<b>Economic</b>						
GDP						

<b>Housing</b>						
Median Value of Owner-Occupied housing (2010-2014)	\$173,600	\$149,700	\$197,800	\$137,700	\$107,300	\$156,000
Housing Units (2015)	729,413	152,190	40,582	74,331	15,429	21,848

<b>Education (2015)</b>						
% High School Graduate or Higher	91.3	91.3	93.4	90.7	89.0	91.9
% Bachelor's Degree or Higher	28.4	26.0	32.6	24.2	18.2	29.0
Number of Higher Ed Institutions	37	9	2	6	0	1
# of students graduating from higher education (2015)						

## Resources

\*United States Census/American Factfinder

\*\*monthly not seasonally adjusted county estimates, Department of Labor 2016 & 2015

#Quarterly and Annual Industry Employment and Wages, Department of Labor 2015 & 2013

Eastern Maine has experienced a slight decline in population since 2010. The region also has on average a slightly higher unemployment rate by county (although some communities directly impacted by manufacturing/paper mill closures are considerably higher), but has seen a slight lowering of unemployment since 2015. The median household income recorded in 2014 is lower than the State, and a higher number of Eastern Maine residents are living in poverty.

It's not all bad news. There are bright spots to note; high on the list is the abundance of education and training opportunities in this region. Twenty-four percent of the State's institutions of higher learning are located in the Eastern Maine region representing more



than 20,000 students annually. With an average of 30 students per square mile within a 15 mile radius of Bangor, this translates into the highest concentration of students in Maine. Opportunities for continuing education beyond

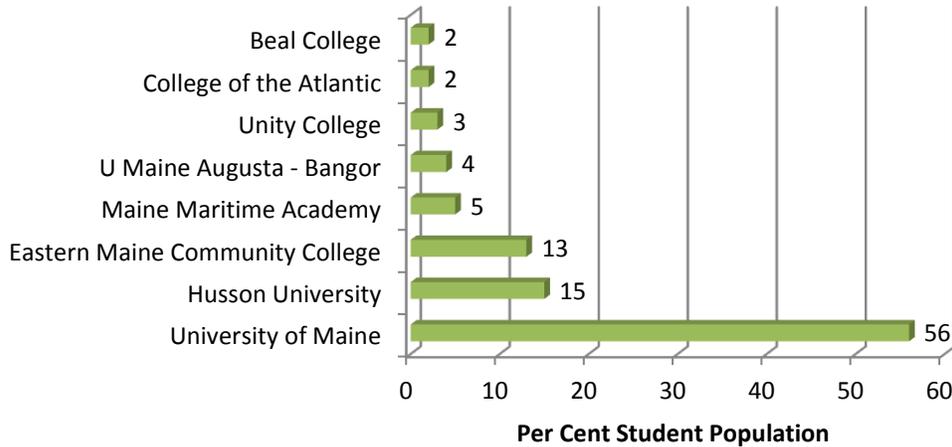


attainment of a high school diploma exist within the private and public college systems, community college system, and multiple

technical and adult education venues. Eastern Maine needs to capitalize on its educational assets and promote a brand of “Lifelong, Continuous Learning for an Adaptive Region.”

Collaborative efforts are focused on building an education and training platform that is nimble to economic changes and business needs, putting displaced workers back to work, providing possibilities for incumbent workers to expand their expertise and rise within career ladders, and attract and keep our graduating students in the area by providing access to jobs that pay livable wages and are true career opportunities.

## 2015 Student Population - Eastern Maine (est. 20,000)



## Regional Vision

In 2014, EMDC worked in conjunction with Mobilize Eastern Maine to outline an economic Vision that identified goals to be met by 2020. The goals were as follows:

- By 2020, we will ensure the region's economy grows so that the people who live here enjoy a median household income greater than or equal to the national average.
- We will transform the region's economy by building on our strengths in forest products, tourism, education and small business innovation and by capturing new opportunities in bioscience, business conferencing, and advanced manufacturing.
- Among the many ways we will support these efforts is to invest in high quality data transmission, transportation, education and workforce development.
- By working with one another, our region's economy will be innovative, vibrant and sustainable, fostering a diverse and collaborative community where people young and old choose to live, work and play.

Since then, an EDA-sponsored short-term strategic planning effort was completed which critically assessed this region's opportunities, weakness, barriers, and weak signals (opportunities not yet identified as trends). This expanded SWOT analysis resulted in a reappraisal of our goals. We have not abandoned the original goals created through Mobilize Eastern Maine; rather, we continue to refine them as our region experiences economic downturns and uncovers emerging opportunities.

Through this work, a new Vision has emerged –

*Improve economic opportunity and increased wealth for the EMDC region's communities, businesses and individuals*

This vision will be supported in part through a focus on key concepts:

- The forest products economy has been and continues to be an important part of the economy in the Eastern Maine Region and there is still value in the forest and demand for wood, opportunities in industries related to the forest economy and within the forest economy supply chain.



- There are emerging opportunities across sectors in which the region has assets that can be leveraged to grow the economy including: Bioscience/Healthcare, Education, Emerging Technology, Tourism/Hospitality, Forestry/Wood Products, Composites and Boat Building, Construction/Skilled Trades, and Agriculture/Food Production sectors.
- Sustainability and growth of business hinges on addressing skilled and ready workforce needs and logistics, both broadband and transportation.
- We need to think BIG. Leveraging the assets to grow the regional economy will require a reset of the economic, workforce, and community development system. **Small changes, marginal**

improvements, and tinkering at the edges will not suffice. New vision to think big, coupled with new culture to build capacity for regional transformation, into a new systems approach is needed to leverage emerging opportunities.

- Our region needs to advance a shared goal of collaboration and strategic visioning as a process to identify existing and emerging opportunities for growth and diversification, eliminating the historic impacts felt by an economy built around one major industry. The Re-Engineering the Region economic strategy has become a regional “call to action”, informing and engaging public and private stakeholders through a variety of action-driven, shared objectives. This economic resiliency plan, launched in 2014 as a result of the rail disaster and loss of paper mills, will support ongoing analyses to uncover emerging negative trends and set actions in motion to minimize impacts.

A reset of systems is a major undertaking and requires a framework to effectively guide and align future efforts. There are key components that cut across emerging opportunities and are critical to the success of transforming the regional economy. They are:

- Capitalizing on Education Assets and Creating a Continuous Learning Region – Lifelong, Continuous Learning for an Adaptive Region
- Strengthening infrastructure and culture to create “A Digital Region for the Emerging Economy”
- Enhancing an Innovative and Entrepreneurial Region for Starting and Growing Businesses and an Entrepreneurial Workforce
- The Handshake: Woods Industry, Hospitality and Recreation

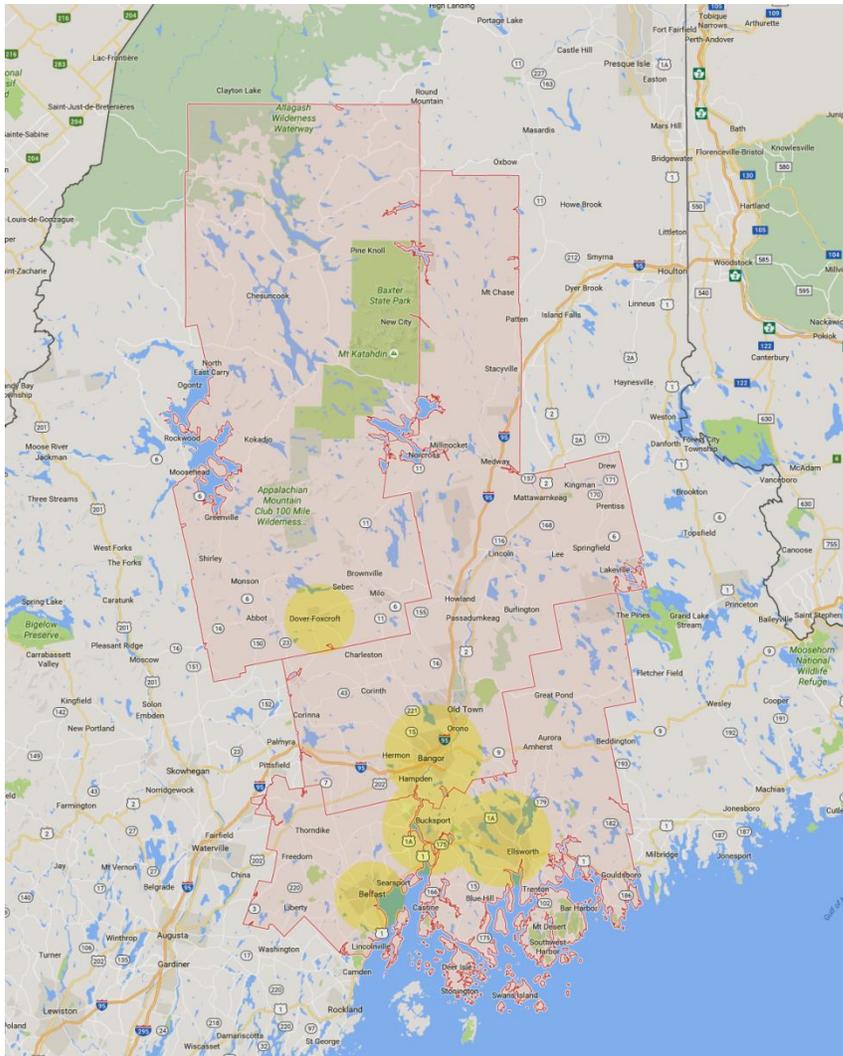
# Resetting Regional Goals

In 2008, Mobilize Eastern Maine identified metrics to serve as benchmarks for assessing this region's economic growth and achievements; our success was measured by evaluating progress toward attaining the goals. Progress to 2015 is indicated. It's important to note that these goals were created for the Greater Bangor region footprint which is comprised of 21 smaller communities surrounding the twin cities of Bangor and Brewer.

	Baseline	Progress		GOAL	
	2008	2010 Change		2015	Change
Population	148,651	153,849	3.50%	159,057 ↑	7.00%
Employable Population, 18 + yrs	118,553	123,283	3.99%	124,481 ↑	5.00%
Labor Participation Rate	66.40%	64.20%	-3.31%	69.05% ↑	1.04%
Total Employed	76,710	74,367	-3.05%	83,921 ↑	9.40%
Average Wage	\$34,700	\$35,860	3.34%	\$48,198 ↑	38.90%
Total Region Wages	\$2,673,843,000	\$2,647,221,000	-1.00%	4,085,632,104 ↑	52.80%
Per Capita Income	\$21,947	\$22,262	1.44%	\$34,018 ↑	55.00%
Regional GDP	\$5,322,000,000	\$5,518,000,000	3.68%	8,089,440,000 ↑	52.00%
Internet Subscriptions	65.11%	70.47%	8.23%	97.60% ↑	50.00%
Bachelors Degrees 25 and Older	22,012	24,936	13.28%	29,716 ↑	35.00%
<b>Regional Specific Goals</b>					
17-24 year old w/o HS Diploma	8.50%	10.50%	43.02%	6.37% ↓	25.00%
20-44 population	49,777	50,846	2.15%	57,244 ↑	15.00%
Associates Degrees 25 and Older	9,332	10,347	10.87%	13,620 ↑	46.00%



As the Bangor-centric economic development work progressed into the Re-Engineering the Region which is comprised of a four-county region, it became clear that the goals needed to be updated to reflect the entire EMDC service area as noted in the following map. The regions highlighted in pink identify our four counties.



With a total population of 264,273 (2015), the economic development district of Eastern Maine is large but sparsely populated. The map above identifies the primary population hubs of Bangor/Brewer, Ellsworth, Bucksport, Belfast, and Dover-Foxcroft (shaded in yellow). The final population center of Orono, while not large in numbers, is the home of the University of Maine which in itself is a major

population center with more than 11,000 students annually. Any population growth in the coming years will likely occur around these service centers and employment hub communities. Realistically, major population growth is not anticipated in the next five years.

## 2016 Regional Goals

Because of the expanded regional scope, our Regional Goals will be reset to measure economic revitalization in the four-county region. Our progress will be measured by comparing the identified baseline data points (2016) offered below to goals to be set for 2025. Over the next year, a “regional goals” committee comprised of EMDC staff, EMDC board, and stakeholders will work to identify goals that will represent progress to regional prosperity.

	<b>Baseline 2016</b>
Population	264,338
Employable Population, 16 yrs or older	220,571
Labor Participation Rate	61.05%
Total Employed	136,201
Average Wage	\$42,721
Total Region Wages	\$4,272,967,200
Per Capita Income	\$24,670
Maine GDP	\$5,600,000,000
Bachelors Degrees	
25 and Older	38,588
18-24 year old w/o HS Diploma	2,688
20-44 population	79,615
Associates Degrees	
25 and Older	46,229

## Sense of Urgency

The region of Eastern Maine which includes Hancock, Penobscot, Piscataquis, and Waldo counties is comprised of more than 11,310 square miles of rural communities and country. The region is characterized by sparsely populated communities spread across a wide geographic range, and one that has been decimated in recent years by the massive closure of manufacturing and paper mills. The downturn in manufacturing and additional setbacks of supply chain, value-added jobs has led to a loss of more than 2,000 jobs over the last 3 years. These were good paying jobs that will not be returning. A report published in April 2016 from Camoin Associates reported that the EMDC region demonstrated high levels of distress across all indicators (individuals in poverty, growth in the percentage of people without health insurance, renter housing costs as a percentage of household income, job losses both overall and in timber-related industries, unemployment rate, percentage of people who did not work, median household income, and individuals receiving public assistance). **The region lost 14% jobs in timber-related industries between 2010 and 2015, compared to a 7% gain in the U.S. overall.**

The East Millinocket and Lincoln communities were the hardest hit by timber industry job losses, with 90% and 60% jobs losses recorded respectively between 2010 and 2015. The jobs lost from the paper mills and other manufacturing entities accounts for an *estimated 23% loss of all manufacturing jobs in the*

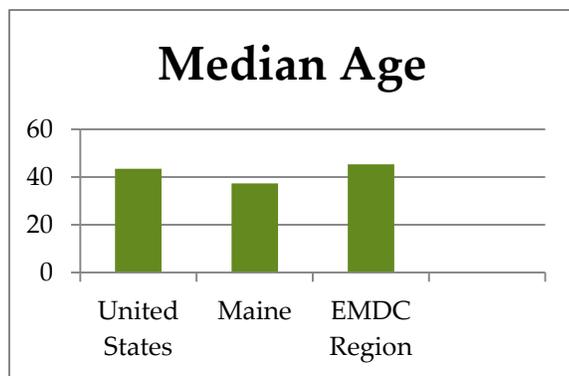


*region and a loss in earnings of \$208,234,988 from these direct and indirect jobs.* With continued contractions of the wood and paper industries, levels of distress can only be expected to rise. It is also clear that the region's historical industries will not regain a footing in our region to employ workers and retain populations. A strategic effort

is needed to identify future growth opportunities and address inherent barriers. This effort must include a thoughtful strategy that supports a diversification of economic markets beyond wood products and forestry, yet at the same time acknowledges that our forests and wood remains a critical asset for the region.

Another result of these job losses is the out-migration of the employable population leaving the Eastern Maine region to find jobs elsewhere. A recent study performed by The Pew Charitable Trust (2015) notes that one of the root causes for migration trends can be attributed to economic distresses such as that seen in timber-dependent counties hit hard by the decreased need for paper in an electronic, digital information age. This rural flight strains local municipal government impacted by a reduced tax base, remaining businesses lacking access to skilled workers, communities accumulating foreclosed/abandoned/deteriorating properties, and a reduction in annual household incomes because of reduced pay.

Compounding the out-migration is the aging of our population. Maine is the oldest state in the nation with a median age of 43.5 compared to 37.4 for the U.S. (American Factfinder, 2014); that number



increases to 45.4 in the four-county region of Eastern Maine. The aging of our current workforce coupled with Maine's low birth rate (10.2 Maine vs. 13.5 U.S., number of live births per 1,000 women, 2009) sets the stage for a reduced capacity for population growth (Maine Population Outlook to 2030, February 2013). Aggressive

measures are needed to reverse current trends as Maine's median age is projected to continue rising and declining population will be experienced. Focused training and education to build a new workforce to fill vacated positions as well as efforts to attract and retain a younger workforce in this region is a high priority to support economic growth.

Additional obstacles to business growth were identified through the Re-Engineering the Region business interview effort. These are experienced not only in Eastern Maine but by other regions of Maine as well. Many of these concerns are identified throughout this CEDS plan along with strategies to address them:

- High (or perceived high) energy cost of doing business

- Deficit digital infrastructure
- Remoteness of many rural businesses
- Low population of customers
- Poor roads and transportation infrastructure
- Lack of collaboration between businesses

Despite our challenges, Eastern Maine has been “mobilized” to uncover new opportunities through four identified regional approaches:

- Diversity – of people, ideas, networks, initiatives, and economic base
- Adaptability – continual learning, innovation, and re-engineering
- Sustainability – steady commitment continued over the long-term
- Collaboration – build and expand partnership platforms

An important note about diversity of people – Eastern Maine is recognizing that efforts to welcome and accept a more racially and ethnically diverse population will be critical to enhance our workforce efforts. Maine has a low birth rate and, given our aging population, that trend is unlikely to be reversed soon. Many of the young people that are born here are leaving. These statewide problems are more extreme in Northern and Eastern Maine than in Southern Maine. Penobscot and adjacent counties are projected to lose over 5,000 people between 2010 and 2020, and the working age population is decreasing disproportionately. A culturally rich and more diverse region is also more likely to retain a higher percentage of young Mainers and attract more American-born working-age people “from away” who may seek a small but safe and energetic home. (Maine Global Culture & Economic Center, Sean Faircloth)

Efforts such as the Maine Global Culture & Economic Center will be promoted in Eastern Maine to attract and support all people coming to Maine from around the world, celebrating diverse cultures.

Throughout the strategic planning process, an effort was made to assess our alignment with other local, regional and state-wide efforts such as FocusMaine, a Southern Maine-based economic strategy looking

to develop 2-3 vibrant and resilient “signature industries” to accelerate business development (<http://focusmaine.org/purpose>) and the 2016 Measures of Growth, a visionary study promoting high quality of life for all Maine people by focusing on the economy, communities, and the environment. These efforts share a common goal with the Re-Engineering the Region work – to assess, identify and build on the strengths and opportunities of the given region to lead to economic prosperity.

This CEDS highlights how the region can grow by pairing existing assets and infrastructure with unique ideas of how Eastern Maine can compete globally through specialization and highly skilled labor.

## Six Drivers of Growth and Prosperity

Much of this region’s economic history has been defined by one major industry – paper production. The downturn of that industry has left many in our region without jobs, changed the landscape for supply chain value-added businesses, and forced our region to think about how to uncover opportunities that will lead to better lives for all our residents.

Through the Re-Engineering the Region effort, our region has identified cross-cutting strategies that we believe can grow our economy for years to come. Our work moving forward will focus on developing ways to implement these strategies efficiently and effectively. The strategies include:

1. Advancing Our Region’s Learning Economy
  - a. Ensure that students, colleges, and universities are aware of our employer’s workforce needs.
  - b. Establish a funding program to incentivize businesses to hire interns, encourage entrepreneurship and hone professional skills.

2. Expand Broadband Connectivity to 16 Targeted Communities

a. Pursue EDA, SBA, Maine DECD, and tax-exempt municipal bond measures to fund broadband expansion at an estimated \$5 million cost.



b. Engage municipal leaders, representatives, and administrators in an aggressive informational campaign to garner their support.

3. Push Innovation and Entrepreneurship in the Region

a. Use EMDC’s resources to keep in constant contact with identified cluster leaders and secure capital investments for promising opportunities when they appear.

b. Collaborate with research institutions such as the University of Maine and the Jackson Laboratory to expand our discovery-driven economy.

c. Recognize that we can create an entrepreneurial Garden of Eden using the existing assets within our region.

4. Build a Regional Resources Council

a. Establish a council populated by chambers of commerce, business leaders, young professionals, and so-called “movers and shakers” in our region.

b. Use this council to leverage local, national, and global development projects towards implementation.

Through our focus on the industry sectors and cross-cutting strategies, Eastern Maine will be well-positioned to address six major economic drivers that will help secure economic success moving forward.

***Asset Based Industry Development***

The Re-Engineering the Region’s extensive examination of Eastern Maine through “advisory” community-based meetings, extensive data mining, more than 100 business interviews across multiple industries, industry-focused roundtable conversations, and public forums resulted in the identification of Sectors of Impact that represent opportunities moving forward. Seven Sectors were selected:

- Forest & Wood Products
- Tourism & Hospitality
- Bioscience & Healthcare
- Agriculture & Food Production
- Emerging Technologies
- Construction & Boat Building

Since completion of the Re-Engineering strategic planning, additional research and discussion has led to a further collapse of the sectors into five key Assets for Opportunity which we believe will effectively energize our region as we create a new culture that will leverage emerging opportunities to a true transformation of our economy. Each is identified along with examples of strengths and emerging opportunities:

1. Natural Resource Asset Base (Agriculture, Aquaculture, Forestry & Value-Added Production)

- Maine has more than 8,000 farms, 1.45 million acres of farmland and is home to the largest agricultural economy in New England.
- The value of Maine agriculture is broad – food agriculture, non-food agriculture (equine, horticulture), food processing, and aquaculture.
- Since 2007, Maine has increased value by 24%, added 1,100 farms, experienced a 29% growth in full-time jobs, grew young farmers by 40%, and saw Maine food and beverage manufacturing businesses increase by 13% between 2010 and 2012. Growth has been noted in value-added products including potatoes, dairy, blueberries, aquaculture, and brown eggs.
- Maine’s geography supports an inherent advantage because of available land, access to markets, abundant water, and the favorable perception of the Maine brand. Maine is second in the nation for local food product.
- Aquaculture is a growing commodity, with new technologies and research supporting an increase in aquaculture and marine capacity, optimization of seaweed culture methods, and expansion of coastal and inland harvesting.
- Logging is a lifestyle business, and Maine woods’ culture is woven into the workplace.



- Maine’s forest is unique and not a monoculture. Our forest is a renewable asset. Re-use and specialization will be important; we need to tailor our forest management techniques to include low quality trees (low quality is not low value and serves an important role).
- Research plays a key role, and new product development, reuse of wood/fiber/chemicals, and identification of niche markets will be critical.
- As we look beyond printing and writing paper, we need to build on emerging opportunities including bio-based manufacturing and use of nano cellulose as a binder (replacement for sheet rock).

## 2. Ingenuity & Innovation (Technology & Entrepreneurial Growth)

- This region has extensive experience working with new entrepreneurs, particularly around the “theory of creative destruction“ (new production replaces old production).



- The University of Maine partners with the state and other stakeholders to present Big Gig, Top Gun, Innovate for Maine and the Maine Invention Convention – all proven models to engage youth, higher education students, emerging entrepreneurs, and other innovators poised to take ideas to commercialization.

- The region supports innovation centers such as the UpStart Center for Entrepreneurship (Orono) and Union River Center For Innovation (Ellsworth) to provide infrastructure and mentoring to new business startups, particularly those focused on technology and innovation.

## 3. Manufacturing & Production (Composites, Boat Building & Construction)

- Our region supports high quality workers whose work ethic leads to productivity and technical prowess. This strong work ethic and specialized expertise often leads to talent recruitment from other regions particularly in the boat building industry.
- Husson University, the University of Maine and other regional higher education institutions groom highly skilled professionals including engineers and other skilled workers.

- Eastern Maine is poised to grow because of the increased global appetite for electricity. Producing new technologies to support alternative energy promised to be a future economic opportunity.
- There are emerging boat building opportunities through 3D printing, high-tech heavy equipment servicing, diversification in boat building for niche markets, water jet cutting, IP development, and the application of emerging technologies as aggregators.

#### 4. Tourism & Hospitality

- Maine, including Eastern Maine, continues to benefit from key consumer trends: special interest experiences; interactive learning experiences; authentic, unique-to-Maine experiences; and, physical or psychological challenges.
- The region is home to Acadia National Park and the recently designated Baxter Park National Monument. In 2015 alone, Acadia was the tourist destination for an estimated 2.81 million visitors and contributed more than \$300 million to the local economy.
- Tourism has historically been an economic driver for Maine, and opportunities for customized/individualized travel are available, particularly those tied to the natural environment.
- There are opportunities to begin expanding off-season visitation including accommodations catering to higher end clientele as well as those wanting to experience nature through skiing, snowmobiling, white water rafting, and more.

#### 5. Bioscience & Healthcare

- Eastern Maine has key anchor bioscience and healthcare entities in place – The Jackson Laboratory which has nearly half a billion dollar impact on the state’s economy and is viewed internationally as a premier bioscience research facility, MDI Biological Laboratory, Eastern Maine Healthcare Systems, St. Joseph’s Hospital, and the University of Maine.
- Eastern Maine has enjoyed a steady stream of capital investment from the National Institutes of Health and other federal agencies match private investment.
- Eastern Maine has a high concentration of students and faculty in the bioscience field, and a wealth of expertise in healthcare management.

- There are multiple regional and national conference opportunities clustered around the anchor organizations that can bring more visitors to Eastern Maine.
- Maine’s aging population (average age of nearly 44) supports a healthcare system that will continue to prosper and provide a myriad of career opportunities.

Not to be forgotten are the weak signals that emerged during the 2-year strategic planning effort. Defined as opportunities that have not converted to trends, these weak signals will be monitored as we continue to diversify our economic future.

### *Education and Workforce Development*

As noted in the EDA-commissioned Camoin Report (2015), education and workforce are the most significant ingredients for regional growth. This is true across all industries and all business sizes. The economic shifts in Eastern Maine warrant a “reboot” to identify those industries poised to become the new economic drivers in this region, and education and workforce development stakeholders need to work in partnership to assist the job seekers as well as businesses and industry.

Eastern Maine is truly an educational hub, containing over 30 students per square mile within a 15 mile radius of Bangor and the highest density in the State of higher education institutions within a 45-mile radius of Bangor. These assets provide **the region** the opportunity to become an educational hub and research center in the coming years.

Despite these assets, a gap was noted between business/industry needs and identifying a workforce with skills necessary to support growth. Because the very nature of community colleges and higher education institutions have historically made them less responsive to industry shifts, efforts are needed to support a curriculum that builds skill sets needed to support expansion of current economies or growth of emerging opportunities. Collaboration between education, businesses/industry, and workforce development will be promoted to become nimble to shifting needs and changing economic environments.



A key component of this transformation will be an assessment of the necessary platforms crafted to build a capable and trained workforce to meet growing demands and to assist workers who are being displaced from contracting industries and occupations. EMDC will work aggressively with our education and workforce/skills development partners to develop a platform that

encourages career ladders to advance current workforce and bring in new hires. The model would encourage development of programs that adjust quickly to changing markets and sophistication of skills. It will also need to address our regional asset – our existing workforce – to provide support and training to keep these assets working at livable wage jobs.

Building our brand as the Educational Center of Maine, highlighting the diverse and rich education partners (high school programming, technical and vocational-technical schools, community colleges, and higher education colleges and universities), and creating an environment for strong collaboration will be necessary as we move our economic priorities forward. By doing so, the region can not only address existing and future workforce needs but also brand itself as a “learning region” to further support business, investment, and people retention and attraction.

### *Access to Capital*

Maine continues to lag behind other New England states and the nation with only one-third the average annual investment per capita of Vermont and about one-ninth the annual investment in neighboring New Hampshire. Collaboration with the broad stakeholders engaged in strengthening our economic future will be needed to secure new capital. Increase access to capital for funding for early stages of conceptualization through to product development.

The Bangor Angel Fund was launched in 2013 through a partnership between Mobilize Eastern Maine, the Bangor Region Chamber of Commerce, the University of Maine, and Target Technology Incubator (recently renamed the UpStart Center for Entrepreneurship) to provide seed funds to innovators ready to scale up and move to commercialization. The Bangor Angel Fund serves an important, but risky role

to help push new companies towards scalability. Successes have already been noted; in 2016, \$365,000 has been invested in three local and 1 out of state companies. However, additional resources are needed to fund early stage conceptualization, product development, and commercialization as we continue to diversify regional economic opportunities.

Towards that end, we will continue to foster conversations around a lending/equity fund/patient capital investment plan that will complement and supplement the Bangor Angel Fund and other private investments in the region.

Moreover, the credit and capital availability to small and medium businesses are critical to retention and expansion of the region's economic backbone of small business. Building upon current access to federal, state, local and traditional lending instruments, EMDC's regional partners must continue to expand and accelerate the funds for lending to businesses that are poised for job growth.

### *Infrastructure and Environment*

The independent supply chain analysis produced by Camoin Associates highlighted that addressing transportation and logistical infrastructure challenges will be critical to the region for economic growth across industries. Rail for integrated commercial logistics, leverage the unique strengths of each Eastern Maine port, increased passenger air travel for more connections and services, use of cargo shipping and the Free Trade Zone at Bangor International Airport, competitive trucking options for ground shipping, and passenger rail for increased tourism and recreation all have potential value.



Each logistic has advantages in Eastern Maine to support increased business growth:

1. Rail: Potential for car load growth; support a team of seasoned rail executives; recent investment of federal and private capital to increase rail speeds and update large size capacity.
2. Air: Bangor International Airport has access to connect to everywhere (stateside, Canada, international points); capacity to extend seasonal travel, upgrade aircraft service and add possible

new routes; poised to capitalize on Free Trade Zone; create an economic tech stop using BIA/trip fuel.

3. Roads: High average salary; high reliance on trucking to move goods; vehicle efficiency on Maine highways; recent increase in allowed tonnage on interstate highway system.
4. Water: Existing infrastructure in coastal communities that can be converted for reuse to increase shipping; deep water ports; close access point to ship to Europe

Eastern Maine would benefit from the formation of a Regional Authority empowered to address logistic issues in order to present a cohesive and focused approach to resolve gaps and barriers, and promote the efficient movement of goods and services. Specifically, the Regional Authority would work to bring the various transportation players to the table to work collaboratively instead of competing in order to address community concerns, strategies to increase efficiencies, and overall upgrades and improvements to existing infrastructure.

Complementing this work are our efforts to broaden broadband capacity and literacy to rural communities in our service area. Maine has been challenged on the issue of building the last mile of the Three-Ring Binder initiative. In many regions, the current technology is older and wasn't designed for high-speed connectivity. As a result, many remote regions of Eastern Maine lack the capacity to compete in today's market.

As part of the Re-Engineering the Region project, two Expansion of Digital Capacity meetings were held, one on December 1, 2015 followed by a second meeting on February 25, 2016. These meetings' brought together providers, communities and other regional stakeholders to discuss how to expand capacity while at the same time, result in capacity that is equitable for both users and providers. The discussions at these meetings were specific to current capacity, how do we determine the needs of our region community by community, how can a partnership between providers, communities and other stakeholders enhance efforts for expansion of capacity, what is needed to fill the gap between current and preferred, and can we build "community technical plans" that provides incentive to attract providers and increased take rate.

As a first step, ConnectME funded a pilot study driven by EMDC and Axiom Technologies that consists of the selection of four communities who are well-positioned to begin the digital planning process, building the necessary "template" to identify their next steps and to expand the model to other communities. Communities need to understand their unique gaps and best solutions before moving forward on a broadband expansion implementation plan. Each final plan will include digital planning that incorporates infrastructure and the current capacity of digital literacy/training, gaps, and solutions to address the gaps.

Upon completion of the pilot effort, our "lessons learned" will be incorporated into a broader plan for additional communities within the region. These efforts will result in improved broadband connectivity and adoption for communities (businesses and residents alike), an essential strategy necessary to our region's growth and increasing employment/education opportunities.

Our region is also exploring the possibility of forming a public-private partnership charged with performing the needs and gap assessments, develop technical plans specific by community, and identify funding streams to support expansion of capacity and digital literacy.

#### *Impact of Substance Abuse to Economic Prosperity*

Adding a level of complexity to Eastern Maine's environment is the prevalence of substance abuse and its related costs and economic impacts. In 2010, the annual economic impact of substance abuse in Penobscot county alone was over \$160,000,000. That was 77% greater than Bangor's municipal and school budget combined. Given Eastern Maine's identify as the "last stop for services before Canada", the draw for people needing support to address their addictions as well as the draw of suppliers and illegal meth labs targeting that population continues to increase.

The Office of National Drug Control Policy reported recently on the negative consequences of substance abuse on the U.S. economy and the nation's workforce. Eastern Maine is beginning to experience the negative impacts with high unemployment among substance abusers, turnover and absenteeism, school performance and higher dropout rates. The potential barrier posed by substance abuse and environmental impacts includes employment productivity losses, criminal justice and incarceration, the increased cost of law enforcement intervention, debt delinquency, debt from unpaid

back taxes, decrease in emergency department care (including charity services), and the demands to support an increasing additive population must be addressed with any economic visioning.

Eastern Maine substance abuse intervention champions, service providers and providers of related services (i.e., local/municipal representatives, workforce/employment development including for those recently incarcerated, housing, education) are working collaboratively to address the escalating problem and create/promote activities to stymie further surges with substance abuse in the future.

### *Leadership*

One of the primary goals of Mobilize Eastern Maine effort was to provide a portal to strengthen public and private, traditional and non-traditional partnerships in order to collaboratively drive our region's



economic future. Partnerships created and supported through the Mobilize Eastern Maine effort have continued, with the sustained level of engagement and investment evident in the Re-Engineering the Region work.

Our progress on moving economic priorities identified in this CEDS plan will be contingent on keeping our community, local/county/state government entities,

business (public and private), and industry partners collaborating to reach a shared vision – economic diversity and growth. EMDC is well-recognized as a “convener” to bring the traditional and non-traditional partners to work collaboratively, and will continue efforts to convene, communicate, and energize all stakeholders in the coming months.

## Measuring Progress

Through our new Re-Engineering the Region identity, EMDC is committed to demonstrating progress toward our short and long-term goals by continuously measuring progress. One aspect of this

measurement will be through the collection and interpretation of data. EMDC is prepared to perform an ongoing analysis of our region's progress through a subscription to a national data systems organization called Chmura Economics & Analytics and its specific database **JobsEQ**. JobsEQ pulls data from national data sources using a data tool that allows for the dynamic and accurate collection of data to evaluate complex occupation and industry information. This subscription will be at the heart of the new EMDC Data Center; early in its formation, the Center will have staff experienced to pull and analyze data as well as perform “what-if” scenarios. This information will arm businesses and communities with the data needed to influence future strategic plans for growth and revitalization. This service depth and the complexity of the impact analyses is unique to the State of Maine, and will allow us to accurately track new job creation, career development, industry growth, downward trends, and opportunities/weak signals for economic diversity.

Beyond the quantitative data, qualitative assessments will be performed through EMDC's accelerated efforts to support communities, businesses and industries. One-on-one conversations and technical assistance will be provided through increased capacity of staffing to uncover both obstacles to continued growth and opportunities being developed or on the horizon to trigger economic progress and sustainability in Eastern Maine.

## Economic Resiliency

Eastern Maine has been challenged by extensive changes to its historical economic drivers. Gone are the paper mills that for so long employed many of our residents and served as our economic identity. It became clear that now was the time to scrutinize and reset our economic future – small changes, marginal improvements, and tinkering at the edges will not suffice. New vision to think big, coupled with a new culture to build capacity for regional transformation into a new systems approach is needed to leverage emerging opportunities (Camoin Report, 2015).

Over the coming months, we need to focus on multiple priorities including the reuse of an important asset – wood fiber – as well as other critical assets to foster revitalization and economic growth toward sustainability: Encouraging growth of our region's educational assets and status as a continuous learning

and adaptive region; diversification of our economic base by capitalizing on emerging opportunities/trends; expansion of digital capacity and literacy; support of entrepreneurship and innovation; and, collaboration to advance a shared vision promoting economic health for all.

## High Impact Priority Projects

Through the short-term strategic planning process, more than 60 projects at various stages of development were identified – some have reached the implementation stage, some projects are in planning, and some are still ideas identified as having potential for triggering economic growth including jobs creation. These diverse projects were identified by a wide range of stakeholders representing public and private, rural and urban, business and resident, and local and regional groups. Understanding that some projects will flourish and others will not progress, it is important to identify the projects are described to show the creativity and active engagement of the community and regional partners in the strategic planning effort.

The following projects have already progressed in their development:

- **Advancing Biobased Manufacturing from Renewable Biomass:** This project is being proposed by the Environmental Health Strategy Center, the University of Maine, and Biobased Maine to attract private investment in new bio-based manufacturing which will use renewable biomass such as forest products (instead of petroleum) to produce high value-added bio-based chemicals, plastics, advanced materials and fuels. The project (also being proposed to EDA for funding) will work to: 1) create a road map to advance bio-based manufacturing in Maine; 2) market Maine's assets to the global biotechnology industry; and, 3) attract investment in conversion of woody biomass to cellulosic sugars. Although this project is primarily based in Southern Maine (with some aspects being statewide), there is alignment with our regional objectives for wood reuse.



- Our Katahdin: This all-volunteer nonprofit organization was formed as a result of the paper mill closures and economic downturn that had a devastating impact to Millinocket, East Millinocket, Milo, Medway and other small rural communities based in the Katahdin region of northern Penobscot County. Our Katahdin is a platform that serves to pull together ideas, people and capital to focus efforts on community, entrepreneur, and industry development. This creative group has engaged in re-engineering the region efforts to share a vision for growth and recovery. Immediate projects include the expansion of broadband capacity, small wins through crowd funding, and new business development.

- The City of Ellsworth Maine has been working over the past two years to launch a biotechnical incubator entitled, “Union River Center for Innovation.”

This demand-driven project received initial funding from the Northern Border Regional Commission and Maine Technology Institute to address infrastructure needs including an expansion of broadband capacity and a suitably-fitted and designed facility. Collaborating with the University of Maine Center for Innovation, this incubator will grow new bioscience/biotechnology businesses as they move their new products/concepts from concept to startup to scalability.



- A partnership between Eastern Maine Community College, businesses, and EMDC has led to the launch of Fine Woodworking classes to train students for careers in boat building, cabinet making, furniture making and more. This collaboration supported the creation of a program that is providing training for skills needed to employ workers within these fields. Similar collaborations are planned for other career pathways.

- The Jackson Laboratory in Bar Harbor has developed a 10-year strategic plan that will include establishing the Bar Harbor campus as the primary headquarters, expand Research and Education, and transition production to a new facility in Ellsworth Maine. The overall impact will result in the creation of new jobs and generation of new revenue as well as expand the headquarters facility to expand commerce and draw new employees and businesses to Maine. The Jackson Laboratory has been an engaged partner throughout the re-engineering/planning process.
- The Town of Lincoln is working with community and business partners to launch a project referred to as “Lincoln Gateway.” This project proposes to link the many snowmobile trails with new signage and routing maps that would connect communities in that region and support the ecotourism industry.

- A biomass effort is underway by Georges River Energy, a wholly owned and operated subsidiary of Robbins Lumber of Searsmont, Maine (Waldo County). Robbins



Lumber is a fifth generation family owned and operated sawmill employing 105 men and women. Robbins Lumber was interested in a project that would use pulpwood and biomass. Logging contractors in Eastern Maine have had their pine pulpwood deliveries to the paper mills curtailed due to paper machine shutdowns or the mill closures. The biomass energy plant will use a locally-sourced blend of bark, hog fuel, sawdust, pulpwood and wood chips as biomass fuel. The waste heat from the project will be used to dry our lumber and heat our buildings. Georges River Energy will employ many people during the construction phase. This biomass plant will provide a market for pulpwood and biomass chips for Eastern Maine logging contractors. Robbins Lumber intends to not only meet, but also surpass all state and federal environmental guidelines

during the operation of the proposed biomass plant. This would be an extremely efficient biomass system that would produce an abundant supply of clean, renewable energy.

- C&L Aerospace, located on the Bangor International Airport, is an Australian-owned company with offices in the United States and Europe. They provide service to the commercial and military aviation sectors including aircraft heavy maintenance, component repair structural modifications, avionics modifications, parking and storage, aircraft teardowns, field service teams, aircraft management and lease returns, exterior painting and repair, and complete interior refurbishment.

The Bangor location has grown from 22 employees in 2010 to 125 employees in 2015. They recently embarked on a significant expansion project that diversified their offerings in Bangor that allowed them to be significantly more competitive in the maintenance business by offering



complete aircraft paint services. They are now in the process of another large expansion which will grow their corporate aircraft maintenance division, upgrade their avionics capabilities, and expand upon interior maintenance division. This work is being funded in part by a recent EDA award that will allow C&L to continue

to be competitive in attracting business by offering a “one-stop-shop” for all critical aircraft service that are in high demand in the United States and Internationally.

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Our Katahdin

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