EASTERN INTERIOR CORRIDOR MANAGEMENT PLAN

Addendum I to Canadian Coastal Corridor Management Plan, June 2011

MaineDOT

WCCOG

GreenLight Solutions, LLC
Engineering-Planning-Technical Training

Produced for the Maine Department of Transportation by

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1.0 INTRODUCTION

The Eastern Interior Corridor (EIC) is one of 38 Corridors of Regional Economic Significance for Transportation (CREST) identified by the Maine Department of Transportation (MaineDOT) in a public process between 2006 and 2008. The CREST system brings regional stakeholders together to identify and prioritize transportation investments that will produce the greatest economic benefit to the region and the state. Please refer to the final report on the Canadian Coastal Corridor (CCC) Management Plan for more details. This report is prepared as an Addendum I to the CCC report, published online in June 2011 (http://www.wccog.net/corridor-planning.htm), since the two regions share considerable overlap: their study areas, significant regional economic development drivers, and top priorities for transportation investment are similar, in some cases identical. The major difference is that the Canadian Coastal Corridor runs primarily north-south from Eastport to Houlton, and the Eastern Interior Corridor runs primarily east-west from Vanceboro to the Lincoln-Mattawamkeag area.

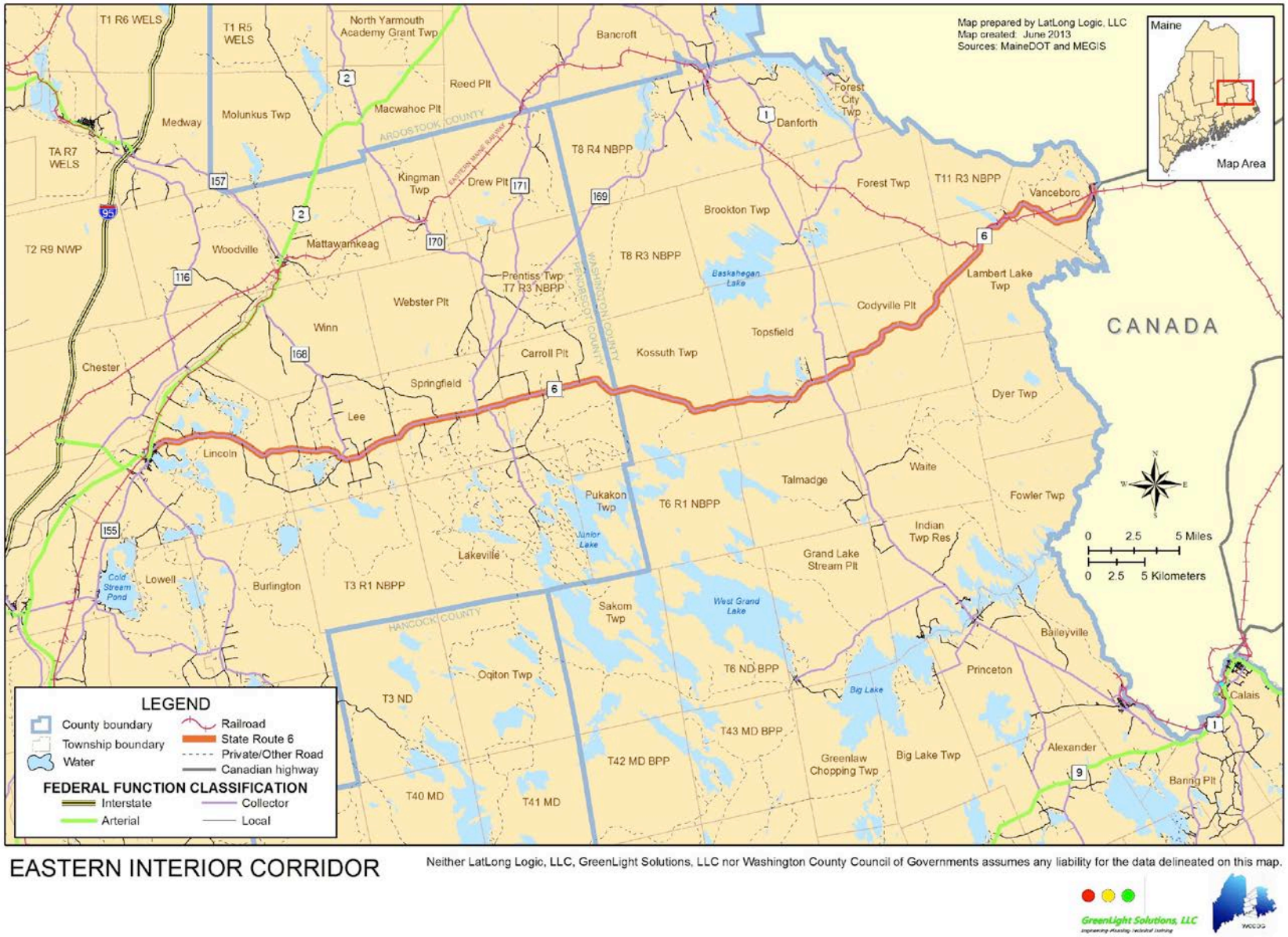
Washington County Council of Governments (WCCOG) solicited extensive public input from a broad spectrum of residents, business owners, and stakeholders within the corridor to develop major goals, strategies, and policy recommendations for the EIC. A regional advisory committee, facilitated by a WCCOG consultant, developed a series of transportation, land use and economic goals for the corridor, based on identified current and future needs under three alternate development scenarios. A series of short-term, medium-term, and long-term strategies were then proposed to meet these goals, along with policy recommendations that may help MaineDOT manage the corridor more efficiently. The final recommendations are quite similar to those developed for the CCC, and they align with broader regional objectives as described in the 2009 MaineDOT document Strategic Investment Plans for Corridors of Regional and Economic Significance (SIPCRES). However, the goals and strategies in this report are more specific. They focus exclusively on the EIC study area and its projected development over the next two decades.

1.1 Purpose and Needs Statement

The EIC advisory committee adopted the following statement to serve as the foundation for its decision-making processes in the selection and prioritization of goals and strategies within the CCC Management Plan.

The Eastern Interior Corridor Management Plan seeks to:

- **preserve the existing regional transportation system in good working condition;**
- **prioritize future system upgrades and investments to expand multimodal and intermodal transportation opportunities;**
- **stimulate regional economic growth; and**
- **support the establishment of adequate annual funding streams to maintain all sectors of the regional transportation system.**



EASTERN INTERIOR CORRIDOR

Neither LatLong Logic, LLC, GreenLight Solutions, LLC nor Washington County Council of Governments assumes any liability for the data delineated on this map.

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Figure 1: Eastern Interior Corridor Study Area

1.2 Definition of the Corridor Study Area

The Eastern Interior Corridor facilitates east-west multimodal transportation through eastern Washington County and central Penobscot County. The study area is centered along State Route 6, extending from the Canadian border at Vanceboro west to the Interstate I-95 access road (River Road) in Lincoln and Chester. It includes the portion of the Eastern Maine Railway line that runs from Vanceboro to its junction with the Pan Am Railways (PAR) line in Mattawamkeag, just north of Lincoln. The study area also includes US Route 1 between Danforth and Calais, and smaller state highways that carry people and products to and from State Route 6. These include State Routes 168, 169, and 170; State Route 9 from Calais west to South Princeton Road; and all of South Princeton Road. For economic analysis purposes, the study area also includes the network of smaller public and private roads within this region that connect industrial forestlands, sporting camps, agricultural fields, energy generation projects, residents, and visitors to State Route 6 and US-1, which in turn provide high-speed access to major processing and distribution facilities, the Interstate highway system, airports, the national and international railroad system, and the deep-water port at Eastport. A map of the EIC study area is shown in Figure 1.

1.3 Identification of Economic Development Scenarios and Driving Forces

The advisory committee considered three likely economic development scenarios for the study area over the next two decades. For each scenario, the committee identified driving forces that could be influenced by targeted transportation investment. Driving forces are defined as currently observable trends that have the potential to influence future outcomes. The three economic development scenarios selected for analysis were:

1. Natural resources-based industries (including fisheries, forestry, pulp and paper manufacturing, value-added wood products manufacturing, farming, commercial-scale agriculture, wreath-making, and mining, among others)
2. Tourism (including outdoor recreational activities on land and water, ecotourism, and culturally based or themed tourism events such as the annual Springfield Fair)
3. Energy Development (including windpower, biomass, and the construction and maintenance of powerlines and pipelines)

Driving forces were evaluated through a series of rating sheets that committee members and stakeholders evaluated both individually and as a group. Tables 1-5 provide a summary of the committee members' responses, within the five categories of:

- Economy,
- Social & Demographic Trends,
- Infrastructure,
- Built & Natural Environment, and
- Political Actions.

For each category, committee members assessed:

- the anticipated growth rate (High, Medium, or Low) in that sector over the next 20 years;
- the likely impact on the transportation system of growth in that sector (High, Medium or Low); and
- the expected impact on economic development, if transportation funds were invested to promote growth within that sector (rated on a 1-5 scale, with 1=a very strong impact, and 5=a waste of money to invest in this).

Categories rated by a majority of the group with a High or Medium future growth rate, AND (very strong or strong benefits to economic development in the corridor, are highlighted in yellow on each rating sheet.

Many worthwhile ideas were proposed for the EIC corridor during committee deliberations. To select their highest priorities, the committee used the responses to the driving forces, the Purpose and Needs Statement and the data analysis presented in Section 2 to address existing and anticipated system deficiencies within the EIC.

DRIVING FORCE: **Economy**	**Likelihood of Growth** **Is future growth likely to be high, medium, or low over the next 10-20 years? Give your honest opinion, whether or not you personally support continued development of the force being evaluated.**	**Impact on Transportation** **What effect, if any, do you think growth in this driving force will have on the multimodal transportation system (highway, rail, bike-ped, air, marine) in the Eastern Interior Corridor? High, medium, or low?**	**Overall Investment Impact What impact will result from targeted efforts and transp. investments to benefit this force, in terms of regional economic development and quality of life in the study area? Scale of 1 to 5 (1=very strong positive impact, 5=a waste of money to invest in this)**
Natural resources & manufacturing (includes farming and fishing related industries)	M (range: L-H)	H (range: M-H)	2 (range: 1-3)
Energy development	H (range: M-H)	M (range: L-H)	2 (range: 1-5)
Wholesale and retail trade	M (range: L-M)	L (range: L-M)	4 (range: 1-5)
Tourism, hospitality, & local culture	M (range: L-H)	M (range: L-H)	2 (range: 1-5)
Science, technology, education, high-tech home-based business	L (range: L-H)	L (range: L-M)	4 (range: 3-5)
Health care & related community services	M (range: L-H)	M (range: L-H)	4 (range: 1-5)
Size of workforce	L (range: L-M)	L (Range: L-M)	4 (range: 1-5)
Wealthy retirees & second home purchasers	M (range: L-H)	L (Range: L-M)	4 (range: 3-5)

Table 1: Economy Driving Forces Matrix

DRIVING FORCE: **Social and Demographic Trends**	**Likelihood of Growth** **Is future growth likely to be high, medium, or low over the next 10-20 years? Give your honest opinion, whether or not you personally support continued development of the force being evaluated.**	**Impact on Transportation** **What effect, if any, do you think growth in this driving force will have on the multimodal transportation system (highway, rail, bike-ped, air, marine) in the Eastern Interior Corridor? High, medium, or low?**	**Overall Investment Impact** **What impact will result from targeted efforts and transp. investments to benefit this force, in terms of regional economic development and quality of life in the study area? Scale of 1 to 5 (1=very strong positive impact, 5=a waste of money to invest in this)**
Youths and Teens	L (range: L-M)	L (range: L-H)	4 (range: 3-5)
Working adults, 18-60+ (includes people actively seeking paid employment, whether or not they are currently employed)	M (range: L-M)	M (range: L-H)	2 (range: 1-4)
Retirees, both traditional (60+) and younger (40-60)	H (range: L-H)	M (range: L-M)	3 (range: 1-4)
Enrolled in educational or vocational programs to qualify for a new or better career	M (range: L-M)	L (range: L-M)	4 (range: 1-5)
Unemployed or underemployed (includes stay-at-home parents)	M (range: L-H)	L (range: L-M)	3 (range: 1-5)
Non-driving adults in rural areas (includes elderly former drivers)	M (range: L-H)	M (range: L-H)	4 (range: 1-5)

Table 2: Social & Demographic Driving Forces Matrix

DRIVING FORCE: **Infrastructure**	**Likelihood of Growth** **Is future growth likely to be high, medium, or low over the next 10-20 years? Give your honest opinion, whether or not you personally support continued development of the force being evaluated.**	**Impact on Transportation** **What effect, if any, do you think growth in this driving force will have on the multimodal transportation system (highway, rail, bike-ped, air, marine) in the Eastern Interior Corridor? High, medium, or low?**	**Overall Investment Impact** **What impact will result from targeted efforts and transp. investments to benefit this force, in terms of regional economic development and quality of life in the study area? Scale of 1 to 5 (1=very strong positive impact, 5=a waste of money to invest in this)**
New state highways	L (range: L-M)	L (range: L-M)	4 (range: 3-5)
New local (municipal or tribal) roads	L (range: L-M)	L (range: L-M)	3 (range: 1-5)
Deterioration of existing roads and bridges	H (unanimous)	H (range: M-H)	1 (range: 1-5)
New bicycle & pedestrian facilities (sidewalks, paths, bike lanes, widened shoulders)	M (range: L-M)	M (range: L-H)	2 (range: 1-5)
Rural public transit and private passenger service (bus, taxi, etc.)	M (range: L-M)	M (range: L-M)	3 (range: 1-5)
Urban services (3-phase power, public water, public sewer)	M (range: L-M)	L (range: L-M)	4 (range: 2-5)
Widely available broadband or other high-speed Internet	H (range: M-H)	M (range: L-H)	1 (range: 1-5)

Table 3: Infrastructure Driving Forces Matrix

DRIVING FORCE: **Built and Natural Environment**	**Likelihood of Growth** **Is future growth likely to be high, medium, or low over the next 10-20 years? Give your honest opinion, whether or not you personally support continued development of the force being evaluated.**	**Impact on Transportation** **What effect, if any, do you think growth in this driving force will have on the multimodal transportation system (highway, rail, bike-ped, air, marine) in the Eastern Interior Corridor? High, medium, or low?**	**Overall Investment Impact** **What impact will result from targeted efforts and transp. investments to benefit this force, in terms of regional economic development and quality of life in the study area? Scale of 1 to 5 (1=very strong positive impact, 5=a waste of money to invest in this)**
New residential development	L (range: L-H)	L (range: L-H)	3 (range: 1-5)
New commercial development	L (range: L-M)	M (range: L-H)	2 (range: 1-5)
Downtown infill and redevelopment of existing developed properties	M (range: L-H)	M (range: L-H)	2 (range: 1-5)
Sales of large tracts of undeveloped land (formerly working forestland) to private real estate investment trusts (REITs) and individuals	M (range: L-H)	L (range: L-M)	4 (range: 3-5)
Public, private, and non-profit open space, parks, preserves, and conservation lands	M (range: L-M)	L (range: L-M)	4 (range: 2-5)

Table 4: Built & Natural Environment Driving Forces Matrix

DRIVING FORCE: **Political Actions**	**Likelihood of Growth** **Is future growth likely to be high, medium, or low over the next 10-20 years? Give your honest opinion, whether or not you personally support continued development of the force being evaluated.**	**Impact on Transportation** **What effect, if any, do you think growth in this driving force will have on the multimodal transportation system (highway, rail, bike-ped, air, marine) in the Eastern Interior Corridor? High, medium, or low?**	**Overall Investment Impact** **What impact will result from targeted efforts and transp. investments to benefit this force, in terms of regional economic development and quality of life in the study area? Scale of 1 to 5 (1=very strong positive impact, 5=a waste of money to invest in this)**
New tax (or increases to the gas tax) levied to pay for transportation improvements	M (range: L-H)	H (range: L-H)	3 (range: 1-5)
Alternative (non-tax) funding sources identified to pay for transportation improvements	M (range: L-H)	M (range: L-H)	2 (range: 1-5)
Enactment and enforcement of local zoning codes	M (range: L-M)	M (range: L-H)	3 (range: 1-5)
School funding cuts and further consolidation of public school districts	M (range: L-H)	M (range: L-M)	3 (range: 1-5)
Demand from bicyclists, pedestrians, elderly, disabled, and non-drivers for investment in transportation alternatives and "complete streets"	M (range: L-H)	M (range: L-M)	4 (range: 2-5)

Table 5: Political Actions Driving Forces Matrix

1.4. Public Participation Plan

WCCOG organized three public outreach meetings, press releases, and website postings to solicit input for this plan. The primary outreach method was broadcast electronic mailings. A broad cross-section of residents, business owners, and organizational representatives within the corridor study area were invited to serve on the advisory committee, including two MaineDOT regional engineers, a MaineDOT planner, and state and federal legislators with districts within the study area. Individuals who were unable to attend advisory committee meetings or who declined the invitation to serve as active participants were invited to become "stakeholders"; they received all advisory committee mailings, and were invited to review materials and submit comments to the facilitator as the study progressed. Meeting proceedings were posted on the WCCOG website (http://www.wccog.net/corridor-planning.htm) as they became available. The commercial software product **Constant Contact** was used to maintain contact with all advisory committee members and stakeholders. By the time the final draft plan was presented at a formal public meeting on June 28, 2013, 65 people had been added to the project mailing list. A list of advisory committee members and stakeholders is provided in Appendix A.

2.0 DATA SUMMARY AND ANALYSIS

This section of the report presents a summary of the existing conditions within the EIC. Topics covered in this section include the existing transportation, land use, and economic elements that were analyzed to develop the EIC Management Plan, including identified deficiencies in each area.

2.1 Transportation Elements

2.1.1. Vehicle Miles Traveled (VMT)

Washington County and Penobscot County, along with the rest of Maine and the entire nation, experienced a leveling off (and in many areas, even a slight decline) in the number of annual Vehicle Miles Traveled (VMT) during the period from 2000-2010, after experiencing very rapid growth in VMT (nearly 15% in Washington County) over the previous decade. The decline slowed or stopped in the past few years, but there is no indication that VMT is likely to start rising rapidly again in the foreseeable future. The declining rate of growth in VMT is most likely attributable to the rising price of gasoline and a very slow recovery from the nationwide recession over the past five years The median income in Washington County is less than 70% of the national average and over 20% of all households live below the national poverty line. Thus the expense of owning and operating a privately-owned vehicle (or multiple vehicles) may be moving out of reach for an increasing proportion of residents. In addition, many older Mainers are driving less (or not at all) due to declining physical capabilities. Quality of life

surveys conducted in Washington County in 2007 and 2009 identified access to reliable transportation as a significant problem in many respondents' lives.

The Penobscot County portion of the EIC has a slightly stronger economy than Washington County, with a median income that is within 90 percent of the national average. Approximately 16 percent of Penobscot County residents live below the national poverty line, and many rural residents face long daily commutes to jobs in Lincoln, Calais, and outside the EIC study area. Nonetheless, the same declining VMT trends are observed in Penobscot County as in Washington County.

If Vehicle Miles Travelled continue to decline or remain stagnant over the next two decades, it is likely to have both negative and positive impacts. Economic growth in a sparsely populated region like the EIC requires both people and goods to traverse large distances to reach service center communities and markets, which in turn requires a well-maintained, rural transportation network. However, MaineDOT's revenues from federal and state gasoline taxes have decreased as vehicles become more fuel-efficient and people choose to drive less – even as highway and bridge construction and maintenance costs rise exponentially. On the positive side, if vehicular volumes grow at a slower rate over the next 20 years, it may be possible to maintain adequate carrying capacity and structural integrity on the region's roads and bridges. MaineDOT can realize significant savings if it can rely on preventive maintenance and spot improvements to maintain safe, comfortable driving conditions and adequate levels of service for motorists, allowing the bulk of its biennial funding to be accumulated for investment in high-cost highway construction and bridge replacement projects.

Figure 2 is a map showing the Annual Average Daily Traffic (AADT) counts for major highways and border crossings in the study area as of 2011.

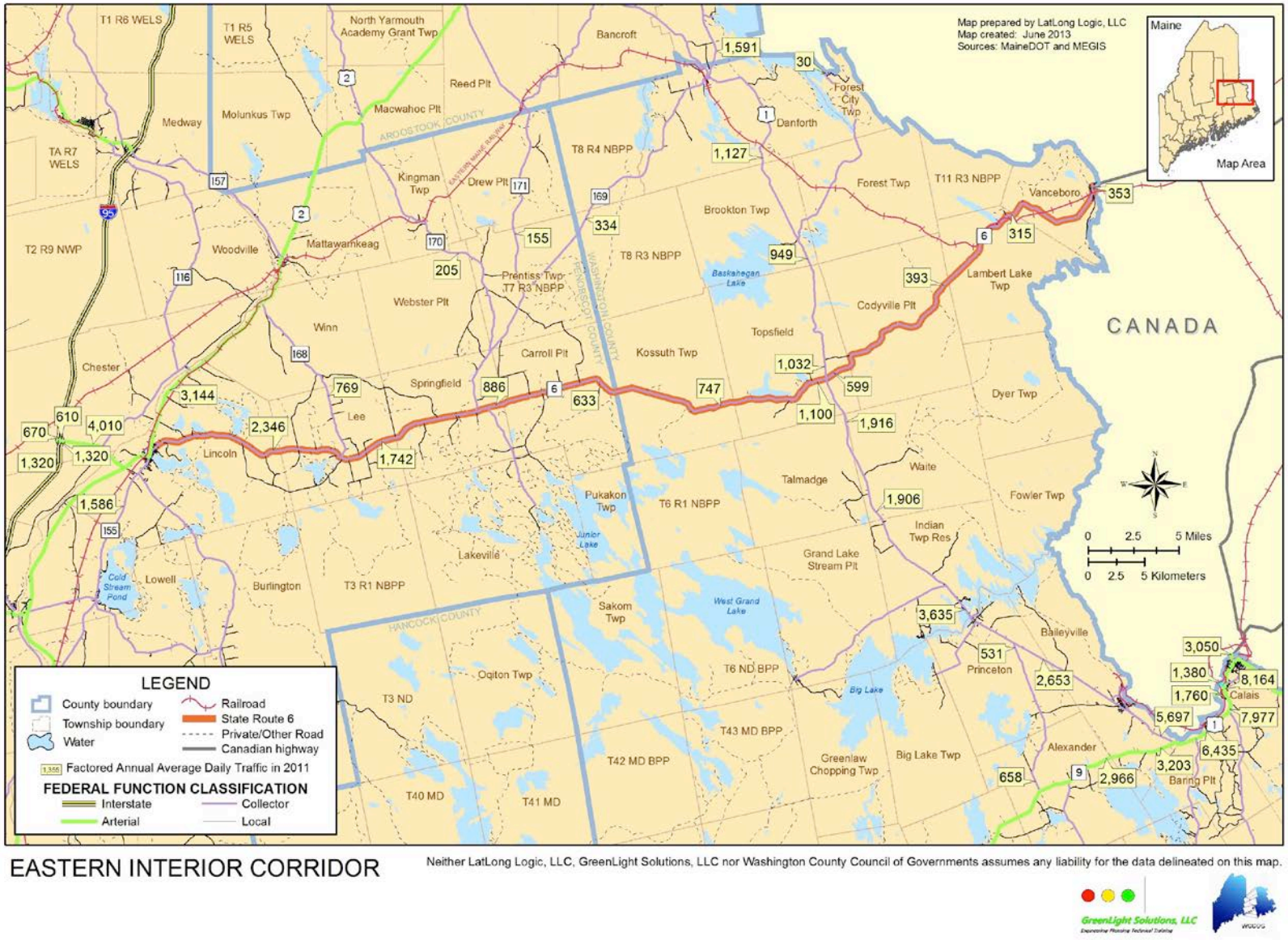

Figure 2: Eastern Interior Corridor Traffic Counts (AADT)

2.1.2 Traffic Safety

MaineDOT uses a statistical formula to assess the relative safety of road segments and intersections on the state highway system. This formula helps MaineDOT prioritize the most dangerous sites for further analysis, so they can select appropriate countermeasures to reduce crash rates. High Crash Locations (HCLs) by definition must have a calculated crash rate factor higher than 1.0, indicating a higher-than-average crash rate as compared to other Maine roads with similar volumes and functions, AND a minimum of eight crashes at that location during the latest three-year analysis window. Using this standard, the EIC had five designated HCLs within the study area during the periods 2009-2011 and 2010-2012. All were located in Lincoln, and most were two-car, rear-end collisions due to stopped, slowing, or turning traffic at intersections or commercial entrances. Only one of the crashes involved a possible injury, and that crash was attributed to driver inattention and excessive speed. The Town of Lincoln may wish to consider the implementation of a local access management program to limit the number of new commercial and residential driveway openings on State Routes 2 and 6, if they wish to improve the free flow of traffic and minimize rear-end collisions within the commercial district.

Although it is not currently an HCL as defined by MaineDOT, the public rest area on State Route 6 at East Musquash Lake in Topsfield was viewed by EIC advisory committee members as a potential safety hazard. There are high volumes of turning and entering vehicle traffic during summer months, and the parking lot often overfills -- so people end up parking on the narrow shoulders of State Route 6, and then walking along or crossing the road to enter the rest area. The speed limit here is 45 mph, but many vehicles travel much faster and there is a large component of heavy trucks traveling on this very narrow stretch of road. In addition, a popular snowmobile/ATV trail crosses the road at the rest area. **The committee would like to see MaineDOT and the Maine Department of Conservation (DOC) work together to increase parking capacity, widen the shoulders to reduce conflicts between rest area users and through traffic, and enhance safety for all road and trail users at this location**.

2.1.3 Border Crossings

There are five official border crossings within the EIC study area. Calais is by far the busiest international port of entry. It features three 24-hour border crossings: Ferry Point, Milltown, and the new crossing for commercial traffic at International Avenue. Calais border patrol agents also process incoming train passengers (i.e., crew) and freight on lines entering Calais, Baring Plantation, and the Woodland Pulp, LLC mill. Any private or commercial vessels crossing the international border on the St. Croix River are required to check in at the closest border station immediately after docking.

Vanceboro has a low-volume 24-hour border crossing station that processes vehicles and incoming freight traffic on the Eastern Maine Railway line[1]. Forest City Township has a very small border crossing

[1] The railroad bridge spanning the St. Croix River in Vanceboro has the distinction of being the only US-Canada border crossing that has ever been attacked by foreign forces; it was bombed by the Germans in 1915, when the US was still a neutral nation, due to fears that the British-allied Japanese would use US

that is currently open from 8:00 a.m. to 7:00 p.m. daily. It is gated to prevent the passage of vehicular traffic when closed, and individuals who cross the border during off-hours by foot or by boat are required to check in the next morning with the border patrol officer on duty.

Airplanes arriving from outside US airspace are permitted to land at Lincoln Regional Airport, Princeton Municipal Airport and Vanceboro Seaplane Base, provided they file both a flight plan for that airport and a passenger manifest via the Automated Passenger Information System (APIS) prior to arrival. Except in the case of emergency or forced landings, pilots crossing the international border who have not filed the appropriate documents are refused permission to land. US Customs and Border Protection agents are available during posted working hours to process incoming flights at Princeton and Vanceboro, and they can process arrivals at Lincoln Regional Airport with sufficient prior notice. It is the pilot's responsibility to phone in advance and coordinate his or her arrival time so that the plane and passengers can be inspected and cleared following touchdown at the airport.

Attempts to obtain multimodal border crossing statistics directly from the US Department of Homeland Security were unsuccessful. However, Table 6 shows the statistics observed at the largest ports of entry in the EIC, as published on the United States Department of Transportation's Bureau of Traffic Statistics (BTS) interactive website for 2012:

Crossing Point	Trucks	Loaded Truck Containers	Unloaded Truck Containers	Trains	Loaded Rail Containers	Unloaded Rail Containers	Train Passengers
Calais	67,274	42,647	20,893	184	1,094	185	354
Vanceboro	1,290	1,093	307	337	7,179	14,656	790

Crossing Point	Buses	Bus Passengers	Personal Vehicles	Personal Vehicle Passengers	Pedestrians (includes bicyclists)
Calais	417	14,263	1,069,522	1,678,170	15,554
Vanceboro	NA	NA	49,967	76,010	1,143

Table 6: Passengers and Freight Entering the US via Major EIC Ports of Entry, 2012

Unfortunately, the data on the BTS website shows aggregate totals from all three ports of entry in Calais, without a breakdown of entering traffic at each crossing location. The only certain conclusion is that the 67,274 commercial trucks and most of the 417 buses entered via the new International Avenue crossing, as larger classes of vehicles are redirected to the International Avenue station if they try to cross the border at Ferry Point or Milltown. However, the crossing at Ferry Point still carries the highest total volume of international vehicle traffic through Calais, with an AADT of 3050 in 2011 as compared to 1760 for International Avenue and 1380 for Milltown.

railroads to funnel Japanese troops and supplies into Canada for deployment against Germany in Europe.

The BTS data indicates a significant shift from commercial trucking to rail since 2010, in both Calais and Vanceboro (refer to the CCC Final Report for corresponding 2010 statistics). This is probably due to the rising prices for gas, tires, and other petroleum-based products, which have made it more economical to ship non-perishable products via rail. There were also 48 percent fewer buses crossing the border into Calais and Vanceboro in 2012 than in 2010, despite a slight (1.5 percent) increase in the number of personal vehicle crossings. The increase in pedestrian and bicycle border crossing was even more dramatic: there was an 84% increase in Calais and a 46% increase in Vanceboro, for a combined increase of 80 percent in just two years! This jump may be due to increased levels of commercial and recreational bicycle tourism, or to the fact that more local people are walking or bicycling across the bridge rather than taking their cars for short cross-border trips. It is likely a combination of these factors.

2.1.4 Commercial and Passenger Vehicle Rest Areas and Scenic Pull-offs

The only official public rest area within the EIC is located on State Route 6 at East Musquash Lake in Topsfield. It features scenic views of the lake and the largely undeveloped shoreline, a public boat launch, several picnic tables, a waste bin, and a pit toilet. It is a popular summer recreational destination for local residents, as well as a convenient stopover for tourists and long-distance travelers. Unfortunately, its popularity creates safety hazards due to congestion and conflicts between pedestrians, ATV trail users, through traffic on Route 6, and stopped and turning vehicles along the road, as described above.

Although MaineDOT has been forced to close many public rest areas in recent years due to budget cuts, the EIC could derive economic benefit from the development of additional rest areas, or at least scenic pulloffs. A scenic pulloff can serve at least four purposes for three different user groups:

- Showcase the natural beauty of the EIC to visitors;
- Provide a free, enjoyable, and easily accessible picnic spot for both local residents and visitors, perhaps with a kiosk offering information about the view, the region, and local attractions that would merit a side trip;
- Provide a convenient, off-road rest stop for commercial truckers, who are required by law to stop and rest for at least 10 consecutive hours after accumulating 11 travel hours within any 14-hour period; and
- Increase highway safety for all users. Tired and distracted motorists, especially those making long-distance trips, are likely to try to push beyond their limits if there are no safe and convenient places for them to pull off. 2.1.5 Transportation Modes

This section provides details about existing conditions, including deficiencies, for each transportation mode within the study area.

2.1.5.1 Surface Transportation

State Route 6 is the primary east-west transportation route for private and commercial vehicles in the EIC. For most of its length it is a two-lane rural road, with a few truck-climbing lanes added to steep inclines. Paved shoulder widths vary between 0 and 8+ feet wide. As of 2011, AADT volumes at selected points along EIC from east to west are summarized in the following table:

Roadway	Municipal Division	AADT (2011)
International Border Crossing	Vanceboro	353
State Route 6	Lambert Lake Township	315
State Route 6	Codyville Plantation	393
State Route 6 east of junction with Route 1	Topsfield	599
State Route 6 west of junction with Route 1	Topsfield	1100
State Route 6	Kossuth Township	747
State Route 6	Carroll Plantation	633
State Route 6	Springfield	886
State Route 6	Lee	1742
State Route 6	Lincoln	2346
I-95 access road (River Road)	Chester	4010
I-95 access road from Lincoln (northbound)	Lincoln	610
I-95 access road from Lincoln (southbound)	Lincoln	1320
I-95 exit ramp in Lincoln (northbound)	Lincoln	1320
I-95 exit ramp in Lincoln (southbound)	Lincoln	670

Table 7: AADT Traffic Volumes on Primary Roadways in EIC, 2011

Other traffic counts within the study area were described in the previously published CCC study, and selected point counts are also shown in Figure 2 of this study. Not surprisingly, the highest AADT counts in the EIC study area are found in and near Calais, the largest population center and service center in Washington County. These roads were analyzed in the earlier CCC report, published in June 2011.

The portion of US-1 from Topsfield to Danforth and much of State Routes 168, 169, and 170 remain "unbuilt," among many state highway segments in Maine's backlog inventory. These are roads that were never fully constructed according to modern highway design standards, due to budget constraints and higher construction priorities in each biennial budget. Most of the unnumbered rural collector roads in the EIC corridor are also structurally deficient. Most unbuilt roads are older "horse-and-buggy" roads that were simply paved over to allow for higher and heavier traffic volumes, rather than being excavated and constructed for heavier use with well-draining subgrade material, properly sized drainage systems, and an engineered pavement design. Without such features, unbuilt roads tend to experience severe frost heaves, potholes, sinking, tilting, and cracking, and require more annual expense for maintenance than properly designed and constructed roads. However, full-reconstruction road projects are very expensive – often $2 to 3 million dollars or more per mile of highway – so MaineDOT is limited to spot improvements on the very worst sections of the unbuilt inventory, and various drainage

upgrades and maintenance on the rest. Until a consistent new funding source is identified, it is highly unlikely that these roads will be fully reconstructed to modern standards within the next two decades.

Table 8 lists roads in the EIC posted for heavy loads in 2013, creating costly seasonal detours for commercial trucks and other heavy vehicles. All except the Grand Lake Stream Road are located in MaineDOT Maintenance Region 5.

Municipal Division	**Route # or Road Name**	**From/To (TL=Town Line)**
Brookton to Forest City Township	Forest City Road	US-1 to Canadian border crossing
Chester to Woodville	State Route (SR) 116	Bridge Road (North Chester Road) to Woodville/Medway TL
Danforth to Springfield	SR 169	US-1 to State Route 6
Danforth*	Bancroft Road	SR 169 to SR 171
Grand Lake Stream Plantation	Grand Lake Stream Road	T6 R1 NBPP TL to Indian Twp Reservation TL
Lee to Winn Township	SR 168	SR 6 to US-2
Springfield to Lakeville	Bottle Lake Road	SR 6 to dead end
Springfield to Kingman Township*	SR 170	SR 6 to US-2

*Other towns affected by this posting lie outside the EIC study area.

Table 8: EIC Road Segments Affected by Posted Road Weight Limits During Spring Thaw, 2013

Other state highways within the study area include US-1, State Route 9, South Princeton Road, Grand Lake Stream Road, and Forest City Road. All of these roads transport regional commuters, freight, and tourists to and from US-1 and State Route 6.

There are two signal-controlled intersections in Calais, which were analyzed in the earlier CCC report. There are four signal-controlled intersections in Lincoln, none of which are expected to experience significant capacity problems within the foreseeable future. Flashing-light beacons are scattered throughout the study area at major road intersections. A speed-actuated flashing-light beacon is located ahead of a sharp curve on State Route 6 in Lee, to warn speeding drivers to slow down for safety. Since its installation the number of crashes at this location -- due to driver inattention, unfamiliarity with the road, and excessive speeds on the steep downhill approach to the village area -- have declined.

The two largest deficiencies in the existing highway transportation network, as identified in 2011 by CCC advisory committee members, were:

- Lack of sufficient passing lanes and paved shoulders to permit faster-moving freight and commuter traffic to safely and conveniently pass slower-moving tourist traffic and bicycles on US-1 and State Route 6. The committee would like to see a “Route 9 treatment” applied to State Route 6, with a wider cleared right-of-way to minimize animal collisions, more passing

lanes in hilly areas, and an eight-foot shoulder wherever feasible (and the widest possible shoulder in areas where this standard cannot be met).

- Need for more intensive maintenance and targeted improvements for ALL state-owned roads in the study area. Many of the rural collector roads are approaching a critical state of disrepair, because they have been passed over during the transportation project nomination process for decades. The reasons for this are many, including dwindling funding resources and higher priorities in the MaineDOT statewide biennial budget, increasing construction costs, and a candidate project rating system that awards higher points to roads in the arterial network. MaineDOT's maintenance crews have been clever and resourceful in their efforts to maintain the road system despite these constraints, but they may be reaching their practical limits.

Eastern Interior Corridor advisory committee members in the current planning process concurred that if MaineDOT could address these two major deficiencies, it would have a significant positive effect on tourism and economic development throughout the CCC and the EIC corridors.

2.1.5.2 Non-Motorized Transportation: Bicycles, Pedestrians, and Equestrians

Pedestrian facilities (sidewalks and crosswalks) are primarily concentrated in the downtown business districts of the larger municipalities: Lincoln and Calais. Baileyville also has downtown sidewalks that extend into some of its older residential neighborhoods, recalling the pre-automotive days when workers typically walked from their homes to their jobs in the mills, railroad yards, or downtown shops (and their children walked to school). The Passamaquoddy Indian Tribe at Indian Township has constructed a paved multi-user trail that offers pedestrians and bicyclists an alternative to US-1. A few other communities in the EIC provide sidewalk areas within their downtown villages, school zones, and other developed areas where pedestrian crossings are higher than average, but most of the smaller towns and unorganized townships in the study area simply lack the population density to justify the costs (both initial and ongoing) for new sidewalks and crosswalks. Princeton is currently updating their 1995 Comprehensive Plan and has identified installation of sidewalks along both sides of Route 1 from the Bridge over the Flowage all the way to the Elementary School as a very high priority for the town.

The condition of existing pedestrian facilities can vary greatly between communities within the corridor, and even between neighborhoods within each community. Some communities do not provide for municipal maintenance of sidewalks and crosswalk markings during winter months due to budget and manpower constraints; in a few communities, individual homeowners are expected to clear the portion of the sidewalk that runs in front of their homes. When sidewalks are not cleared of snow, pedestrians are forced to walk in or near the travel lane on the adjacent roadway, creating safety conflicts with vehicles that are intensified during low-visibility and icy conditions.

Bicycles provide an important transportation option for one-way trips of 20 miles or less, particularly for non-drivers and others without access to a personal vehicle. In recent years, MaineDOT has maintained a policy to widen shoulders during its rural highway reconstruction projects. This policy and rising

gasoline prices have contributed to a slight increase in on-road bicycling in rural communities, both within the EIC and statewide. However, an interrupted patchwork of poorly paved and unpaved shoulders continues to inhibit all but the most experienced and confident bicyclists from using state highways in the EIC for long-distance bicycle commuting or touring. This may be changing, however, as indicated by the increased number of bicycle-pedestrian border crossings.

Few people still use horses as their primary means of transportation, but equestrians are legal on all Maine roads unless specifically prohibited (typically on limited-access highways). Motor vehicles and bicycles are required to slow and yield to equestrians in the roadway, since horses can be unpredictable when startled. Equestrians are slightly better equipped to deal with variable shoulder widths and pavement conditions in the EIC than bicyclists, however, since horses can travel as well off-pavement as they can on a paved surface.

In rural areas where population density is too low for sidewalks to be a cost-effective option, paved shoulders provide additional safety and comfort for pedestrians and equestrians as well as bicyclists. Paved shoulders also provide a convenient area for slower-moving vehicles to move over and allow faster traffic to pass, and allow all motorists to pull out of the stream of moving traffic if they need to make a roadside stop. A paved shoulder width of 5 feet is recommended as a minimum design standard for safe and comfortable use by bicyclists, pedestrians, and equestrians on high-speed rural roads, although less than 5 feet is still better than no paved shoulder at all. A minimum of 8 feet of paved shoulder is the current national highway design standard to function effectively as a pull-off for vehicles while maintaining a sufficient lateral passing distance between stopped and moving traffic for safety. If this standard cannot be met along the full length of a highway due to right of way or paving cost considerations, it may be possible to construct occasional "pull-off pockets" with appropriate advance signage. However, bicyclists and pedestrians do not benefit from pull-off pockets, whereas motorists (both fast and slow) do benefit from widened shoulders. Therefore if widened paved shoulders are a feasible option, they are also the best option for serving the broadest range of motorized and non-motorized road users.

2.1.5.3 Transit Service

Limited public transit service within the study area is provided by the Washington-Hancock Community Agency (WHCA), under contract with the Passamaquoddy Tribal Government at Indian Township. WHCA operates a fixed-route public bus service each weekday from Indian Township to Calais and back, with intermediate stops upon request. One trip into Calais and two trips out are offered each day on each route, with a one-way ticket cost that can range from $2 to $8 depending on the length of the trip. In-town bus service is provided on weekdays in Calais from 9:30 a.m. to 1:00 p.m. for $2 per one-way ticket. WHCA also operates contracted on-demand paratransit services for MaineCare and disabled populations throughout Washington County, and coordinates a volunteer driving service to transport seniors and social service recipients to and from appointments and other errands (using the driver's personal vehicle); if space is available on board the paratransit vehicle, WHCA will accommodate non-

subsidized passengers and other destinations. For the Penobscot County portion of the EIC, Penquis Community Action Plan (CAP) provides on-demand paratransit service similar to WHCA's model, using its Lynx buses and volunteer drivers. Penquis CAP also offers rides to the general public on an as-available basis just as WHCA does, but the high cost, uncertainty, and need for a 24- to 48-hour advance request for a ride are barriers that prevent most members of the general public from even trying to use these services.

West's Transportation is a privately owned transit service based in Steuben that makes one bus run daily throughout the year from Calais to Bangor and back, via US-1 and US-1A. This service was well described in the CCC report.

Calais and Lincoln offer taxi service, but these services become very expensive for potential customers in more rural parts of the corridor. This minimal taxi service is a major deterrent to expansion of customers and services for the Princeton Municipal Airport. Visitors arriving via plane have no ground transportation options for leaving the airport. They must have a local contact to pick them up, make arrangements for a cab, or arrange delivery of a rental car to be waiting at the airport and pay a premium price for this service.

The First Light Transit System Steering Committee published a comprehensive report on the state of transit in Washington County with recommendations for future improvements and better coordination of public transit and passenger services, entitled ***Developing Community Access to Transit in Washington County*** (December 2010). Please refer to this study (http://www.gro-wa.org/transportation-and-housing) for additional background information and specific recommendations for transit improvements within and beyond the EIC.

The aging population is likely to increase demand for improved transit service over the next two decades. Eastern Maine is a popular retirement destination, and most of the population growth in rural Maine is occurring in older age groups; in fact, the median age in Washington County rose to 42.7, compared to 41.1 for all of Maine and 36.4 nationally (2010 US Census). Penobscot County has a comparatively young median age of 39.9 years, but this figure includes the Bangor metropolitan area and the large college-age population at the University of Maine and Husson College. In addition to retirees moving into the EIC, over half of the baby-boomer residents in the region will be in the 65-75 year age group by 2020. Seniors are living longer and healthier lives than in past generations, but degenerative eye diseases, slowed reflexes, and various cognitive dysfunctions of advanced age are not yet stoppable or reversible, so many seniors will have to eventually give up driving despite the many good years of living still ahead of them. As increasing numbers of otherwise healthy and independent retirees are forced to limit or stop their driving (either voluntarily or involuntarily), the demand for rural transit service will increase. Seniors without public transit service may be forced to leave their rural homes and move to the major service centers, where they can walk or use existing transit services to meet their daily needs.

2.1.5.4 Rail Service

There is no passenger rail service in the EIC study area, but there are two freight rail lines, both of which are subsidiaries of the Canadian conglomerate firm J.D. Irving. As depicted on Figure 1, the Eastern Maine Railway runs from St. Croix Junction in New Brunswick via the Vanceboro border crossing to Mattawamkeag Junction north of Lincoln, where it meets the Pan Am Railways line, with connecting service to other parts of Maine and points south and west. Continuing west, the Eastern Maine Railway meets up with the Maine, Montreal, and Atlantic (MMA) rail line in Brownville Junction, with connecting service to Aroostook County and points north and west.

The New Brunswick Southern Railway serves a small portion of the EIC study area in Calais and Woodland, although most of its trackage is on the New Brunswick side of the border. The Woodland Spur and a short segment of the easternmost section of the former Calais Branch of the old Maine Central Railroad (located between the Salmon Falls yard in Calais and St. Croix Junction in New Brunswick) remain operational in the US, and a cross-border interchange at Milltown Junction provides a connection via NB Southern Railway to the rest of the North American long-haul rail system on the Canadian side via St. Stephen, New Brunswick. The logistical difficulties with the existing Milltown Spur, and the strong regional support for a new rail-to-truck transloading facility that would allow rail shipments from the US and Canada to reach the deep-water port in Eastport, were discussed in detail in the previous CCC report. Although Eastport lies outside of the EIC study area, it is important to note that the capability to import and export products via Eastport is just as important for businesses in the EIC as it is for businesses in the CCC.

A thriving freight rail industry within the EIC would reduce travel demand on area highways by moving a larger portion of the corridor's existing freight traffic onto rail, thus decreasing point-to-point travel times for commercial truckers and prolonging the lifespan of area roads and bridges. However, the major challenge facing the railroad industry is a classic chicken-and-egg dilemma: the railroad companies need more heavy commodity shippers in order to survive and thrive, especially manufacturing industries with roughly equivalent demands for incoming supplies and raw materials vs. outgoing finished products; but manufacturers who can benefit from freight rail's advantages over commercial trucking are unlikely to start up or relocate their businesses in an area that does not already offer excellent rail service with direct connections to intercontinental markets and seaports. The most optimistic forecasts for the future of freight rail in eastern Maine rely on the likelihood of increasing gasoline prices over time, which would allow freight rail to become more economically competitive with commercial trucking even over relatively short distances (rail has always been the most cost-effective mode for longer trips and heavy loads). At a certain tipping point that will depend on each industry's product market and supply chain, gasoline prices are likely to trigger a shift in the cost-benefit ratio for national and regional businesses that currently ship their supplies and products via truck. The decrease in truck shipments and the corresponding increase in rail shipments at the border crossing indicate that some industries may have already reached that tipping point.

Across the international border, officials from the Canadian federal and New Brunswick provincial governments have announced that they plan to invest $18 million (to be matched by an additional $18 million from the Irving Transportation Group, owner of the rail lines) in infrastructure investments throughout the New Brunswick Southern Railway (NBSR) corridor. Proposed improvements include replacing and upgrading ties, steel rails, and bridges along the portion of the NBSR rail line that connects to the Calais Branch at Milltown Junction on the US side of the border.

2.1.5.5 Marine Transportation

There are no marine transportation facilities located within the EIC study area. However, the deep-water port at Eastport is critically important to many businesses in the EIC for the import and export of supply materials and finished products. Eastport was described in detail in the CCC final report, published in June 2011 (http://www.wccog.net/corridor-planning.htm).

2.1.5.6 Airports

Two airports and one seaplane base currently serve the study area. Princeton Municipal and Lincoln Regional are public-use, general aviation (GA) airports. Lincoln also serves as a seaplane base. Vanceboro Seaplane Base is used for water domestic and international water landings on Spednic Lake. Characteristics of these airports are provided in Table 9 below.

FACILITY	LOCATION	MAX. RUNWAY LENGTH	SURFACE	ELEVATION	CLASSIFICATION
Princeton Municipal	Princeton	4004 ft (1220 m)	Asphalt	266 ft (81 m)	General Aviation
Lincoln Regional	Lincoln	2804 ft (855 m)	Asphalt	195-206 ft (59-63 m)	General Aviation
Vanceboro Seaplane	Vanceboro	NA	Water	380 ft (116 m)	Seaplane Only

Table 9: Airports in EIC Study Area

Scheduled passenger and freight air services are not available within the EIC, so air travel must be specially arranged via charters or private aircraft. Lincoln Regional Airport is well-served by taxi and rental car service, but at Princeton Municipal Airport, arranging ground transportation can be a financial and logistical challenge: the closest taxi and car rental services are located 20 miles away in Calais. The other challenge facing small rural airports is a Catch-22 in current federal funding policy: federal grant money is available to make improvements to runways and airport support facilities at GA airports, but the reviewers like to see robust annual usage and growth statistics as the economic justification for awarding these funds. However, commercial and amateur pilots are less motivated to plan trips in and out of a small airport if its facilities are not already up to date and in good condition. The denial of

federal funds for needed upgrades causes further deterioration of the airport, making it less attractive to pilots, which in turn makes it less likely that the airport will qualify for federal funding in the next cycle, and so on.

The 2012-2013 Biennial Capital Work Plan for MaineDOT includes funding for two projects at Princeton Municipal Airport: a design project for Runway 15-33 safety improvements, including replacement of the edge lighting system and fencing, and a planning project to conduct environmental assessments for assembly of a master plan for future improvements. Lincoln Regional Airport was also slated for two improvement projects, including property easements, design, and permitting for Runway 17-35, and the removal of off-airport obstructions to expand the safety area around Runway 17-35.

2.1.5.7 Telecommunications

Telecommunication is not traditionally viewed as a transportation mode. However, in the modern globalized and computer-based economy, telecommuting is a viable and attractive work model that allows qualified individuals to live and work in any environment they choose. With sufficiently robust telecommunications service, the daily hassle and expense of a year-round commute from a rural town to a larger service center community can be replaced by the opportunity to live and work in an affordable and beautiful part of Maine. Work can be submitted, and payment received, electronically. Telecommuting has the potential to significantly increase the number of professionals living in the EIC, either as permanent or seasonal residents. Investments in telecommunications can also reduce the future travel demand on major highways within the EIC, since telecommuting allows significant economic activity to occur without placing any additional burden on the road system. This will help to preserve the working lifespans and carrying capacity of EIC roads and bridges. Finally, telecommunication is already making it possible to pursue higher education and obtain professional credits for certification in rural areas, thus improving overall educational levels and professional qualifications among working-age adults. The availability of a highly educated and skilled workforce is one of the primary factors that company executives consider in choosing new locations for their businesses.

Until recently, large portions of the EIC were identified as “dead zones” where cell phone coverage and broadband Internet capability were not available. Fortunately, with the installation of several new towers in recent years, even the hilly parts of State Route 6 west of US-1 can now receive wireless signals. Nonetheless, there is more work to be done. The communities to the east of US-1 still have large swaths of electronic “dead zone.” Susan Corbett, owner of Axiom Telecommunications, has set professional and personal goals to expand access to broadband Internet throughout all of Washington County and then throughout all of Maine. She maintains that visitors would make longer and more frequent overnight visits to Maine state parks if the park system offered free wireless Internet. She also advocates providing free wireless Internet at all public facilities and rest areas operated by the State of Maine. This is already the official policy in many other states.

The Three-Ring Binder Project is a statewide initiative to improve access to broadband Internet service so that Maine can remain economically competitive in the global marketplace. The initiative is also expected to stimulate small business growth and cottage-industry start-ups by entrepreneurs who can take advantage of high-speed Internet service to develop, market and sell their products. State officials have targeted Aroostook and Washington Counties as the regions where improved access to high-speed Internet service will create the greatest economic impact. Improvements are already underway in the Washington County portions of the EIC. The ultimate goal is to build the infrastructure for broadband service across the entire state. Cable and fiber-optic networks are being constructed primarily in and around the denser population centers, while rural service is typically provided via fixed wireless transmitters that are placed on cell phone towers. Additional towers and tower spaces will be needed to complete the project, and these will help address the remaining cell phone dead zones and broadband deficiencies. Generally speaking, the EIC currently has better coverage for both wireless phone and broadband connectivity than the north-south CCC.

2.1.5.8 Snowmobiles and ATVs

Snowmobiles and ATVs are classified as recreational equipment rather than vehicles, and therefore fall under the jurisdiction of Maine's Department of Conservation rather than its Department of Transportation. However, it is easy to make a case that in rural Maine areas like the EIC, they serve a valid transportation purpose. As recently as two decades ago, the same "recreational vs. transportation" debate was focused on bicycles, which today are recognized components of an integrated multimodal transportation system. Eastern Maine's glaciated landscape, high water table, and limited road network all contribute to the reality that many interior destinations are easier to reach – and in some cases, are only *possible* to reach – via snowmobile when the ground and surface water are frozen. ATVs have transformed many components of Maine's well-developed snowmobile trail system and the privately owned gravel roads through the industrial forestlands into a four-season wilderness highway network, and specially equipped ATVs have made it possible for many hunters, fishermen, and campers to maintain access to the remote spots they love despite physical disabilities that prevent them from walking long distances in rough terrain. There is ample evidence that Maine's motorized trail system is being routinely used throughout the EIC for transportation as well as recreation (e.g., going over to Grandma's for Sunday dinner via ATV, rather than driving there in the family car).

MaineDOT's budget does not cover the building and maintenance of snowmobile and ATV trails, but these trails certainly do contribute to regional economic development through four-season tourism, equipment and fuel purchases, and primary and vacation residence purchase. In addition, word-of-mouth advertising to fellow enthusiasts has helped to grow the ATV and snowmobile tourism market share in Maine. MaineDOT also has a vested interest in maintaining safe highway-trail crossings with good stopping sight distances, and therefore should take the needs of recreational trail users into account when upgrading a road section that contains a major trail crossing. Please contact the Maine DOC to obtain the most up-to-date map if you are planning a future snowmobile or ATV trip.

2.2. Land Use Elements

Washington County is a rural county in a rural state, with an average density of just 12.8 persons per square mile (2010 census) compared to 43.0 persons per square mile statewide. Penobscot County is also predominantly rural, with the exception of the urbanized region around Bangor and the densely developed downtown districts in many of its towns, including Lincoln within the EIC. Historical development patterns in the EIC have been characterized by widely dispersed land uses that make use of available natural resources, such as working forests and farmlands, interspersed with a few developed population centers near major highway crossroads and waterbodies.

Calais is the largest city in Washington County and the largest population center in the EIC, with a population of 3,180 in 2010. Calais provides shopping opportunities and services for rural communities in the eastern and southern portions of the study area, as well as for communities across the river in New Brunswick. Land uses in Calais include a community college, small hospital, professional and personal service providers, restaurants and lodgings, groceries, retail and discount stores, and a country club with a public 9-hole golf course. Nearby Baileyville is home to the large manufacturing mill complex operated by Woodland Pulp, LLC. Even though only one of the mills is currently operational, it is one of the largest employers in the greater Calais area.

Lincoln is the second largest population center in the EIC, with a population of 2,884 as of 2010. It serves as the major service center for all of the EIC communities along State Route 6. Land uses include a hospital, an airport, professional and personal service providers, restaurants and lodgings, groceries, Lincoln Pulp and Paper, retail and discount stores, and a public 18-hole golf course, plus a large number of year-round, seasonal, and short-term rental camps and recreational facilities on its many lakes.

Several other towns in the EIC, including Lee, Springfield, Danforth, Vanceboro, Princeton, and Baileyville, feature densely developed, mixed-use village centers surrounded by more rural land uses outside the village. However, most of the smaller incorporated towns, plantations, and unorganized territories in the EIC are completely dispersed with no defined center.

There is one Passamaquoddy reservation within the CCC study area, at Indian Township. It maintains its own elected governor, lieutenant governor, and tribal council; employs its own tribal government administrative staff; and establishes its own priorities for community and economic development, although it shares a common tribal identity, language, and culture with the other Passamaquoddy reservation at Sipayik (aka Pleasant Point), located outside the EIC study area. Indian Township is comprised of two relatively compact village areas surrounded by large tracts of water, wetlands, and undeveloped or lightly developed forestlands. The two Passamaquoddy tribal governments jointly hold additional trust lands scattered throughout the EIC, and the Penobscot Indian Nation on Indian Island in Old Town also holds tribal trust lands within the corridor. Most of the tribal land holdings are undeveloped or very lightly developed. The Passamaquoddy Tribe and the Penobscot Nation are sovereign national entities under US law, so they receive transportation funding directly from the

federal government rather than through the State of Maine. Tribal officials have worked jointly with MaineDOT and the Washington County Council of Governments (WCCOG) in past years to fund transportation projects of mutual benefit, either on tribal land or on state-owned roads or bridges that provide access to tribal land. They are also currently updating their Comprehensive Plan with the assistance of the WCCOG.

Land ownership patterns across the study area generally reflect the population distribution. In areas with relatively high population densities, land ownership patterns are characterized by small (less than one acre) residential lots and larger commercial lots. Lots also tend to be small in areas on and near waterbodies, where demand is high and acreage commands a higher price. Outside of the downtowns and village centers, lot sizes can range from an acre to several hundred acres or more. Many of the larger tracts are used for agriculture and forestry, including blueberry barrens, farm fields, private woodlots, and industrial (large-scale) working forests. Vast swaths of undeveloped land in the EIC study area are not feasible for residential or commercial development, because of proximity to waterbodies or wetlands, overly steep slopes, poorly-drained soils, shallow bedrock, or other topography constraints that make the site unsuitable for septic systems.

A relatively recent land use trend within the EIC is the shift of new development away from the coastal communities to more inland locations. Higher prices and declining availability of land along the Maine coast has made acreage in inland communities look more attractive to potential buyers, particularly for new residential development. However, most of the job market remains concentrated in the service centers, Calais and Baileyville to the southeast and Lincoln to the west. Therefore this trend may generate additional vehicular traffic in the EIC, particularly during morning and evening commuting hours, unless new home purchasers can find or create opportunities to generate income closer to their rural communities. A related land use pattern is the liquidation and sale of large parcels of former working forest lands; however, many of the purchasers of such tracts (or the subdivision lots created from them) are expected to build vacation or retirement homes, which generate fewer daily trips than primary residences.

Socioeconomic projections suggest that the historical pattern of low-density, piecemeal, and hopscotching residential and commercial development will continue within the EIC, creating a patchwork pattern of exurban residences, roadside small businesses and convenience stores, and undeveloped parcels along major highways in the corridor. The high cost of expanding sewer treatment capacity and municipal water supply (in the few village centers that currently provide these services) is likely to discourage the construction of new residential subdivisions with lot sizes of less than one acre, as well as any other intensive land uses in or near developed areas. This means that most development, both commercial and residential, will occur on lots in undeveloped or lightly developed areas with sufficient acreage to provide on-site well water and septic systems, and that driveways and curb cuts will continue to proliferate along state highways.

Many communities in eastern Washington County and central Penobscot County are less than enthusiastic about the idea of using zoning restrictions to help shape their future development patterns.

Apart from the state-mandated shoreline zoning regulations, only a handful of communities in the EIC have enacted comprehensive municipal zoning codes. While regulatory controls are not likely to significantly influence the interaction between land use and transportation in the EIC, non-regulatory solutions may play a more significant role. A combination of public and private land conservation efforts have already influenced the character of land use and limited the extent of exurban sprawl between Calais and Baileyville, and may have similar impacts on other areas within the EIC over the next two decades. Although transportation access management is never the primary reason for putting large tracts of land into conservation, there is no doubt that the lack of sprawling development within the boundaries of the Baring Division of the Moosehorn National Wildlife Refuge has helped to maintain mobility on this high-speed arterial highway (US-1/State Route 9). While the focus of regional land conservation projects may be on outdoor recreation, wildlife habitat, preserving agricultural lands and working forests, or all of the above, public land purchases and conservation easements may prove to be some of the most useful and enduring tools for ensuring transportation mobility in a rural landscape.

2.3. Social and Economic Elements

2.3.1 Washington County

Washington County is one of the poorest counties in Maine. Census data (2010) indicated that 20.6% of all households are living below the federal poverty line, with a median income that was less than 70% of the national average. Unemployment in Washington County for May 2013 (not seasonally adjusted) was 10.1%, compared to the Maine average of 6.9% and the national average of 7.5%. This figure underestimates the true employment profile in Washington County, as it fails to reflect the large number of underemployed workers (those who should be earning more than they currently do, based on their education or training, professional credentials, and prior work experience) and people who have given up on ever finding a job, and therefore are no longer tracked by the Maine Department of Labor (DOL). The largest industries in Washington County as of the fourth quarter of 2012 were:

- Health care and social assistance providers (1,848 employees),
- Retail trade (1,700 employees),
- Educational services (1,569 employees),
- Manufacturing (1,350 employees), and
- Public administration (892 employees).

Sorting the same list of industries in terms of the total wages paid to employees for the fourth quarter of 2012 yields the same top employment sectors, but a slightly different order, indicating the higher minimum educational attainment levels and correspondingly higher average wages paid to workers in health care, education, and government:

- Health care and social assistance providers ($17 million),
- Educational services ($12 million),
- Public administration ($11 million),

- Manufacturing ($10.5 million), and
- Retail trade ($10 million).

This represents a significant shift in the Washington County labor market since 2000, when manufacturing and retail trade ranked higher in the listings and social service providers were not even listed among the top employment sectors. The shift toward a more service-oriented economy may be indicative of an increasingly entrepreneurial and community-centered attitude among working-age adults in Washington County. Although it is also attributable to a decline in the availability of manufacturing and retail employment opportunities. The mean travel-to-work time for the county (2010 Census) is now 18.8 minutes, below the Maine state average of 22.7 minutes and well below the national average of 25.2 minutes.

Economic activity within the study area is primarily oriented around the regional service center community of Calais, with a secondary sphere of activity concentrated in Baileyville. The remaining economic activity is dispersed throughout the study area, with tourism, forestry, fisheries, and agriculture predominating.

A new industry that has entered the study area within the last decade is industrial-scale windpower at high elevations. Windpower development can be expected to benefit the regional transportation system over the long term, since it contributes a relatively large share of taxes and multiplier revenues to the regional economy despite a very small transportation footprint. Typically only one or two permanent access points are needed to connect a large-scale wind farm to a state highway, and the site generates very few annual trips following the initial construction and start-up period. Washington County has created a Tax-Increment Financing (TIF) District with windpower developer First Wind for its Stetson I and Stetson II windpower projects. TIF revenues can be reinvested in projects that stimulate regional economic development and provide start-up grants for economic initiatives in the Unorganized Territories. Studies for additional industrial and smaller-scale windpower developments are already underway within the EIC. Washington County also hopes to benefit from offshore windpower development through port shipments and manufacturing facilities that can produce engineered windpower components closer to the power generation sites than existing facilities overseas and in the western US.

2.3.2 Penobscot County

Penobscot County is more economically prosperous on the whole than Washington County, although its wealthiest communities are located outside the EIC study area. Census data (2010) indicated that 16.3 percent of Penobscot County residents were living below the national poverty line, with a median income that was approximately 91 percent of the national average. Unemployment in May 2013 (not seasonally adjusted) was 7.4 percent, compared to the Maine average of 6.9% and the national average of 7.5%. Once again, these figures are probably a low-end estimate, since they fail to account for underemployed residents and those who have given up on looking for work. In addition, an

examination of the unemployment rates for Penobscot County "Minor Civil Divisions" (i.e., towns, plantations, and unorganized townships) revealed that the average unemployment rate within the EIC is nearly 10 percent, well above the county average. The largest industries in Penobscot County as of the fourth quarter of 2012 were:

- Health care and social assistance (14,659 employees),
- Retail trade (11,963 employees),
- Educational services (9,403 employees),
- Accommodation and food services (5,502 employees), and
- Manufacturing (3,578 employees).

The industries paying the highest total wages in Penobscot County for the fourth quarter of 2012 were:

- Health care and social assistance ($173 million),
- Educational services (83.5 million),
- Retail trade (70 million),
- Manufacturing (41 million), and
- Construction (31.5 million).

These figures indicate that although tourism-related "accommodation and food services" jobs are plentiful in Penobscot County, they tend to pay lower average wages than the other large employment sectors. Conversely, the construction industry does not hire as many workers as the service sector, but skilled workers in this sector are more highly paid, making it the fifth highest industry by wage in Penobscot County. As in Washington County, the top two industries by wage are those requiring the highest levels of educational attainment for many of the available positions.

Lincoln is the service center community for all of the EIC communities along State Route 6, with a diverse economic base that includes a hospital, an airport, several national and regional chain stores in addition to numerous local merchants, food and lodging establishments, personal and professional services, manufacturing plants, and numerous other small businesses and commercial activities. Neighboring Lee is the host community for Lee Academy. This is a private high school that draws day students from throughout the EIC study area, plus boarding students from other parts of Maine, the nation, and foreign countries.

3.0 SCENARIO BUILDING

Scenario building provides a way to conceptualize and plan for alternate versions of what the future may bring, if certain observable trends and driving forces play a predominant role in shaping long-term regional economic development. Three different scenarios were developed to consider how transportation, land use, and economic development may interact over the next two decades.

These scenarios acknowledge the ways in which transportation and land use policy decisions can have multiple, cross-cutting effects on the region. They are presented to allow state, county and local decision-makers to consider the potential impact of policy decisions that will affect the multimodal transportation system within the EIC, as well as to consider targeted investments that will produce the greatest economic benefits for the region under each scenario.

These economic development scenarios describe three alternative visions for development of the EIC that could play out over the next 20 years. Consideration of one scenario does not necessarily exclude all of the elements and driving forces described in the other two. **In fact, overlap and synergy among multiple development scenarios over time are considered both likely and desirable**.

3.1 Development Scenario A: Natural Resource-Based Industries

Circa 2020: *The successful turnaround of the Woodland mill by Woodland Pulp, LLC, has led other firms to re-examine their business models and tap new and expanding overseas markets for Maine products from the forest, sea, and land. More natural resource-based products are now being shipped through Eastport than ever before. Meanwhile, both Lincoln Pulp and Paper and Woodland Pulp, LLC have continued to expand and consolidate their operations. Maine has developed a worldwide reputation as a producer of top-quality pulp and paper products, resulting in inquiries from new markets. Because it has contracted to ship 100% of all production from its current facility to China, Woodland decides to reopen and refit one of the two mothballed mills on its Baileyville site and expand its workforce accordingly to meet the growing demand for hardwood pulp in other export markets. Lincoln adds an extra shift to its production lines to keep up with market demand. This results in stepped-up shipments both by rail and by truck between the working forests, the mills, I-95, and the port at Eastport.*

In order to meet the increased demand for export pulp as well as expanded markets for wood chips, wood pellets for energy generation, board lumber, and value-added products such as wood-composite bridge sections and windmill blades, forests once slated for liquidation and sale to real estate development trusts (REITs) for redevelopment are now being reassessed as renewable and profitable revenue generators. A hiring boom for additional loggers, haulers, and forestry crews ensues, and the competitive hiring environment results in higher wages and improved working conditions for most forestry workers and better contract rates for trucking companies.

On the agricultural side, wild blueberries continue to be the predominant crop and demand continues to increase, with the help of a savvy and successful worldwide marketing program. The local food movement is picking up momentum, with weekly farmers' markets offered in Calais and Lincoln. Community Supported Agriculture (CSA) programs provide a new shipment of fresh vegetables (and in some cases, meat or poultry) to subscribing individuals and families each week through the growing season. Increasing numbers of area residents are willing to make cuts elsewhere in their budgets in order to pay higher unit prices for organic and locally grown products, and major grocery chains are responding to consumer demand by featuring a wide selection of local products on their shelves. Agricultural processing capacity in the corridor has also increased to keep pace with a growing statewide, national and international demand for Maine-made products. These trends are helping to support and stabilize the livelihoods of livestock and vegetable farmers, homemade jam and jelly producers, beekeepers, bakers, and manufacturers of organic animal-based products such as soap, woolens, cheese, sausage, and yogurt. A growing number of younger adults are starting new farms or apprenticing on existing farms, choosing a lifestyle that is more healthy, balanced, beneficial to society, and suited to raising young families than the traditional five-day workweek, and the Washington County Community College has added an agricultural business major to its curriculum. The farming lifestyle also continues to attract newcomers in the 40+ age range, many of them refugees from more urbanized and stressful careers in the corporate world. These older first-time farmers tend to view their agricultural activities as a lifetime early-retirement project, often regarding the necessary daily chores as a

time-consuming but rewarding hobby rather than a profit-making enterprise (although ideally, they hope it will be both).

The growth in the natural resource-based economy has corresponded with a steady increase in the volume of commercial trucking throughout the corridor. This in turn has exacerbated the need for significant repairs and at least some full-depth reconstruction of unbuilt backlog in the arterial and collector roads, which are crumbling even more rapidly under the additional loads. There is increasing congestion during summer months and increased friction between fast-moving freight trucks and slower-moving tourist traffic, including bicycle tourists, resulting in the nearly universal demand for widened shoulders, passing lanes, and truck climbing lanes on steep hills.

The number of annual rail shipments has increased to and from Woodland, offering a ray of hope for the eventual restoration of rail service from Woodland to a transloading facility in Perry. However, there is still not sufficient market demand to justify the restoration of rail service over such a short distance. Future prospects appear dim unless favorable exchange rates and lower shipping costs make it more cost-effective for a number of Canadian firms to ship their goods via rail-plus-truck to Eastport, rather than directly shipping them by rail to the docks at St. John, New Brunswick.

Comment: Freight trucking prices will have to rise far beyond current levels before a rail-to-truck transloading operation over such a short distance would start to make financial sense for the Woodland mill, even if it expands its operations. On the plus side, the port facility can expect to see increased trucking shipments under this scenario with or without the construction of a new transloading facility. However, the increased numbers of commercial freight trucks using State Route 190 to reach the port facility will also increase the political demand for an alternate route that does not funnel heavy trucks through the densely developed Sipayik Reservation.

3.2 Development Scenario B: Tourism

Circa 2020: *Tourism continues to develop as a major economic activity for towns in the EIC, and exciting new themed events are attracting additional visitors from the US, Canada, and abroad. Most visitors spend anywhere from $100 to $500 per day in direct expenditures for food, lodging, goods, and services during their stay in the EIC region. Those engaging in multi-day guided tours, eco-adventures, and cultural seminars are often willing to pay additional fees of $2500 or more for peak vacation experiences that will enrich their lives long after they return home, so they consider the money well-spent. Some tourists fall in love with the area and decide to move here, either permanently or seasonally. A few of the emerging trends in regional tourism include:*

- ***Ecotourism and natural resource-based recreation:*** *Traditional outdoor sporting camps, offering guided or unguided hunting and fishing trips punctuated by three (sometimes four) hearty home-cooked meals a day, continue to be popular in the EIC study area. Other visitors prefer to experience the natural world through wildlife-watching and photography, geocaching, journaling or blogging, and even outdoor spiritual practices such as yoga, meditation, and Tai Chi. A windpower-funded*

tax-increment financing (TIF) program to provide start-up grants for nature-based tourism initiatives in the unorganized territories has fostered a number of entrepreneurial businesses that attract different clienteles, ranging from birding tours and moose safaris, to spiritual retreat houses, to upscale all-inclusive wilderness resorts featuring a menu of educational and recreational activities to pursue over the course of a week-long visit, to Survivor-style back-country camping and rock-climbing expeditions aimed primarily at young and adventurous extreme-sports enthusiasts. A number of short, medium, and long regional hiking trail loops throughout the region, suitable for all ages and abilities, provide opportunities for parents to introduce their overly urbanized children to the joys of being surrounded by nature. Water-based recreation is more popular than ever, and the parking lots at popular boat landings are often filled by 8:00 a.m. For those who did not bring their own watercraft, numerous kayaking, canoeing, sailing, and other boating opportunities are available through local rental shops, guide services, and charter companies. The Baring Unit of Moosehorn National Wildlife Refuge remains a popular hiking and wildlife watching destination for many locals as well as visitors, and continues to develop its involvement as one of the partners in the annual Downeast Birding Festival that draws in avid birders from all parts of the country and overseas each May. Brochures available at state and regional visitor centers also highlight and describe a diverse array of public reserve lands and privately held land trust properties within the corridor, and invite visitors to enjoy an authentic wilderness experience that is simply not available elsewhere in the eastern US.

- ***Cultural tourism**: Many first-time and repeat visitors take a special interest in learning more about the area's history and culture. The Passamaquoddy Tribe offers guided canoe and hiking day trips, overnight canoe-camping trips, and artisan-led seminars and workshops that allow visitors to experience, practice, and gain insights into its rich tribal culture and traditions, passed down through centuries of living in harmony with the land and sea. Many historic homes have converted to operate as bed-and-breakfast inns, and if the story is compelling enough, the historical intrigue draws visitors just so they can brag that they stayed there. The Wabanaki Cultural Center is operating in downtown Calais for the summer and fall tourist season, supported by nominal admission fees. Designated scenic byways in the corridor highlight the history and culture of the region with interpretive signage at frequent pull-offs, and refer visitors back to the museum in Calais if they are interested in learning more.*
- ***Multimodal tourism:** Transportation impacts of tourism are no longer manifested through the demand for more and wider roads, but rather through increasing demand for "complete streets" (roads with shoulders, plus sidewalks in downtown areas with high pedestrian volumes, to provide adequate space for bicyclists and pedestrians) and transit service. Low-emission, on-demand jitney service (funded by a public-private collaboration between MaineDOT and the local chambers of commerce, using volunteer drivers from the local community) transports individuals and small groups to and from their desired destinations; GSA airports are among the most popular pick-up and drop-off spots, with a zone-based fare schedule depending on the point-to-point distances. Increasing numbers of US and international bicyclists are embarking on inn-to-inn, long-distance tours. Several outdoor adventure companies have branched out into offering shuttle rides for bicycle tourists who do not have the time or inclination to cycle back to their starting points, just as they have done for years with canoers; one firm also offers "sag wagon" services for bicycle trips*

(carrying bicycle tourists' bags and personal items forward from one inn to the next, so they do not have to be carried on the bicycle each day). While most visitors still tour the EIC in their personal vehicles or RVs, a growing number of tourists are now arriving via air, tour bus, or bicycle, and are then taking advantage of the available public and private transit services when and if needed. The car-free vacation is starting to become a real possibility in the EIC.

- ***Shoulder season tourism:*** (Note: "shoulder season" is the term traditionally used by innkeepers to describe the spring and fall periods between their peak season (June through September, in most parts of Maine) and the low-demand, low-rate off-season. Promotions that extend the shoulder season allow innkeepers and related tourist industries to increase their annual profits.) *The largely seasonal flow of tourist traffic continues to present challenges for all hospitality industry and tourism service providers, but snowmobile traffic from the ITS network provides significant winter and early spring revenue to restaurants and year-round lodging facilities located close enough to the trail system to attract their business. Many hospitality businesses still prefer to close their doors for the winter, and some operators make an annual commute south to open their other seasonal business, one that stays busy all winter but drops off come April or May, when they return to Maine. Retired baby boomer vacationers have helped to push the fall shoulder season back to the end of October, but tourism still falls off dramatically between November and April with the exception of the snowmobile clientele and a small number of cross-country skiers and snowshoers. May is still considered a shoulder-season month, but wildlife watchers and nature photographers, bicyclists, and boaters now keep the year-round lodging facilities and restaurants much busier than they used to be from about May 15 to the end of the month. Transportation demands have followed suit, with occasional congestion in downtown areas and at major intersections during peak summer and fall travel periods, followed by underutilization of the road network during the winter and early spring.*

3.3 Development Scenario C: Energy Development

Circa 2020: *Residents and businesses in the EIC have adapted to the decline of fossil fuel availability and increased fuel costs with a variety of large and small energy initiatives that have boosted the region's economy by stabilizing (and in some cases, even reducing) energy costs, and by making the EIC a more significant contributor to the state and regional energy grids. Large-scale windpower projects are now located in a number of high-elevation areas. Windpower is not as predictable as other power sources, so its varying output is balanced as needed by other power generation infrastructure in the region, including hydropower, solar power, and biomass plants. Surplus energy from wind turbines is used to charge electrical vehicles and to split water into oxygen and hydrogen, supporting a growing demand for clean, quiet hydrogen fuel cell technology that is used to heat area homes and businesses, as well as providing fuel at designated fill-up stations for the new hydrogen-powered vehicles.*

The University of Maine is collaborating with Washington County Community College (WCCC) and a consortium of private investors to start up a new state-of-the-art manufacturing facility in one of the Unorganized Territories. It will produce engineered windpower components for both on-shore and off-shore wind farms, including composite-material vanes that will be manufactured from wood harvested in the working forest lands of Penobscot and Washington County. Workers will be trained at

WCCC to assist engineers and scientists with highly complex and technical tasks involved in the design, manufacture, quality control, and preparation for final shipment of the windpower components. Their initial training program will count for six credit hours toward an associate's degree in industrial engineering technology at WCCC, and they can continue to take one or two employer-paid courses per semester (some of which will be offered via distance learning from the Orono campus, while others are delivered locally at WCCC) until they complete the 2-year degree program. This will provide a stepping stone for higher academic and career aspirations, since credits from the associate's degree can be transferred into any of the University of Maine's engineering technology bachelor's degree programs.

Biomass generators, primarily burning debris from logging operations, scrap wood, and solid waste, are good balancing systems for wind and solar systems that operate better in some weather conditions than in others. State-of-the-art closed-system technology produces clean and efficient heat to power the generators, with virtually no remaining ash to landfill and no contaminating emissions. Biomass generators have also offered many EIC communities an economically attractive and environmentally friendly alternative to shipping their solid waste to more distant landfills or waste-to-energy incinerators.

Several new transmission lines have been installed to carry electricity from power generation sites to the regional New England Pool power grid. Land clearing for these transmission lines has created new corridors and access for traditional outdoor recreational activities. Surplus energy not used within the region will be marketed to the New England Pool. This will reap additional revenues for the utility's owner, and under its operating contract a designated percentage of revenues from outside power sales must be used to reduce the utility's direct pass-through costs to consumers. This policy (in addition to the supply of reliable, affordable, multimodal power) has already resulted in reduced or stabilized local energy prices, making the EIC region more competitive for energy-intensive businesses such as paper and wood products, mining, manufacturing, high-tech greenhouse food production, and more.

Geothermal heating systems, now standard design features in most new housing units and commercial buildings, have reduced the demand for fossil fuels to meet household and commercial heating needs. Home weatherization grants for low-income households and a popular zero-interest energy efficiency loan program open to all Mainers have enabled many households and businesses to retrofit and upgrade their existing buildings for increased energy efficiency. More efficient technology for small-scale wind, solar, and in-stream hydroelectric applications, along with improvements to power transmission and delivery systems, have created more opportunities to develop small-scale local electrical generation plants that will allow municipalities and businesses to invest in distributed generation from local renewable energy sources. Residents in the EIC study area, even many who initially had qualms about industrial-scale energy development so close to their own backyards, now feel a sense of pride and patriotism about the fact that they are able to meet nearly all their energy needs with Maine-produced energy, rather than depending on foreign oil and indirectly supporting unfriendly and undemocratic regimes in the Mideast.

Comment: The major transportation impacts under this scenario are increases in the number of transmission wires and the construction of gas pipelines. Spot improvements will be required on some

area roads and intersections to allow flatbed trailers containing oversized windpower generation components to maneuver between the port facility (or local manufacturing plant) and their final destinations. An accelerated program of pavement management and possibly full road reconstruction in unbuilt sections may be needed, if volumes of heavy and overweight freight shipments (for example, granite) increase between the raw material extraction site, the manufacturing facility, and the final over-the-road destination. Depending on the location of possible mining operations and the cost of fossil fuels under this scenario, rail service might be a more cost-effective option for moving the material over most of the distance from the mine to the plant and then down to the port, which will help to build the case for a rail-to-truck transloading facility in Perry. As in the previous scenario, the port is likely to benefit from an improved manufacturing base whether or not the transloading facility is constructed. However, it is possible that the port facility would need to plan for more covered storage space on its Estes Head site if energy development predominates, since large-scale wind farm project managers often request that the components be kept in covered long-term storage buildings on the pier over the winter months. This allows the project manager to stockpile all of his or her components as multiple cargo ship deliveries are made, and protect them from the winter weather. Once all the frost is out of the roads, typically by mid-May, all the stockpiled components are shipped to the site on flatbed trucks. If multiple large-scale windpower projects are scheduled for installation during the same upcoming construction season, the demand for covered winter dockside storage to stockpile components could be very high and could make it difficult to find storage for other cargos.

3.4 Final Comments regarding the Scenarios

Some readers may be uncomfortable with the substance and magnitude of some of the changes proposed under each of the development scenarios. However assuming the status quo will continue is not likely either. Even if we made a formal recommendation for MaineDOT to take no further actions and make absolutely no transportation investments in the EIC over the next 20 years, powerful driving forces (as outlined in Section 1.3) and the absence of federal and state funding assistance would still transform the region in significant ways. Local and state policies and planned development programs can and do make a difference. To this end, the final section of this corridor management plan provides the advisory committee's prioritized goals and strategies for targeted transportation investment to enhance regional economic prosperity. There are also several policy recommendations in the areas of transportation, land use, and economic development that are intended to streamline local and state implementation of the plan and reduce costs.

4.0 GOALS, STRATEGIES, AND RECOMMENDATIONS

The final step in the advisory committee's analysis of three scenarios was to identify the demands that each scenario would place on the system, develop goals to satisfy those demands, and then develop strategies to achieve each goal.

4.1 Development Scenario A: Natural Resource-Based Development

The major demands on the transportation system under this scenario are:

- Increased volumes of loaded freight trucks traveling over deficient sections of area roads, including unbuilt sections of US-1, State Routes 168, 169, and 170, and the unnumbered collector roads which are already in a critical state of disrepair
- Increased reliance on rail to ship heavy, non-perishable materials
- Increased use of the port at Eastport
- Potential conflicts with bicyclists, pedestrians, equestrians, slower-moving tourist traffic
- Increased turning traffic movements by large trucks at warehouses and collection points for manufactured goods and agricultural products

Transportation investment goals proposed by the committee to promote this scenario are:

1. Minimize friction between transportation modes.
2. Minimize friction between vehicles traveling at different speeds.
3. Maintain good pavement on major roads.
4. Upgrade deficient secondary roads so they can stand up to heavier trucking use.
5. Improve connectivity between all regional freight modes (air, rail, truck, port).

Finally, the committee developed strategies to meet these goals, and evaluated them by expected timeline (short, medium, or long), and by expected cost (low, medium, or high). The criteria for establishing timelines were as follows:

- ***Ongoing program (i.e., MaineDOT is already doing this),***
- ***Short term (can be implemented immediately or within the next 5 years),***
- ***Medium term (likely to take 6-10 years to implement),***
- ***Long term (Will take 10+ years to implement).***

The investment strategies proposed to promote natural resource-based development, and any amplifying additional comments offered by the committee, were as follows:

1. Widen shoulders during road improvement projects whenever possible. ***Ongoing program, low to medium cost***
2. Focus on maintaining good pavement management of existing roads. ***Ongoing program, low cost – good bang for the buck!***
3. Continue to work on funding and construction of an intermodal truck-to-rail transloading facility to improve freight shipping capability to and from Eastport. ***Long term, high cost***
4. Practice good access management to support greater traffic mobility on arterial highways, even within urban compact areas. ***Ongoing program, low cost – practically free, except for political difficulties in securing shared entrance agreements between business owners***

4.2 Development Scenario B: Tourism

The major demands on the transportation system under this scenario are:

- Slower-moving, less predictable traffic
- Increased numbers of bicyclists and pedestrians (and possibly more equestrians)
- Increased demand for public boat landings
- Increased demand for improved access to public land and trails

Transportation investment goals proposed by the committee to promote this scenario are:

1. Showcase Maine's natural beauty and tourist attractions, while maintaining mobility for commuters and commercial traffic (e.g., scenic byways program).
2. Maintain good pavement on major roads.
3. Improve safety and connectivity of designated routes and trails for bicycles, pedestrians, and equestrians.
4. Increase the number of public access points and parking areas adjacent to trail systems, boat landings and scenic vistas.

The investment strategies proposed to promote tourism development, and any amplifying additional comments offered by the committee, were as follows:

1. Widen shoulders during road improvement projects whenever possible. ***Ongoing program, low to medium cost***
2. Focus on maintaining good pavement management of existing roads. ***Ongoing program, low cost – good bang for the buck!***
3. Provide additional scenic pull-offs, picnic areas, rest areas, and public toilet facilities for corridor users. ***Medium-term, low-to-medium cost; may be an opportunity for siting and maintenance of toilet-equipped rest areas on private lots that want to attract business to site, as with toilet facility adjacent to Airline Diner on State Route 9. Also, need to test demand for toilet service: are there really not enough existing private toilet facilities open to the public (i.e., gas stations, restaurants, convenience stores) within the corridor?***
4. Increase funding for passing lanes, scenic byways, multi-user trails, and designated motorist, bicycle, and pedestrian touring routes within the corridor, such as the proposed International Lakeland Trail from Lincoln to Fredericton, New Brunswick. ***Short to medium term, medium cost***
5. Coordinate with DOC to improve access to public lands, boat landings, parking lots for trails, and safety at road-trail crossings; build these into the design for road improvement projects wherever appropriate. ***Short term, low cost***
6. Improve wayfinding signage to tourist destinations, perhaps as public-private partnerships with regional businesses or Chambers of Commerce. ***Short term, low cost***
7. Improve infrastructure at GA airports, particularly the ground transportation options, and promote GA airports and private air services as the quickest and most convenient way to travel in and out of the region. ***Medium term, high cost***

4.3 Development Scenario C: Energy Development

The major demands on the transportation system under this scenario are:

- Oversize/overweight components must travel via road to reach windpower sites; may require spot improvements on area roads to enable wide turning movements
- Increased demand for covered storage and handling infrastructure at seaport, to stockpile windpower generator components over winter shipping season

Transportation investment goals proposed by the committee to promote this scenario are:

1. Support new development while maintaining mobility for existing highway users.
2. Maintain good pavement on major roads.

The investment strategies proposed to promote energy development, and any amplifying additional comments offered by the committee, were as follows:

1. Widen shoulders during road improvement projects whenever possible. ***Ongoing program, low to medium cost***
2. Focus on maintaining good pavement management of existing roads. ***Ongoing program, low cost – good bang for the buck!***
3. Increase funding for seaport infrastructure investments to handle and stockpile large volumes of oversized windpower components. ***Long term, high cost***

It should be noted that widening shoulders and observing good pavement management practices were listed as the top two investment strategies to meet the challenges of all three economic development challenges, and that both programs are already being implemented by MaineDOT for a relatively low to medium cost. Where finances and right of way considerations permit, the construction of passing lanes (particularly on steep hills) and two-way left-hand turning lanes (TWLTLs) in areas of heavy turning traffic could also help to minimize friction between faster-moving and slower-moving traffic under all three economic development scenarios. However, the focus of this study has been on the long-term management of existing transportation assets, rather than on capacity-building and new construction.

4.4 Policy Recommendations

The advisory committee also offered some general policy recommendations for MaineDOT and local government officials, regardless of which economic scenario turns out to be closest to becoming reality over the next two decades. These were also evaluated, using the same timelines and cost estimates as were used to evaluate investment strategies. The policy recommendations are as follows:

1. Ensure adequate and predictable annual funding streams for all regional transportation projects; seek out opportunities for public-private, tribal-state, and interagency funding partnerships. ***Short to long term, variable cost depending on project mix and available partnerships***
2. Reinstate the program to reduce the backlog of structurally deficient state roads, and seek regional stakeholder input to prioritize these remedial projects within each CREST. ***Long term, high cost***
3. Expand rural public transit service to reduce travel demand and assist non-drivers, including an aging population base. ***Long term, high cost***
4. Include regional telecommunications services and activities of the 3-Ring Binder Project in utility coordination for major bridge projects; provide wireless service at roadside rest areas. ***Short term, low cost to install conduit, in fact virtually free, as broadband company pays the extra cost for materials; medium cost to provide wireless service, unless donated by service provider***
5. Continue work toward construction of an intermodal rail-to-truck facility to bridge the gap between working rail lines and Eastport. ***Long term, high cost***
6. Continue existing MaineDOT policy of purchasing abandoned railroad rights of way, in order to preserve the option of restoring rail service at a later date. ***Ongoing, high cost***
7. For municipal officials: Help close the wireless broadband and cell phone gaps by supporting new cell phone tower construction where needed, and by agreeing to requests to attach fixed-wireless broadband repeaters on the existing cell phone towers within your jurisdiction. ***Short to long term, low cost other than political fallout from people who are opposed to cell phone towers.***
8. For municipal officials and planners in the larger communities: Consider developing or redeveloping moderate-to-upscale apartment or condominiums as senior housing, located close to the core of a traditional village-style downtown, as a land use that makes sense for transportation demand management. These centrally located units could provide multiple advantages for the residents, local municipalities, and regional transportation system, including the following:
    - Give seniors an attractive alternative to maintaining a single-family home outside of town, particularly for those who can no longer drive themselves to appointments, shopping, or social outlets;
    - Free up existing rural housing stock for new owners, reducing the need for new rural lot development that can lead to exurban sprawl and reduced transportation mobility;
    - Provide work for local construction companies and real estate agents;
    - Help aging baby boomers transition easily and gracefully to a car-free lifestyle, without any feelings of embarrassment or loss of independence;
    - Help to revitalize downtown areas with new pedestrian traffic and a sense of neighborhood pride and camaraderie among residents;

- Attract and retain seniors who want to live in a small community within walking distance or taxi distance of services;
- Encourage area natives who have moved out of state to return home after they retire, thus adding to the local and state tax base.

APPENDIX A:

EASTERN INTERIOR CORRIDOR MANAGEMENT PLAN
LIST OF COMMUNITY ADVISORY COMMITTEE MEMBERS, STAKEHOLDERS, AND OTHER INTERESTED PARTIES

Name	Affiliation or Organization
Dora Adams	Washington County Community College
Dana Altvater	Dana Altvater, Inc.
Diane Barnes	City of Calais
Linda Belfiore	Washington Hancock Community Agency
Mark Berry	Downeast Lakes Land Trust
Rick Bronson	Town of Baileyville
Brent Bubar	MaineDOT Maintenance Region 5
Tim Call	Town of Baileyville
Harold Clossey	Sunrise County Economic Council
Susan Corbett	Axiom Technologies, LLC
Marla Dana	Passamaquoddy Tribe at Pleasant Point
Michael Day	Maine Dept. of Labor Career Centers, Calais Region
Chris DeBeck	Lincoln News
John Devin	MaineDOT Maintenance Region 4
Tom Doak	Small Woodlot Owners of Maine
Gary Dubovick	The Lakeside, Princeton
Sandi Duchesne	Greenlight Solutions, LLC
Judy East	Washington County Council of Governments
Editor	Calais Advertiser
Betsy Fitzgerald	Washington County Government
Chris Gardner	Eastport Port Authority
Jeffrey Gifford	Maine House of Representatives (R-Lincoln)
Scott Harriman	Downeast EMS
David Herrick	Town of Princeton
Brian Higgs	Baskahegan Company
Michael Hinerman	Washington County Emergency Management Agency
Crystal Hitchings	Washington County Council of Governments
Roger Holst	PCT Communications
Billy Howard	Due East Real Estate; Princeton Airport Authority
Alan Hutchinson	Forest Society of Maine
Julie Jordan	St. Croix Valley Chamber of Commerce
Jay Kamm	Northern Maine Development Commission
Louise Labossiere	Town of Vanceboro
Ron LaPlant	Murray-LaPlant, Inc.
Bill Lawrence	Town of Lincoln

Name	Affiliation or Organization
Lee Selectmen	Town of Lee
John Leighton	Town of Princeton
Matt Lewis	Four Directions Development Corporation
Bruce Lindberg	Lee Academy
Brian Longstaff	Northern Maine Development Commission
Sharon Kiley Mack	Washington County Reporter, Bangor Daily News
Joyce Maker	Maine House of Representatives (R-Calais)
Roger McIver	Woodland Pulp, LLC
Fred Michaud	Maine Dept. of Transportation, Bureau of Planning
John Noll	Eastern Maine Development Corporation
Tony OBerst	Town of Princeton and Princeton Municipal Airport
Alain Ouellette	J.D. Irving (rail and commercial trucking divisions)
Abby Pond	St. Croix International Waterway Commission
Jim Porter	City of Calais
Dean Preston	UT Manager, Washington County Government
Brad Prout	Bluebird Ranch Trucking
Wayne Seidl	Town of Waite
Tracy Shaw	Maine Salmon Rivers
M. Todd Smith	U.S. Border Patrol, Ports of Entry from Vanceboro to Bucksport
Nan Sprague	Grand Lake Stream Chamber of Commerce; Hazelwood's Properties (serving private camp owners and renters)
Deborah Theriault	Town of Danforth
Gail Thornton	Town of Talmadge
Topsfield Selectmen	Town of Topsfield
Beth Turner	Maine House of Representatives (R-Burlington)
Bob Tyler	Passamaquoddy Tribe at Indian Township
Doreen Wallace	Town of Princeton
Robert Watson	MaineDOT Maintenance Region 5
Donna Worden	Town of Princeton

APPENDIX B:

EASTERN INTERIOR CORRIDOR MANAGEMENT PLAN
WRITTEN AND ORAL COMMENTS ON THE DRAFT FINAL REPORT

List of attendees at the June 28, 2013 public meeting to present the draft final report:

Name	Affiliation
Sandi Duchesne	GreenLight Solutions, LLC
David Sleeper	Resident of Mattawamkeag
Wallace H. Lindahl	Resident of Carroll
Mary Lindahl	Resident of Carroll
Curtis A. Rushton	Town of Topsfield

In addition to the oral comments from the public meeting, three additional comments were received via e-mail. All comments are included in the summary below.

1. I have a recommendation for a change in the traffic laws. Bicyclists should travel like pedestrians, facing traffic, especially on high-speed roads. The rule that they should ride on the right dates back to the 1880s, when bicycles were the fastest thing on the road. Today with higher-speed vehicles, it's just too dangerous to ride a bicycle and not be able to see the traffic coming up from behind you.
Comment: This has been studied a lot, both in Maine and elsewhere in the country. All of the scientific studies prove that it is still MUCH safer to bicyclists to ride on the right with traffic, where they can be seen and passed easily. Bicycles traveling against traffic are difficult for drivers to see when turning at driveways and side roads, and this is a common cause of serious crashes and fatalities. Hit-from-behind crashes are rare – in fact the most common crash scenario for a bicyclist traveling with traffic is the "right hook," when a motorist makes a sudden right turn directly in front of a bicyclist. However, right-hook crashes are also rarer and generally less serious than those involving wrong-way bicycle travel.

2. Maine needs to either look at reducing state truck weight limits, or face reality and improve the pavement on state highways so they can handle the heavier trucks. It's rare these days for new pavement to last even two years before it starts cracking up again.
Comment: This is a very difficult situation, with no good solutions at the present time. Many roads need to be rebuilt from the base up, but there is not enough construction funding to go around. And if you reduced the weight limits by 20 percent, it would take five trucks instead of four trucks to transport the same load. That would be a major economic hardship for Maine businesses and their suppliers.

3. I completely agree that we need widened and STURDY paved shoulders wherever possible, especially on State Route 6. Shoulders help everyone – through truckers, local residents, tourists, bicyclists, and pedestrians. The existing shoulders on State Route 6 are crumbling away, creating a dangerous soft-shoulder situation that could result in an overturned vehicle… and forget about using them for bicycling in their current condition.
Comment: Noted.

4. The report presents a growth scenario for more windpower in this region over the next 20 years. I think we need to study the windpower industry more closely. Is it really building the economy as much as advertised? Is the economic benefit worth destroying the beautiful views? I didn't move to Maine to look at windmills.
Comment: Noted.

5. There is a pipeline that runs from Searsport to the old Loring Air Force Base, and it passes right through Mattawamkeag. There have been people out there looking at the pipeline recently. Are they planning to reuse it for something other than jet fuel?
Comment: Bangor Natural Gas purchased the right to use the Loring pipeline and its above-ground right-of-way in 2012. They recently signed a deal with Lincoln Pulp and Tissue, LLC, to extend a compressed-gas pipeline to the Lincoln plant to reduce its energy costs.

6. Regarding page 25, the State of Maine (Department of Conservation) has recently added a $5.00 surcharge to the registration fee on snowmobiles to help with trail maintenance.
Comment: Noted.

7. I will bet the conversations have been interesting, and I'm sorry I have been unable to attend in person. The scenarios are creative and not all that far out of the realm of possibility in my mind.
Comment: Noted.

8. There is growing support in Washington County leadership circles for developing a viable alternate route to the current State Route 190 that bisects the Passamaquoddy Reservation at Sipayik (Pleasant Point). That would also make it easier to provide future rail access directly to the port at Eastport.
Comment: The port in Eastport lies outside the EIC study area, but all EIC stakeholders agreed that marine transportation via Eastport is vital to the economic interests of the EIC. Direct rail transportation to the port is neither economically nor logistically feasible at present, but public-private investment and a rerouting of State Route 190 could make it feasible in the future. Passamaquoddy tribal leaders have said that they would like to discontinue the existing State Route 190 to reduce through traffic and restore natural tidal flow to the waters adjacent to the Sipayik reservation, so a viable alternative corridor for State Route 190 (possibly with a parallel rail line) could prove highly beneficial for state, regional, and tribal stakeholders.