

1 **7.8 LAND USE**

2 **7.8.1 INTRODUCTION**

3 This section characterizes land uses in the New England Region and describes some land use on
4 the Canadian side of the border that could be affected by some U.S. Customs and Border
5 Protection (CBP) activities. For example, construction projects that introduce noise and light
6 pollution along the border could affect the suitability of land to support its current or planned use
7 on both sides of the border. Other actions, however, such as direct removal of land from existing
8 uses for CBP-related infrastructure construction, would not affect the Canadian side. The U.S.
9 Geological Survey (USGS) and Natural Resources Canada (NRC) define land cover and land use
10 classifications.

11 **7.8.2 AFFECTED ENVIRONMENT**

12 This section describes land use and cover for the New England Region. The summary tables
13 characterize land use and cover according to the USGS Multi-Resolution Land Characteristics
14 Consortium (MRLC) National Land Cover Database (NLCD) and USGS's Gap Analysis
15 Program (USDOI, 2001; USDOI, 2010). The summary tables for Canada summarize land use
16 and cover according to NRC's advanced very high resolution radiometer (AVHRR) land cover
17 data and NRC's protected-areas data on regions of 10 sq km or larger compiled by the Canadian
18 Council on Ecological Areas (CCEA) (NRC, 2009; NRC, 2007).

19 **7.8.2.1 Land Cover and Related Land Uses in the New England Region**

20 The New England Region covers about 26 million acres, approximately 78.7 percent of the land
21 area of the states in the region (Maine, New Hampshire, and Vermont). The most prevalent land
22 cover type within the study area is forested (72.0 percent). Forests cover the vast majority of the
23 study area in each state, as well. Water/wetlands (12.4 percent) are the next most prevalent land
24 cover type (Table 7.8-1). Generally, the land cover within the study area is representative of the
25 land cover profile of each of the region's states.

1 **Table 7.8-1. Land Cover in the New England Region**

Border State		Total Land Area (Thousands of Acres)	Developed (%)	Cultivated Crops (%)	Pasture/ Hay (%)	Herbaceous (%)	Forested (%)	Water/ Wetlands (%)	Snow/Ice/ Barren Land* (%)
Maine	Study Area	18,252	2.6	2.1	1.3	0.8	70.8	14.5	7.9
	Statewide	20,798	3.5	2.1	1.8	0.8	70.0	14.5	7.3
New Hampshire	Study Area	2,975	3.7	1.3	1.3	0.3	85.0	6.0	2.4
	Statewide	5,928	7.5	1.2	3.3	0.3	78.1	7.3	2.2
Vermont	Study Area	4,650	5.4	5.3	10.6	0.2	68.4	8.3	1.8
	Statewide	6,150	5.3	4.3	9.9	0.2	71.7	7.0	1.6
New England Region	Study Area	25,877	3.2	2.6	3.0	0.7	72.0	12.4	6.2
	Selected States	32,876	4.5	2.4	3.6	0.6	71.8	11.8	5.3
TOTAL United States**		2,053,000	5.0	21.9		14.1	31.2	27.7	

2 The New England Region includes all areas 100 miles south of the U.S.-Canada border in Maine, New Hampshire, and Vermont.

3 * “Barren Land” includes the NLCD land classification “Shrub/Scrub.”

4 ** Data for the United States as a whole are shown as calculated in USEPA, 2008. This report sums land cover categories for cultivated crops and pasture/hay to
 5 account for total agricultural cover, and sums snow/ice, barren, and wetlands land cover. This table aggregates the USEPA, 2008 calculation of water and
 6 shrub/scrub land cover with their category of snow/ice/barren/wetlands, though water alone covers 1.6 percent of the land area in the United States, while
 7 snow/ice/barren/wetlands cover 5.7, and shrub/scrub covers 20.4 percent.

8 Source: (USDOI, 2001).

1 The study area includes a high percentage of forested area relative to the entire country; the
2 levels of herbaceous land cover and agricultural land (cultivated crops and pasture/hay) in the
3 study area are low compared to the Nation. The study area has a similar percentage of
4 snow/ice/barren and water/wetlands relative to the country as a whole, and slightly less
5 developed area than the country.

6 Figures 7.8.1 and 7.8.2 show maps of land cover and use in the New England region.

7 Recreation also occurs on other land not specifically designated for the activity and land other
8 than that profiled in Section 7.17 (Recreation), which focuses specifically on major Federal
9 recreation sites. For example, wildlife viewing or hiking may be permitted on some conservation
10 or natural areas in the study area. In addition, hunting and snowmobiling may occur on public or
11 private forested land areas. Absent information on the specific distribution of recreational
12 activities across the landscape, this analysis relies on the above categories of land as a low-end
13 estimate of the area in which recreation is likely taking place.

14 Recreational land use in the New England Region accounts for about 516,000 acres or 2.0
15 percent of total land area, which is less than the share of recreational land use for the country as a
16 whole (10.1 percent) (Table 7.8-2). Parks and recreation departments of the various states
17 manage just under half of the recreation land in the region; Baxter State Park in Maine is the
18 largest single area. The National Park Service (NPS) manages just under 80,000 acres; another
19 75,000 have private conservation landowners. Cities are also significant recreation landowners
20 in this region, constituting 30,000 acres of recreational land, much of which is in Maine. Section
21 4.17 discusses the potential impacts of CBP's activities on recreational lands. Appendix I
22 provides the recreational profiles of major U.S. Federal and Canadian recreation areas in the
23 study area.

24 Conservation areas in the New England Region account for about 2 million acres or 7.8 percent
25 of total land area (Table 7.8-3). This percentage is significantly lower (about half) of the
26 proportion of conservation land countrywide. State land management departments manage the
27 greatest amount of conservation land in the New England Region where conserved areas are
28 generally numerous and small.

1

Table 7.8-2. Recreational Land Use in the New England Region

Border State		Recreational Land Use* (Thousands of Acres)	Share of Recreational Land Use (%)
Maine	Study Area	370	2.0
	Statewide	444	2.1
New Hampshire	Study Area	100	3.4
	Statewide	794	13.4
Vermont	Study Area	46	1.0
	Statewide	491	8.0
New England Region	Study Area	516	2.0
	Selected States	1,729	5.3
TOTAL United States		208,088	10.1

2 The New England Region includes all areas 100 miles south of the U.S.-Canada border in Maine, New Hampshire,
3 and Vermont.

4 * Recreation lands all lands clearly identified by USGS title of land type as intended for recreation (e.g., parks,
5 scenic areas, or recreation areas).

6 Source: (USDOJ, 2010).

7

Table 7.8-3. Conservation Land Use* in the New England Region

Border State		Conservation Land Use (Thousands of Acres)	Share of Conservation Land Use (%)
Maine	Study Area	1,259	6.9
	Statewide	1,278	6.1
New Hampshire	Study Area	501	16.9
	Statewide	739	12.5
Vermont	Study Area	271	5.8
	Statewide	658	10.7
New England Region	Study Area	2,031	7.8
	Selected States	2,675	8.1
TOTAL United States		300,149	14.6

8 The New England Region includes all areas 100 miles south of the U.S.-Canada border in Maine, New Hampshire,
9 and Vermont.

10 * Conservation lands are all lands clearly identified by USGS title of land type as intended for conservation (e.g.,
11 reserves, preserves, conservation land, natural areas).

12 Source: (USDOJ, 2010).

1 **7.8.2.2 Land Cover and Related Land Uses in the Areas North of the New England Region**

2 This section considers resources north of the border from the New England Region extending 2
3 miles into Canada. This area covers about 1.85 million acres (Table 7.8-4). Over 90 percent of
4 the area north of the New England Region is forested. Pasture/hay is the next most prevalent
5 type, although it only constitutes 4.3 percent of the land area, followed by water/wetlands, which
6 make up just over 3 percent. Much like each of the provinces in the study area, and the country
7 as a whole, the study area has a large proportion of forested land, and low proportions of
8 developed areas, agricultural lands (though greater amounts of pasture/hay than cultivated
9 crops), and water/wetlands. The study area has a low proportion of snow/ice/barren land as
10 compared to Canada as a whole.

1

Table 7.8-4. Land Cover in Canada North of the New England Region

Border Province		Total Land Area (Thousands of Acres)	Developed (%)	Cultivated Crops (%)	Pasture/ Hay (%)	Forested (%)	Water/ Wetlands (%)	Snow/Ice/ Barren (%)
New Brunswick	Study Area	288	0.0	0.0	4.3	89.6	5.9	0.3
	Province	18,065	0.2	0.0	1.8	95.7	1.0	1.3
Nova Scotia	Study Area	1,068	0.0	0.0	0.0	97.9	2.1	0.0
	Province	13,816	0.4	0.0	5.0	89.7	1.6	3.2
Quebec	Study Area	495	0.0	0.0	13.6	83.1	3.4	0.0
	Province	301,185	0.1	0.0	2.6	56.2	5.8	35.2
Selected Provinces	Study Area	1,851	0.0	0.0	4.3	92.6	3.1	0.0
	Total for Selected Provinces	333,067	0.1	0.0	2.7	59.8	5.4	32.0
TOTAL CANADA		2,071,476	0.1	1.7	6.0	46.7	7.3	38.2

2 * The areas north of the New England Region in Canada include the portions of New Brunswick, Nova Scotia, and Quebec provinces extending 2 miles north of
3 the U.S.-Canada border.

4 Source: (NRC, 2009).

1 Table 7.8-5 indicates that no areas are identified as recreational land in the areas north of the
 2 New England Region in contrast to the proportion of recreational land use in Canada as a whole
 3 (6.1 percent).

4 Table 7.8-6 shows that conservation areas in the areas north of the border from the New England
 5 Region make up about 129,000 acres, or about 6.9 percent of the total study area, which is
 6 greater than the proportion of conservation areas in the country as a whole (4.7 percent).

7 **Table 7.8-5. Recreational Land Use in Canada North of the New England Region**

Border Province		Recreational Land Use (Thousands of Acres)	Share of Recreational Land Use (%)
New Brunswick	Study Area	0	0.0
	Province	162	0.9
Nova Scotia	Study Area	0	0.0
	Province	353	2.6
Quebec	Study Area	0	0.0
	Province	2,166	0.7
Selected Provinces	Study Area	0	0.0
	Total for Selected Provinces	2,681	0.8
TOTAL CANADA		126,389	6.1

8 *Areas north of the New England Region in Canada include the portions of New Brunswick, Nova Scotia, and
 9 Quebec Provinces extending 2 miles north of the U.S.-Canada border.

10 Source: NRC, 2007.

11 Note: Recreation lands are all lands clearly identified in the NRC dataset as intended for recreation, for example,
 12 described as parks or recreation areas.

1 **Table 7.8-6. Conservation Land Use in Canada North of the New England Region**

Border Province		Conservation Land Use (Thousands of Acres)	Share of Conservation Land Use (%)
New Brunswick	Study Area	23	8.1
	Province	389	2.2
Nova Scotia	Study Area	87	8.1
	Province	1,361	9.9
Quebec	Study Area	19	3.8
	Province	17,325	5.8
Selected Provinces	Study Area	129	6.9
	Total for Selected Provinces	19,075	5.7
TOTAL CANADA		98,234	4.7

2 *Areas north of the New England Region in Canada include the portions of New Brunswick, Nova Scotia, and
 3 Quebec provinces extending 2 miles north of the U.S.-Canada border.

4 Source: (NRC, 2007).

5 Note: Conservation lands are all lands clearly identified in the NRC dataset as intended for conservation; for
 6 example, described as reserves, preserves, protected areas, habitat areas.

Figure 7.8-1. Land Cover in the New England Region

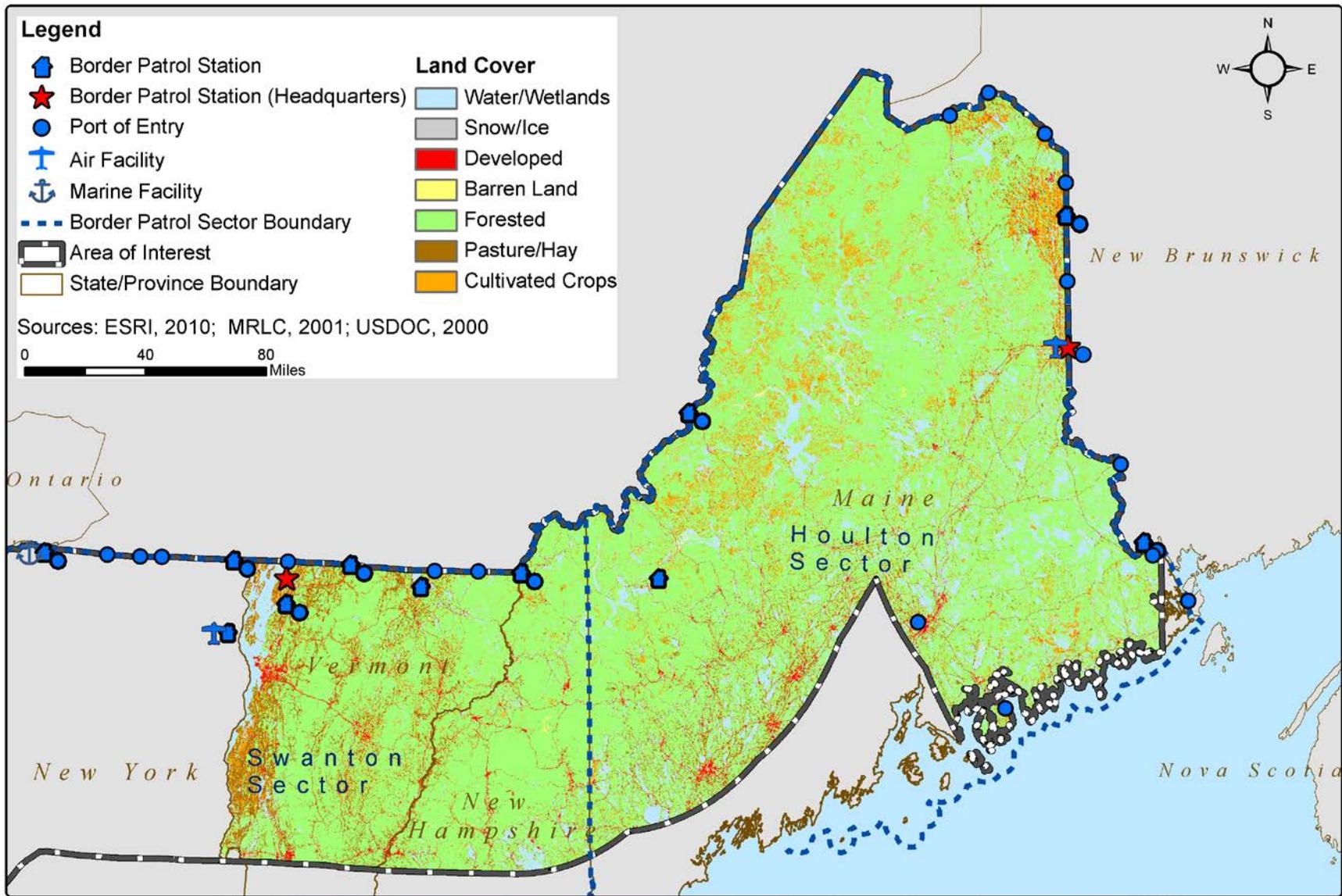
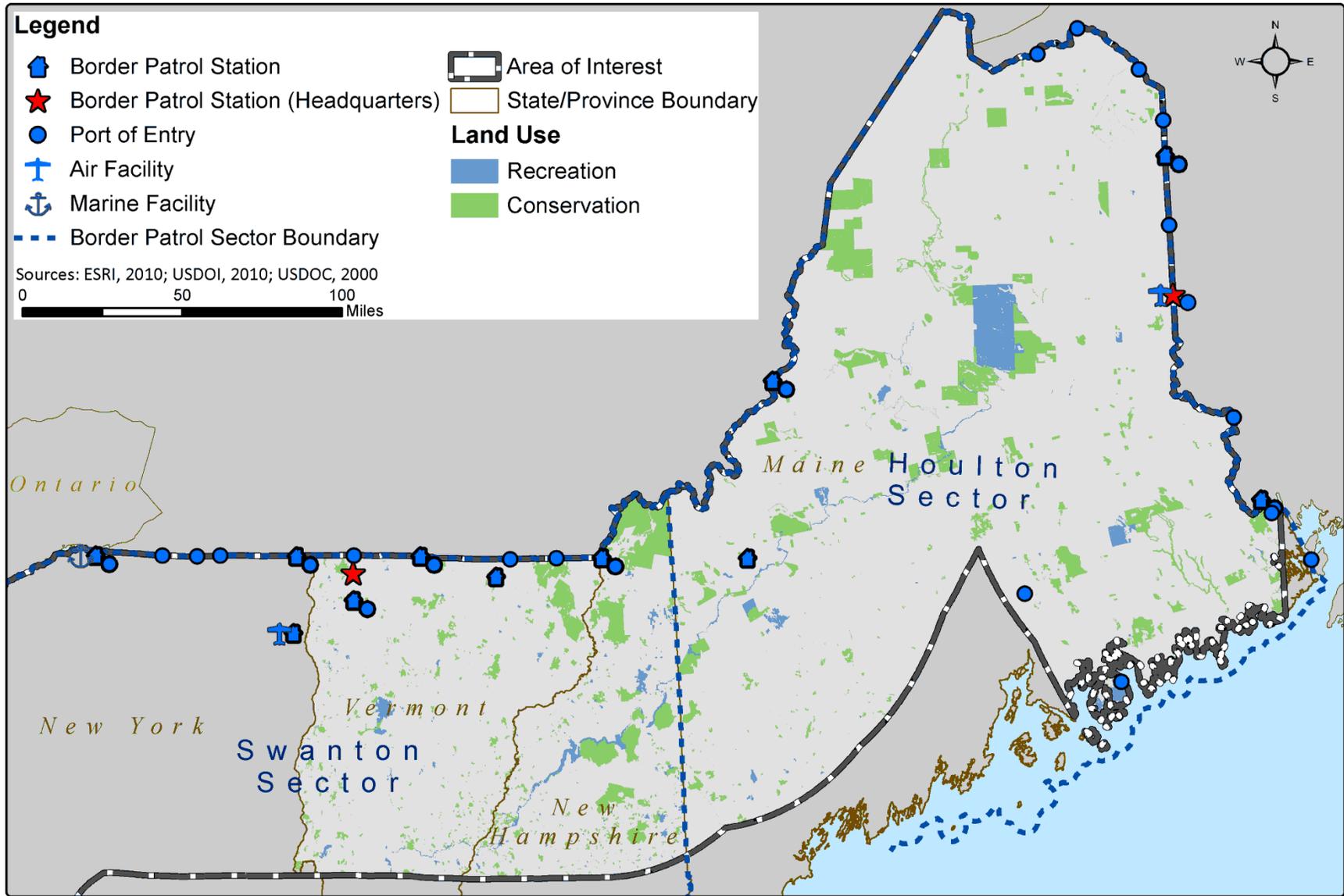


Figure 7.8-2. Land Use in the New England Region



1 **7.8.2.3 Land Ownership in the New England Region**

2 The major categories of land ownership in the New England Region in the United States are
3 Federal (4.4 percent), state (5.2 percent), and private (11.0 percent) (Table 7.8-7). Tribal lands
4 were not identified in this region. Only about 20.6 percent of the New England Region is
5 classified according to landowner, thus this discussion is subject to significant gaps in landowner
6 information. Federal lands include national parks, national forests, conservation areas, and
7 military lands, and are managed by the Bureau of Land Management (BLM), Bureau of
8 Reclamation (BOR), Department of Defense (DOD), Department of Energy (DOE), U.S. Fish &
9 Wildlife Service (USFWS), U.S. Forest Service (USFS), NPS, or are classified as “other Federal
10 land.” State lands are properties owned by state departments of conservation, departments of
11 land, departments of natural resources, departments of transportation, fish and wildlife, historical
12 societies, state land boards, parks and recreation, or classified as “other state land.” Tribal land
13 accounts for regions owned by Native American tribes and are recognized by the Federal
14 government. Federal laws and the Constitution grant Tribal Nations greater sovereignty than that
15 granted to state or local governments. Private lands are those owned by the Audubon Society,
16 the Rocky Mountain Elk Foundation, The Nature Conservancy (TNC), private universities, other
17 conservation groups, or private non-profits, or classified as “private conservation
18 easement/conservation deed restriction,” “private conservation land,” or “private institution–
19 managed for biodiversity.”

20 The New England Region includes about 1.1 million acres of Federal land, accounting for 4.4
21 percent of land ownership. The USFS manages the majority of Federal land in this region, much
22 of which sits within New Hampshire’s White Mountain National Forest. In addition, the
23 USFWS and the NPS each manage slightly under 100,000 acres.

24 Approximately 1.4 million acres of state land are in the New England Region, accounting for 5.2
25 percent of land ownership. The State Department of Conservation in Maine is the largest state
26 landowner in the region, with about 640,000 acres, much of which is state trust land. The Maine
27 and Vermont state parks and recreation agencies own another 400,000 acres. The share of state
28 land ownership in the region is nearly half that of the United States as a whole.

29 Native American issues in this region are identified and discussed in Section 7.11 of this report.

30 The New England Region includes about 2.8 million acres classified as private land. The
31 majority of this private land occurs in Maine (2.1 million acres) in over 50 private conservation
32 refuges, easements, sanctuaries, forests, and preserves. The share of private land ownership in
33 the study area is substantially greater than the share of private land ownership for the country as
34 a whole. Figure 7.8-3 maps known landowner types across the New England Region.

1

Table 7.8-7. Land Ownership in the New England Region

Border State		Federal Land		State Land		Tribal Land		Private Land	
		Thousands of Acres	Share (%)	Thousands of Acres	Share (%)	Thousands of Acres	Share (%)	Thousands of Acres	Share (%)
Maine	Study Area	180	1.0	923	5.1	0	0.0	2,135	11.7
	Statewide	194	0.9	972	4.7	0	0.0	2,159	10.4
New Hampshire	Study Area	757	25.5	129	4.3	0	0.0	302	10.2
	Statewide	781	13.2	224	3.8	0	0.0	501	8.4
Vermont	Study Area	201	4.3	303	6.5	0	0.0	415	8.9
	Statewide	446	7.2	355	5.8	0	0.0	507	8.2
New England Region	Study Area	1,139	4.4	1,356	5.2	0	0.0	2,852	11.0
	Selected States	1,421	4.3	1,552	4.7	0	0.0	3,167	9.6
TOTAL United States		657,885	32.0	189,314	9.2	100,574	4.9	15,918	0.8

2 *The New England Region includes all areas 100 miles south of the U.S.-Canada border in Maine, New Hampshire,
3 and Vermont.

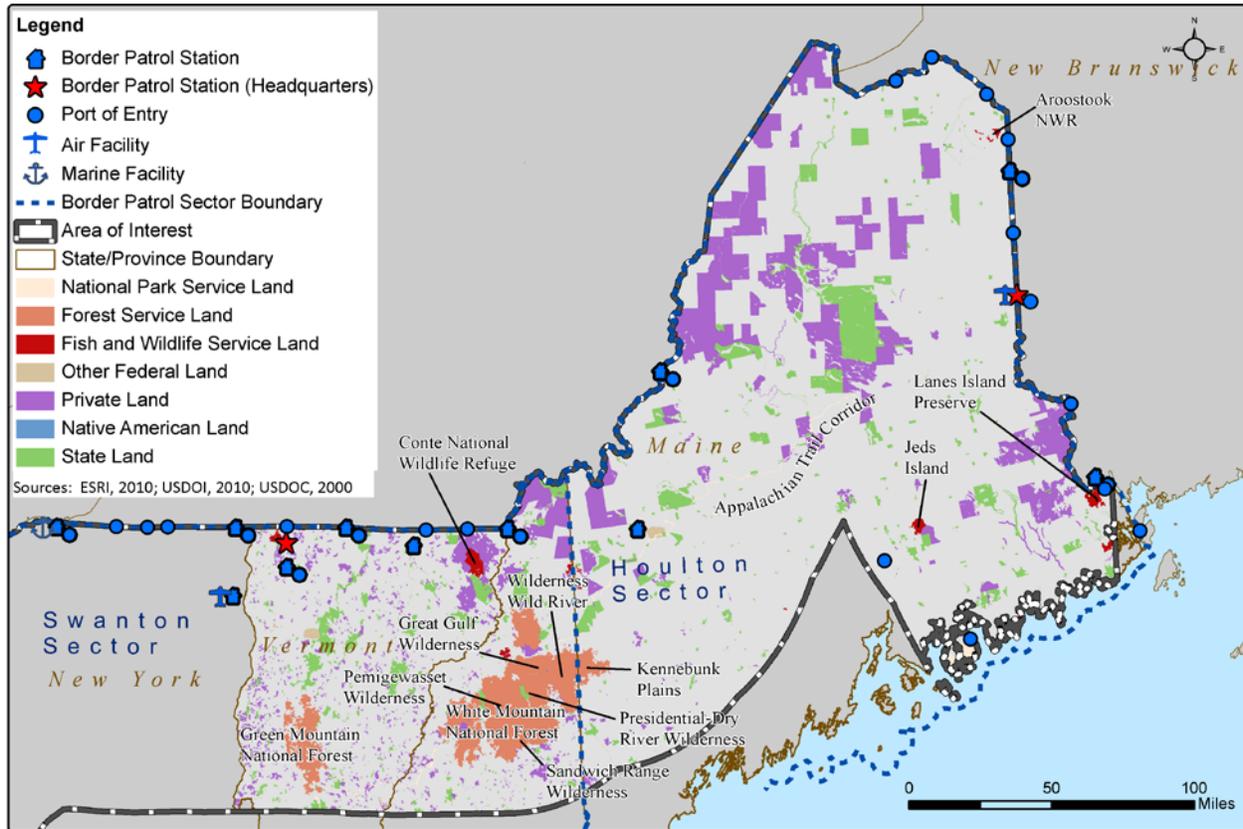
4 Note: For a complete discussion of Native American resources along the Northern Border, refer to Section 7.11 of
5 this report.

6 Note: Land ownership estimates do not add up to 100 percent for a given area due to gaps in information regarding
7 land ownership within border states.

8 Source: (USDOJ, 2010).

1

Figure 7.8-3. Land Ownership in the New England Region



2

7.8.2.4 Land Ownership in Canada North of the New England Region

Federal and provincial land ownership is characterized using the protected areas data compiled by NRC. As a result, ownership (excluding aboriginal lands) is only determined for about 10.8 percent of the entire land area of the country. The following discussion, therefore, reflects only the relatively small portion in Canada for which landowners are identified.

The share of Federal land ownership in Canada north of the New England Region is significantly less than that throughout the country, as highlighted in Table 7.8-8 (0.1 percent in the region versus 4.8 percent in the country). Proportionally, provincial ownership in the region is similar to that in Canada as a whole.

Aboriginal land is characterized using NRC data of Indian reserves, land claim settlement lands, and related aboriginal designations. As shown in Table 7.8-9, the share of aboriginal land in the areas in Canada north of the border from the New England Region (0.4 percent) is less than the share of aboriginal land countrywide (7.4 percent).

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Table 7.8-8. Land Ownership in Canada North of the New England Region

Border Province		Federal Land		Provincial Land	
		Total Land Area	Share (%)	Total Land Area	Share (%)
New Brunswick	Study Area	0	0.0	23	8.1
	Province	128	0.7	423	2.3
Nova Scotia	Study Area	0	0.0	87	8.1
	Province	931	6.7	783	5.7
Quebec	Study Area	2	0.3	17	3.5
	Province	655	0.2	18,837	6.3
Selected Provinces	Study Area	2	0.1	127	6.9
	Total for Selected Provinces	1,714	0.5	20,043	6.0
TOTAL CANADA		98,844	4.8	125,779	6.1

2 *Areas north of the New England Region in Canada include the portions of New Brunswick, Nova Scotia, and
3 Quebec provinces extending 2 miles north of the U.S.-Canada border.

4 Source: (NRC, 2007).

5 Notes: Federal lands are all lands with the designation national park, migratory bird sanctuary, national wildlife area,
6 Prairie Farm Rehabilitation Administration, and marine protected area. Provincial lands are all lands designated
7 under provincial administration, which often includes funding and support from Federal agencies.

8 **Table 7.8-9. Aboriginal Lands in Canada North of the New England Region**

Border Province		Aboriginal Lands (Thousands of Acres)	Share (%)
New Brunswick	Study Area	1	0.3
	Province	40	0.2
Nova Scotia	Study Area	2	0.2
	Province	29	0.2
Quebec	Study Area	5	1.1
	Province	1,015	0.3
Selected Provinces	Study Area	8	0.4
	Total for Selected Provinces	1,083	0.3
TOTAL CANADA		152,965	7.4

9 *Areas north of the New England Region in Canada include the portions of New Brunswick, Nova Scotia, and
10 Quebec provinces extending 2 miles north of the U.S.-Canada border.

11 Source: (NRC, 2010).

1 **7.8.2.5 Land Use Management**

2 As noted in Chapter 3, for projects on non-Federal lands, CBP will comply with state and local
3 land use regulations where applicable or where not specifically preempted from doing so, as long
4 as such compliance does not impede execution of its congressionally mandated mission.

5 **7.8.2.6 Consistency with Enforceable Policies of the Coastal Zone Management Act**

6 In the New England Region, CBP’s activities in Maine have coastal zones relevant to the
7 Northern Border and will have to comply with the appropriate state “enforceable policies”
8 outlined below. Most CBP activities in the state coastal zones are expected to fall in the
9 negligible to moderate range and to comply with the Federal consistency requirements and
10 procedures established by the individual states, identified below for Maine.

11 **Maine**

12 Maine’s Northern Border coastal zone includes the inland line of coastal towns on tidewaters and
13 all islands in the 100-mile zone of interest south of the border. The State Planning Office (SPO)
14 administers the Maine Coastal Zone Management Program (CZMP) and enforcement of state
15 laws that affect the coastal zone. CBP’s activities that affect the coastal zone must be consistent
16 with the following enforceable state policies that are part of the Maine Coastal Program (MSPO,
17 2006):

- 18 • Natural Resources Protection Act;
- 19 • Mandatory Shoreline Zoning Law;
- 20 • Site Location of Development Law;
- 21 • Erosion Control and Sedimentation Law;
- 22 • Storm Water Management Law;
- 23 • Subdivision Law;
- 24 • Marine Rivers Act;
- 25 • Maine Waterway Development and Conservation Act;
- 26 • Coastal Management Policies Act;
- 27 • Protection and Improvement of Air Law;
- 28 • Protection and Improvement of Waters Act;
- 29 • Nutrient Management Act Land Use Regulation Law;
- 30 • Maine Hazardous Waste, Septage and Solid Waste Management Act;
- 31 • Nuclear Facility Decommissioning Laws;
- 32 • Oil Discharge Prevention and Pollution Control Law;
- 33 • Marine Resources Law;
- 34 • Coastal Barrier Resources System Act;
- 35 • Marine Endangered Species Act; and

- 1 • Fee schedule.
- 2 “The Maine Guide to Federal Consistency Review” contains the procedures for demonstrating
- 3 consistency with the enforceable policies of the Maine CZMP (MSPO, 2006).

1 **7.9 AESTHETIC AND VISUAL RESOURCES**

2 **7.9.1 INTRODUCTION**

3 Visual resources include those features that define the visual character of an area—natural
4 features, vistas, or viewsheds, and even urban or community visual characteristics that include
5 architecture, skylines, or other characteristics. Visual resources and aesthetics are important due
6 to their unique qualities and the responses they inspire in humans. This section provides the
7 analytical tools to conduct a precise visual impact assessment for future site-specific projects or
8 activities; it also offers examples of the types of landscapes that exist along the border. It
9 analyzes how, in which settings, to what extent, and with which viewer groups the various U.S.
10 Customs and Border Protection (CBP) activities might create visual impacts. It does not
11 characterize every potential vista or visual landscape along the entire Northern Border, but does
12 provide guidelines for minimizing, mitigating, or avoiding such impacts.

13 The Visual Resource Management (VRM) system developed by U.S. Bureau of Land
14 Management defines the visual sensitivity of an area and the potential effect of a project on a
15 visual resource. It assigns ratings of Classes I to IV based on combinations of scenic quality,
16 sensitivity levels, and distance zones (for the Framework for Characterizing Resource Impacts on
17 the Northern Border, see chapter 3, section 3.9).

18 **7.9.2 AFFECTED ENVIRONMENT**

19 **7.9.2.1 Affected Landscapes**

20 Four broadly defined landscapes occur within the potential settings of the proposed project.
21 These four landscapes are: natural, rural, urban, and industrial (USDOT, 1999), and are briefly
22 described below.

23 **Natural Landscapes**

24 Natural landscapes are those in which natural landforms and vegetation predominate, and signs
25 of human activity are not apparent (USDOT, 1999). Coastlines, water bodies, mountains, and
26 areas of varied relief are the most striking and tend to be the most conspicuous. Some natural
27 landscapes are designated specifically for outdoor recreation. The Bureau of Land Management
28 (BLM), U.S. Forest Service (USFS), U.S. Fish and Wildlife (USFWS), National Park Service
29 (the NPS), and state and local parks own most of these recreational lands. This region has a
30 considerable amount of forested area; Maine, for instance, is 70.8 percent forested. As in the
31 western United States, geological landforms, such as mountains, rock outcroppings, ridges,
32 escarpments, and valleys, dominate the natural landscape. Even where significant topographic
33 relief occurs, the heavily forested landforms are undistinguished and tend to confine a viewer’s
34 attention to the immediate foreground. Many of these landscapes would fall into the “A”
35 category for scenic quality and thus be sensitive to visual modifications. Tower facilities would
36 be least compatible within a natural landscape; however, in forested areas that offer a diverse
37 skyline or visual screening, the visibility of towers would tend to be lower.

1

Saint John Valley, Maine



2

Source: (USDOJ, 2006).

3 **Rural Landscapes**

4 Rural landscapes include features such as croplands, orchards, fields, fences, and farm-related
5 structures (USDOT, 1999). While border POEs and USBP stations along the U.S.-Canadian
6 border tend to be in rural, less densely populated areas well outside of major cities, the majority
7 of the population in the study area lives in larger population centers. Agricultural areas are
8 predominantly flat or gently rolling hills; these landscapes tend to be restricted to valleys and
9 lowlands and are not typically found at higher elevations or in areas with complex topography.
10 Native vegetation grows in confined areas where land is steep or soils are unproductive. Views
11 may extend for some distance, with vertical elements typically consisting of relatively low farm
12 buildings, silos, water towers, utility poles, and trees. Distinct geometric patterns, such as
13 rectangular or circular fields and property boundaries divided by section lines, may characterize
14 the landscape. Towns are small and have relatively low skylines. In general, the few structures
15 in such areas can be of aesthetic interest. Agriculture greatly influences the landscape. Land-use
16 groups can sometimes categorize different agriculture practices. Other rural areas include forests
17 or desert, which are influenced by roadways, the presence of small towns, and land-clearing
18 activities, such as timber harvesting, strip mining, ski areas, and large reservoirs.

19 **Urban Landscapes**

20 These landscapes represent only a fraction of the Nation's entire land area, but are the dominant
21 visual environment of roughly three-quarters of the American population (USDOT, 1999).
22 Residential and suburban areas represent much of the urban landscape, with centralized primary
23 commercial centers and business districts defining the most dominant visual characteristics. The
24 scale of development in major urban areas is large and dominated by structures, highways,
25 infrastructure, and trees. Urban landscapes can absorb a great degree of visual change because
26 they already contain commanding visual features. Most urban landscapes are clustered around

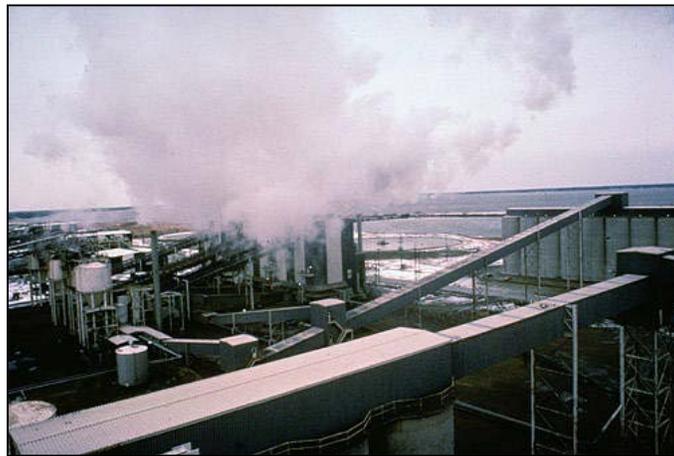
1 areas of usable natural resources, such as waterways. Most of the major cities cluster around
2 ocean access. Although these large urban areas are not the most significant features in the New
3 England Region, they still represent the visual setting for the largest portion of the population.
4 Here, as well as along other parts of the border, the POEs and USBP stations are more situated in
5 rural areas. These landscapes already contain sizable amounts of infrastructure and would be able
6 to absorb a greater amount of change and more additions to the visual environment than rural or
7 natural landscapes. The largest concern in urban landscapes is the number and sensitivity of the
8 visual user groups (see Section 7.9.2.3).

9 **Industrial Landscapes**

10 Heavy and light industrial landscapes tend to be scattered, situated in specific zones or districts,
11 such as along roads and waterfronts or near airports. Unlike the Great Lakes Region, relatively
12 few industrial landscapes exist along the Northern Border in the New England Region. Such
13 landscapes can absorb the greatest degree of visual change, due to existing dominant visual
14 features and their generally low visual quality (“C” category). These landscapes are usually
15 classified as Visual Resource Class IV in which major changes to the visual environment can
16 occur without major impacts to the visual environment or viewer groups.

17

Industrial Plant on River



18

Source: (USDOJ, 2008).

19 **7.9.2.2 Areas with High Visual Sensitivity**

20 Visual sensitivity refers to the level of viewer awareness and the value placed on a particular
21 scene. Some areas have a high degree of visual sensitivity, usually due to their unique visual
22 features or their use by recreational users. The BLM considers these areas as Visual Resource
23 Class I in terms of scenic quality. Typically, highly sensitive areas are significant to the general
24 public. In these areas, most modifications to the visual environment would result in a major
25 adverse impact and any visual impact should be avoided or mitigated if possible. Natural areas
26 with Federal or state protection often fall into this category. Unlike the western states, the New
27 England Region does not have as large a proportion of public lands sensitive to visual impacts.

28 **7.9.2.3 Affected User Groups**

29 Specific viewer groups within the study area can gauge viewer sensitivity and assure the
30 selection of appropriate representative viewpoints during the visual impact evaluation. While

1 POEs and USBP stations along the U.S.-Canadian border are generally in rural, less densely
2 populated areas outside of major metropolitan areas, most of the population in the study area
3 lives in larger population centers. The following four categories of viewer/user groups were
4 identified within the study area. In the United States, approximately 2.2 million people live in
5 the NE Region (Table 7.10-1). The segment of the population living in border communities
6 accounts for 67.5 percent of the population living in the New England Region states of Maine,
7 New Hampshire, and Vermont. Maine has the largest population living in the region, about 1.2
8 million people. The border communities in New Hampshire and Vermont are less populated.

9 **Commuters and Through Travelers**

10 These viewers pass through the study area on a regular basis in automobiles on their way to work
11 or other destinations. On most roads within the study area, the views are from street level.
12 Typically, drivers have limited views of CBP's infrastructure and activity, except at locations
13 where CBP's actions cross the road. Commuters and through travelers are typically moving,
14 have a relatively narrow visual field due to roadside vegetation or structures, and generally are
15 preoccupied with traffic and navigating the roadways. For these reasons, commuters and
16 through travelers' perception of (and sensitivity to) visual quality and changes in the visual
17 environment are likely to remain relatively low. Passengers in moving vehicles, however, have
18 greater opportunities for off-road views of a project than do drivers. The New England Region
19 has a relatively low amount of commuter and urban traffic although the Calais, POE is one of the
20 top ten busiest POEs on the Northern Border (see Traffic and Roadways, Section 7.16.2).

21 **Local Residents**

22 These individuals may view the proposed actions from stationary locations, such as yards and
23 homes, and while driving along local roads. The sensitivity of residents to visual quality varies
24 and may be tempered by a viewer's exposure to existing CBP actions and infrastructure and
25 other visually varied features already in existence. Presumably, most residents will be highly
26 sensitive to changes in the landscape viewable from their homes and neighborhoods. CBP also
27 considers visual impacts to Native American sacred sites or trust resources before carrying out a
28 project.

29 **Business Employees**

30 These individuals work at local businesses, primarily in the commercial portions of the study
31 area. Business employees will generally experience limited views of the alternative actions
32 except at road crossings while driving to work or where CBP's infrastructure and activity occurs
33 near their place of employment. Most business employees work in one and two-story structures
34 that may or may not have outside views. Those with views often look out on numerous, often
35 varied, built features and the employees within are focused on their jobs. For these reasons,
36 business employees are not likely to be sensitive to landscape changes.

37 **Recreational Users**

38 This group generally includes local residents and tourists involved in outdoor recreation at local
39 parks, recreational facilities, and natural areas: hikers, bicyclists, joggers, and those involved in
40 more passive activities (e.g., picnicking, walking, and nature observation). Scenery and visual
41 quality may or may not be an important part of the recreational experience for these viewers. In
42 general, recreational enjoyment is almost always enhanced by a setting that has not been visually

1 degraded. For some recreational users, scenery may constitute a very important part of their
2 experience, and their activities may afford continuous views of landscape features over relatively
3 long periods of time. Such viewers are likely to have a high appreciation for visual quality and
4 high sensitivity to visual change.

5 Given the amount of public land (which includes recreational and conservation lands) in the New
6 England Region, recreational users do not represent a large viewer group compared with western
7 states. Certain recreational users within the study area, however, already have clear views of
8 current CBP infrastructure and activities. Proximity to existing infrastructure and activity may
9 decrease their expectations of visual quality and their sensitivity to visual change.

1 **7.10 SOCIOECONOMIC RESOURCES**

2 **7.10.1 INTRODUCTION**

3 This section provides a socioeconomic profile of the New England (NE) Region and discusses
4 potential impacts of the U.S. Custom and Border Protection’s (CBP) program alternatives on the
5 region’s resources. The study area includes areas in the United States and Canada within 100
6 miles of the border. Some categories of socioeconomic impacts, as discussed in the
7 Environmental Consequences section, are as likely to be experienced on the Canadian side of the
8 border as on the U.S. side. For example, time delays at border crossings may affect populations
9 and businesses on both sides of the border. In addition, much of the economic activity in U.S.
10 border regions involves cross-border movement of people and goods; therefore, the impacts of
11 CBP activities on Canadian socioeconomic resources are considered along with American
12 resources. The impacts of CBP actions on communities and regional economies in Canada are
13 most likely to be felt closest to the border. But since it is not possible to delineate precisely how
14 far from the border impacts may extend, information on the area 100 miles north of the border is
15 provided to mirror the study area in the United States. This definition of the study area does not
16 imply that impacts are necessarily equivalent in the two countries.

17 Much of the economic data presented here for Canada is not available below the provincial level,
18 so the provinces provide the best available representation of the border region. This limitation
19 does not necessarily suggest the scope of economic impacts; it merely reflects the level at which
20 demographic and economic data are available. All monetary values are expressed in 2009 U.S.
21 dollars, unless otherwise indicated. The socioeconomic environment includes people and their
22 communities, taking into account such things as population movement, density, and age
23 distribution, as well as economic considerations including, income levels, opportunities for
24 employment, and overall economic trends. Section 7.10.2 of this chapter first provides an
25 overview of the socioeconomic resources across the New England Region and north of this
26 region in Canada. It then provides a more detailed characterization of the regional demography,
27 including population levels and distribution, regional growth trends, income, employment levels,
28 poverty statistics, and property values. This section also profiles the regional economy, indexing
29 important economic sectors in terms of income and employment. It further provides regionally
30 focused information on important economic sectors for two port-of-entry (POE) sites. These
31 sites include those POEs that are most active in terms of the annual number of crossings and the
32 value of cargo transported.

33 **7.10.2 AFFECTED ENVIRONMENT**

34 **7.10.2.1 Regional Demographics**

35 To provide context for the potential impacts of CBP actions, some basic, descriptive,
36 socioeconomic information is provided for the New England Region and the area north of this
37 region in Canada and is compared to the broader states, provinces, and national economies,
38 where possible. While the profiled region is defined as the area both 100 miles north and south
39 of the U.S.-Canada border, the statistics in the various tables and text within this section include
40 data for all American counties and Canadian census divisions overlapping these 100-mile
41 regions. These areas represent the finest geographic resolution available for these data and are
42 used, therefore, to approximate values for populations and other demographic variables.

1 **7.10.2.2 Population and Growth Trends**

2 In the United States, approximately 2.2 million people reside in the New England Region (Table
3 7.10-1). The segment of the population living in border communities accounts for 67.5 percent
4 of the population in the New England Region states of Maine, New Hampshire, and Vermont.
5 Maine has the largest population in the region with about 1.2 million people. The border
6 communities in New Hampshire and Vermont are less populated.

7 Between 2000 and 2009, border communities in Maine (3.2 percent growth), New Hampshire
8 (6.7 percent), and Vermont (2.5 percent) experienced population growth at a slower pace than
9 the United States as a whole (8.7 percent) (Figure 7.10-1).

10

Table 7.10-1. Population of the New England Region*

Border State	Population within the Border Area**	Population Overall	Percent of Population within the Border Area
Maine	1,242,924	1,318,301	94.3
New Hampshire	418,759	1,324,575	31.6
Vermont	541,878	621,760	87.2
NE Region Total	2,203,561	3,264,636	67.5
Total United States	28,412,077	310,973,729	9.1

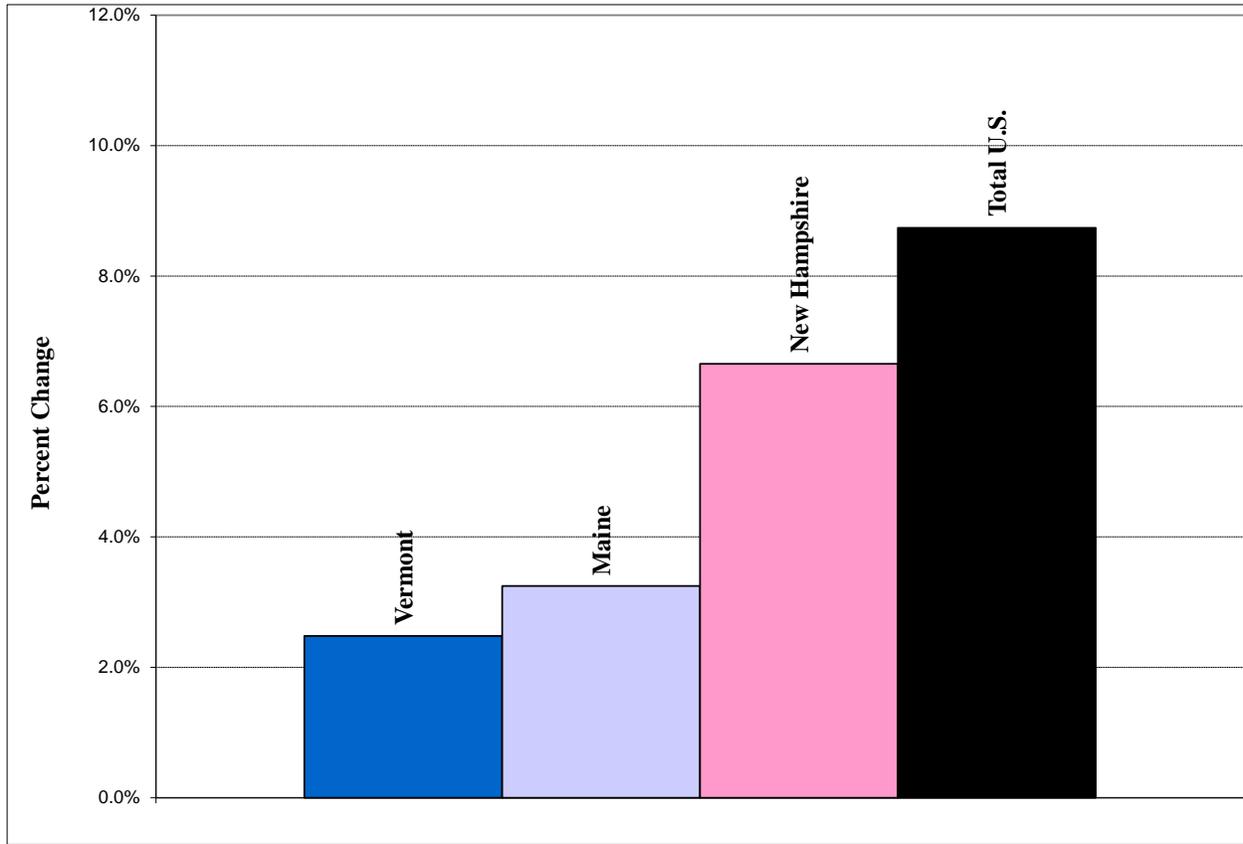
11 * The American Community Survey provides estimates of demographic, social, economic, and housing
12 characteristics every year for all states, as well as for all cities, counties, metropolitan areas, and population groups
13 of 65,000 people or more (USDOC, 2000).

14 ** Statistics in this column account only for those portions of the states within the NE Region. Total United States
15 accounts only for the border area of all four regions.

16 While border POEs and Border Patrol stations (BPS) along the Northern Border tend to be in
17 rural, less densely populated areas outside of major metropolitan areas, the majority of the
18 population in the region lives in larger population centers. Population centers in this report
19 include all of the counties that overlap a metropolitan statistical area (MSA), defined by the
20 Office of Management and Budget and used by the U.S. Census Bureau to report demographic
21 statistics. Overall, for the New England Region in the United States, approximately 55.1 percent
22 of the population lives in population centers (Table 7.10-2).

23

1 **Figure 7.10-1. Percent Change in the New England Region Population, 2000–2009**



2
3 Source: (USDOC, 2009a).

4

1

Table 7.10-2. Population Centers in the New England Region*

Border State	Population Center	State's NE Population Living in Population Centers**	Total State Population in the NE Region	Percent of State's NE Population Living in Population Centers
Maine	Bangor	241,153	1,242,924	19.4
	Lewiston-Auburn	106,539	1,242,924	8.6
	Portland-South Portland	536,679	1,242,924	43.2
	Maine State Total	884,371	1,242,924	71.2
New Hampshire***	New Hampshire State Total	0	418,759	0.0
Vermont***	Burlington-South Burlington	329,469	541,878	60.8
NE Region Total		1,213,840	2,203,561	55.1
Total United States****		261,110,826	310,973,729	84.0

2 * The American Community Survey provides estimates of demographic, social, economic, and housing
 3 characteristics every year for all states, as well as for all cities, counties, metropolitan areas, and population groups
 4 of 65,000 people or more.

5 ** Statistics in this column account only for those portions of the NE Region within each state.

6 *** The NE Region in Vermont includes only one population center; thus, no state total row is presented. The NE
 7 Region in New Hampshire does not include any population centers.

8 **** Population statistics in this row represent the proportion of the total American population that resides in
 9 population centers across the whole country.

10 In Canada, approximately 7.4 million people reside in the study area north of the New England
 11 Region (Table 7.10-3). Most of Canada's major cities are in the southern part of the country;
 12 therefore, the country's population is more heavily concentrated along the border than the U.S.
 13 population. For example, in Quebec, approximately 92.7 percent of the population lives in
 14 border communities. Quebec has the second largest population living in border communities in
 15 Canada. As some census divisions overlapping the 100-mile buffer area are large and extend
 16 well beyond 100 miles from the border, this analysis may overstate the Canadian population
 17 residing in the study area north of the NE Region.

18 Between 1996 and 2006, the population of Canada grew 9.5 percent. More recently, according
 19 to Statistics Canada, about two-thirds of Canada's growth between 2009 and 2010 was
 20 attributable to net international migration. The number of immigrants to Canada rose from
 21 245,300 between 2008 and 2009 to 270,500 between 2009 and 2010. During the economic
 22 recession in 2009 and 2010, however, the net flow of non-permanent residents decreased, with
 23 more immigrants leaving the country, resulting in lower net international migration in 2010
 24 compared to the previous year. Overall, the area north of the New England Region experienced
 25 population growth. Unlike Nova Scotia (-5.1 percent) and New Brunswick (-2.8 percent),
 26 Quebec (6.6 percent) experienced positive population growth, but at a pace slower than Canada
 27 as a whole (Figure 7.10-2).

1 Approximately 71.7 percent of the Canadian population in the study area north of the New
 2 England Region resides within population centers (Table 7.10-4). While more than 73 percent of
 3 the study area population in Quebec lives in population centers, none of the study area
 4 population in Nova Scotia does.

5 **Table 7.10-3. Population North of the New England Region in Canada**

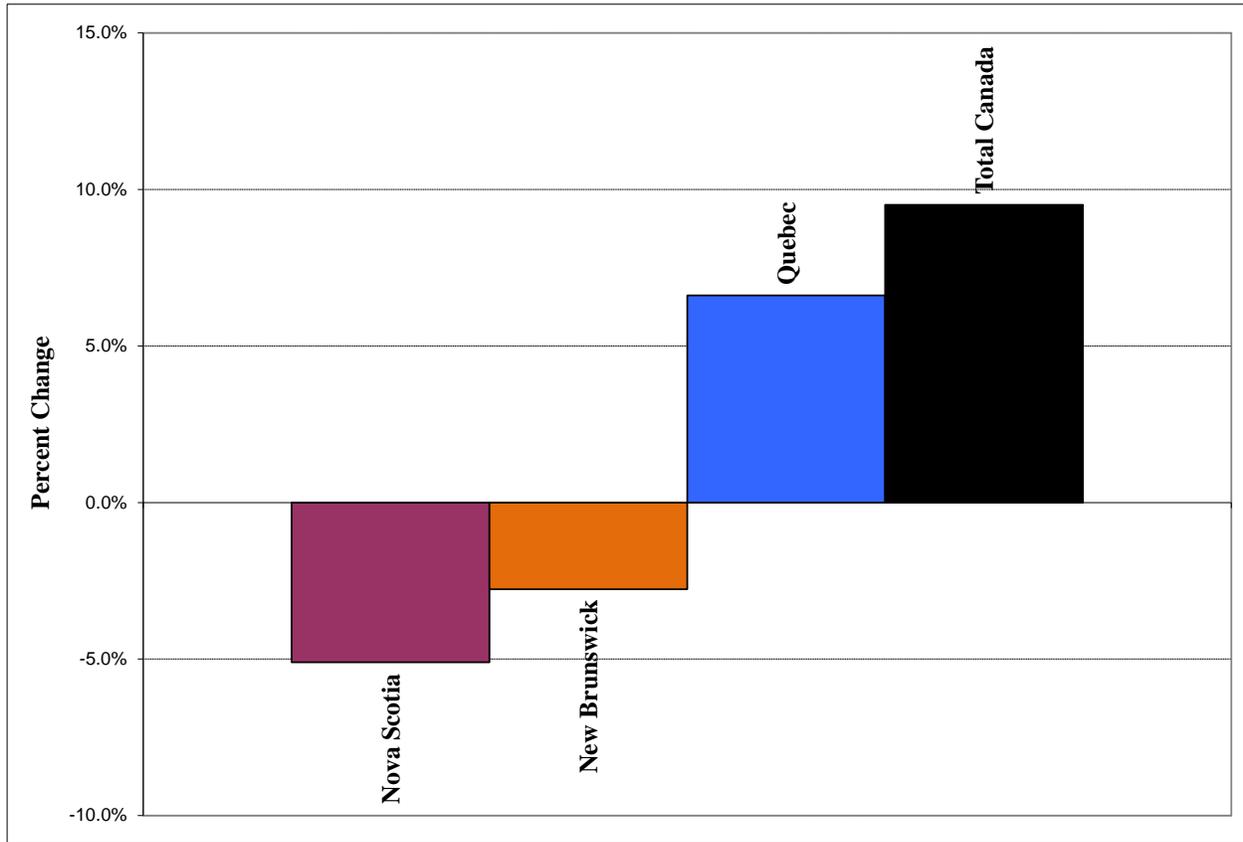
Border Province	Study Area Population North of the NE Region*	Total Population in the Province	Percent of Total Province Population Residing in the Study Area North of the NE Region
New Brunswick	453,605	719,650	63.0
Nova Scotia	65,725	903,090	7.3
Quebec	6,895,455	7,435,900	92.7
NE Region Total	7,414,785	9,058,640	81.9
Total Canada	25,562,910	31,241,030	81.8

6 * Statistics in this column account only for those portions of the provinces within the study area. Total Canada
 7 accounts only for those portions of the border provinces within the study area across all four regions.

8 Source: (StatCan, 2006a).

1
2

**Figure 7.10-2. Percent Change in Canadian Population,
North of New England Region, 1996–2006**



3
4

Sources: (StatCan, 1996; StatCan, 2006a).

1 **Table 7.10-4. Population in Census Metropolitan Areas in Study Area North of the New**
 2 **England Region in Canada**

Border Province	Population Center	Study Area Population Living in Population Centers North of the NE Region*	Total Study Area Population North of the NE Region*	Percent of Total Study Area Population North of the NE Region Living in Population Centers
New Brunswick	Moncton	124,055	453,605	27.3
	Saint John	120,875	453,605	26.6
	New Brunswick Province Total	244,930	453,605	54.0
Nova Scotia	Nova Scotia Province Total	0	65,725	0.0
Quebec	Montreal	3,588,520	6,895,455	52.0
	Ottawa-Gatineau **	304,985	6,895,455	4.4
	Quebec	704,185	6,895,455	10.2
	Saguenay	149,600	6,895,455	2.2
	Sherbrooke	183,635	6,895,455	2.7
	Trois-Rivières	138,560	6,895,455	2.0
	Quebec Province Total	5,069,485	6,895,455	73.5
NE Region Total		5,314,415	7,414,785	71.7
Total Canada**		21,508,575	31,241,030	68.8

3 * Population statistics in these columns account only for those portions of the CMAs and provinces within the study
 4 area.

5 ** Population statistics in this row represent the proportion of the total Canadian population that resides in
 6 population centers across the whole country.

7 Source: (StatCan, 2006a).

8 **7.10.2.3 Income, Poverty, and Unemployment**

9 The median household income of border communities within the New England Region (\$50,069)
 10 is lower than the national average (\$53,051). Border communities in New Hampshire are less
 11 wealthy than the state average (Manchester and Concord are outside of the study area).

12 The poverty rate is defined as the number of individuals included in the poverty count as a
 13 percentage of the population for whom the poverty status is determined. The poverty rates for the
 14 NE states are all lower than the 12.4 percent for the entire United States (Table 7.10-5). Border
 15 communities in New Hampshire and Vermont have the lowest poverty rates of all border
 16 communities across the U.S.-Canada border.

17 The unemployment rates in the New England states in 2009 were all significantly lower than the
 18 9.3 percent for the country (Table 7.10-6). The unemployment rate for border communities in
 19 New Hampshire was much lower than the national average.

1

Table 7.10-5. Income and Poverty Statistics for the New England Region

Border State/NE Region*		Median Household Income** (\$)	Population Below the Poverty Line***	Percent of Population Below the Poverty Line
Maine	NE Region	47,503	128,261	11.0
	Statewide	47,046	135,501	10.9
New Hampshire	NE Region	54,887	27,542	7.3
	Statewide	62,492	78,530	6.5
Vermont	NE Region	52,338	47,880	9.4
	Statewide	51,614	55,506	9.4
NE Region Total	NE Region	50,069	203,683	9.9
	Selected States	54,056	269,537	8.9
Total United States		53,051	33,899,812	12.4

2 * Statistics in the non-shaded rows account only for portions of the states within the NE Region.

3 ** Median household income is reported in inflation-adjusted 2009 dollars.

4 ***To determine the poverty rate in the United States, the Census Bureau references income thresholds that vary by
5 family size and ages of family members. If a family's total income, not including noncash benefits (such as food
6 stamps and housing subsidies), is below the family's threshold, every individual in the family is included in the
7 poverty count.

8 Source: (USDOC, 2000a; USDOC, 2000b).

9

Table 7.10-6. Unemployment Rates for the NE Region

Border State/NE Region*		Unemployment Rate (%)
Maine	NE Region	8.1
	Statewide	8.0
New Hampshire	NE Region	5.9
	Statewide	6.3
Vermont	NE Region	6.9
	Statewide	6.9
NE Region Total	NE Region	7.3
	Selected States	7.1
Total United States		9.3

10 * Statistics in the non-shaded rows account only for portions of the states within the NE Region.

11 Source: (USDOL, 2009a).

1 The median household income in the study area north of the NE Region is approximately
 2 \$43,700 (in 2009 U.S. dollars) compared with \$49,400 for Canada as a whole (Table 7.10-7).
 3 Border communities in New Brunswick and Nova Scotia have the lowest poverty rates among all
 4 border communities north of the U.S.-Canada border.

5 The poverty rate in Canadian communities is defined as the percentage of low-income
 6 “economic families.” (See note in Table 7.10-7 for an explanation of “economic family.”) This
 7 threshold-based designation is comparable to the poverty statistics reported in the U.S. Census.
 8 In the study area north of the New England Region, the poverty rate is approximately 12.5
 9 percent compared with 11.6 percent for Canada as a whole (Table 7.10-7). Border communities
 10 in Quebec have the second highest poverty rates among all border communities north of the
 11 U.S.-Canada border.

12 In the study area north of the New England Region, the unemployment rate was 6.9 percent in
 13 2006 compared with 6.6 percent for Canada (Table 7.10-8). In Nova Scotia, the unemployment
 14 rate was significantly higher in the border communities than for the entire province. Border
 15 communities in New Brunswick and Nova Scotia have the highest unemployment rates among
 16 all border communities north of the U.S.-Canada border.

17 **Table 7.10-7. Income and Poverty Statistics North of the New England Region in Canada**

Border Province/Study Area North of NE Region*		Median Household Income** (\$US)	Number of Low-Income Economic Families***	Percent of Low-Income Economic Families***
New Brunswick	Study area north of NE Region	42,435	14,293	10.7
	Province	41,620	22,252	10.4
Nova Scotia	Study area north of NE Region	36,138	2,063	10.3
	Province	42,920	27,192	10.3
Quebec	Study area north of NE Region	43,846	248,722	12.6
	Province	42,748	260,440	12.3
NE Region Total	Study area north of NE Region	43,692	265,078	12.5
	Selected provinces	42,676	309,884	11.9
Total Canada		49,393	1,006,911	11.6

18 * Statistics in the non-shaded rows account only for portions of the provinces within the study area.

19 ** Median household income is reported in inflation-adjusted 2009 US dollars.

20 *** The Canadian Census reports statistics for “low-income” economic families. This threshold-based designation
 21 is comparable to the poverty statistics reported in the U.S. Census. The term “economic family” refers to a group of
 22 two or more persons who live in the same dwelling and are related to each other by blood, marriage, common-law,
 23 or adoption. A couple may be of opposite or same sex. Foster children are included.

24 Source: (StatCan, 2006d).

1 **Table 7.10-8. Unemployment Rates North of the New England Region in Canada**

Border Province/Study Area North of the NE Region*		Unemployment Rate (%)
New Brunswick	Study area north of NE Region	10.1
	Province	10.0
Nova Scotia	Study area north of NE Region	11.8
	Province	9.1
Quebec	Study area north of NE Region	6.6
	Province	7.0
NE Region Total	Study area north of NE Region	6.9
	Selected provinces	7.4
Total Canada		6.6

2 * Statistics in the non-shaded rows account only for portions of the provinces within the study area.

3 Source: (StatCan, 2006c).

4 **7.10.2.4 Property Values**

5 In the New England Region, the median property value between 2006 and 2008 was
 6 approximately \$192,400—the same median property value for the United States as a whole
 7 (\$192,400) (Table 7.10-9). Except for New Hampshire, the median property value within the
 8 border region is higher than the median property value for each respective state.

1

Table 7.10-9. Median Property Value for the New England Region

Border State/NE Region*		Median Home Value** (\$)
Maine	NE Region	177,700
	Statewide	175,200
New Hampshire	NE Region	220,100
	Statewide	260,300
Vermont	NE Region	205,300
	Statewide	203,800
NE Region Total	NE Region	192,400
	Selected states	214,500
Total United States		192,400

2 * Statistics in the non-shaded rows account only for those portions of the states within the NE Region.

3 ** The American Community Survey provides estimates of housing characteristics for all geographic areas with
4 populations of 20,000 or more, including the Nation, all states and the District of Columbia, all congressional
5 districts, and approximately 1,800 counties every 3 years. Due to the use of value categories rather than specific
6 amounts collected for each individual housing unit in 2006 and 2007, property values cannot be inflation adjusted.
7 Property values are reported in nominal dollar terms.

8 Source: (USDOC, 2008a).

9 In the study area north of the New England Region, the median property value in 2006 was
10 approximately \$173,800 (in 2009 U.S. dollars) compared with \$232,200 for Canada as a whole
11 (Table 7.10-10). Border communities in New Brunswick have the lowest median property
12 values among all border communities north of the border. The median property value for border
13 communities in Nova Scotia is significantly less than for the province as a whole.

1 **Table 7.10-10. Median Property Value North of New England Region in Canada**

Border Province/Study Area North of NE Region*		Average Value of Dwelling** (\$US)
New Brunswick	Study area north of NE Region	107,900
	Province	105,400
Nova Scotia	Study area north of NE Region	116,500
	Province	139,300
Quebec	Study area north of NE Region	178,700
	Province	160,800
NE Region Total	Study area north of NE Region	173,800
	Selected provinces	154,300
Total Canada		232,200

2 * Statistics in the non-shaded rows account only for those portions of the provinces within the study area.

3 ** A dwelling is defined as a set of living quarters designed for or converted for human habitation in which a person
 4 or group of persons reside or could reside. In addition, a private dwelling must have a source of heat or power and
 5 must be an enclosed space that provides shelter from the elements, as evidenced by complete and enclosed walls and
 6 roof and by doors and windows that protect from wind, rain, and snow. Property values are reported in 2006 U.S.
 7 dollars.

8 Source: (StatCan, 2006b).

9 **7.10.2.5 Regional Economies**

10 Tourism is a major component of
 11 economic activity along the
 12 Northern Border. Canada is the
 13 top country of origin for visitors
 14 to the United States. In 2008,
 15 the number of Canadian visitors
 16 staying one or more nights in the
 17 United States was nearly 19
 18 million (USDOC, 2008d). In
 19 this context, “Canadian visitors”
 20 refers to Canadian residents
 21 visiting the United States.

22 Crossing the Northern Border
 23 using surface modes of
 24 transportation is the principal
 25 means of entry for Canadians

26 visiting the United States, accounting for two-thirds (12.6 million) of all Canadian visitor entries
 27 (USDOC, 2008b). While approximately 16 percent of Canadian visitors entering the United
 28 States by surface transportation visited the New England Region, spending in this region

Trade with Canada
<p>The flow of goods, services, and people across the border contributes significantly to economic activity in border communities. Canada is the largest trading partner of the United States. In 2009, the total value of merchandise trade with Canada was approximately \$429.6 billion—\$204.7 billion in exports and \$224.9 billion in imports. Shipments by surface modes of transportation, excluding pipelines, account for approximately 79 percent of total merchandise trade with Canada. The top exports to Canada by surface transportation are automobiles and automotive parts and accessories, and other machinery, appliances, and equipment. The top imports from Canada are automobiles and automotive parts and accessories, other machinery and appliances, and processed paper and pulp products. On average, approximately \$930 million in merchandise crosses the Northern Border by surface transportation every day (USDOT, 2009a). Appendix Q of this analysis provides trade statistics for surface transportation between the United States and Canada.</p>

1 accounted for a relatively low percentage (less than 7 percent) of these visitors' total spending in
2 the United States. Canadian visitors entering by surface transportation contributed
3 approximately \$535 million to the New England Region in 2008 (Table 7.10-11). The average
4 visitor spent approximately \$262 per visit. The most common stated purposes for visiting states
5 in the region were vacation (82 percent), visiting friends or relatives (15 percent), and business
6 or employment (3 percent). The New England Region had the lowest percentage of travel due to
7 business or employment. While business travelers tend to spend more per trip, they rely more
8 heavily on air travel and travel further from the border.

1

Table 7.10-11. Canadian Visitors Entering the New England Region by Surface Transportation*

Destination	Visitors		Spending			Purpose of Trip		
	Number of Visitors (000s)	Average Nights Per Visit	Visitor Spending (\$US millions)	Spending per Visitor (\$US)	Average Daily Spending per Visitor (\$US)	Business, Convention, or Employment (%)	Visiting Friends or Relatives (%)	Holiday, Vacation, or Other (%)
Maine	857	3.4	261.2	305	91	2.8	13.2	84.0
New Hampshire	443	2.9	110.5	249	87	3.0	15.6	81.6
Vermont	741	3.1	163.7	221	72	2.9	15.7	81.5
Border States in NE Region	2,041	3.2	535.0	262	82	2.9	14.6	82.6

2 * Surface modes of transportation include autos, buses, and other non-air modes of transportation. Average nights per visit and average daily spending per visitor
3 are based on total visitors, including air travelers.

4 Sources: (USDOC, 2008a; USDOC, 2008b; USDOC, 2008c).

1 **7.10.2.6 Economic Profiles of POEs and BPSs in the NE Region**

2 This section provides regional economic profiles for border communities in the United States
3 and Canada that surround selected POEs in the EOR Region. This section characterizes
4 socioeconomic resources of specific border communities in the region to provide context for the
5 discussion of potential consequences of CBP's alternative actions, and to highlight the diversity
6 in regional economies surrounding POEs and BPSs along the Northern Border. Appendix Q of
7 this report provides data on trade, employment, and payroll statistics by economic sector for U.S.
8 counties and Canadian provinces that contain profiled POEs and BPSs in the four Northern
9 Border regions.

10 This section profiles two sites in the New England Region representing the most heavily used
11 POEs along the U.S.-Canada border in the region in terms of total crossings and the total value
12 of trade. Table 7.10-12 lists the sites ranked by crossing volume and provides information on
13 associated crossing activity.

1

Table 7.10-12. POE and BPS Sites Profiled in the New England Region

Port	Annual Individual Crossings (% of Total)	Annual Vehicle Crossings (% of Total)	National Rank by Crossing Volume	Annual Trade Value (Surface Mode)	Rank by Trade Value	Two Largest Commodities (% of Port's Trade Value)	Important Features
ME: Calais	1,414,000 (2.3%)	963,530 (3.0%)	10	\$2,360,785,936 (0.7%)	14	<ul style="list-style-type: none"> Fish and crustaceans, mollusks (30.9%) Nuclear reactors, boilers, machinery, and mechanical appliances (7.9%) 	<ul style="list-style-type: none"> Close community ties between Calais, ME and St. Stephen, New Brunswick
VT: Derby Line	1,355,812 (2.2%)	650,320 (2.0%)	11	\$1,707,808,810 (0.5%)	17	<ul style="list-style-type: none"> Paper and paperboard (16.5%) Wood and articles thereof (14.4%) 	<ul style="list-style-type: none"> Heavy summer travel use

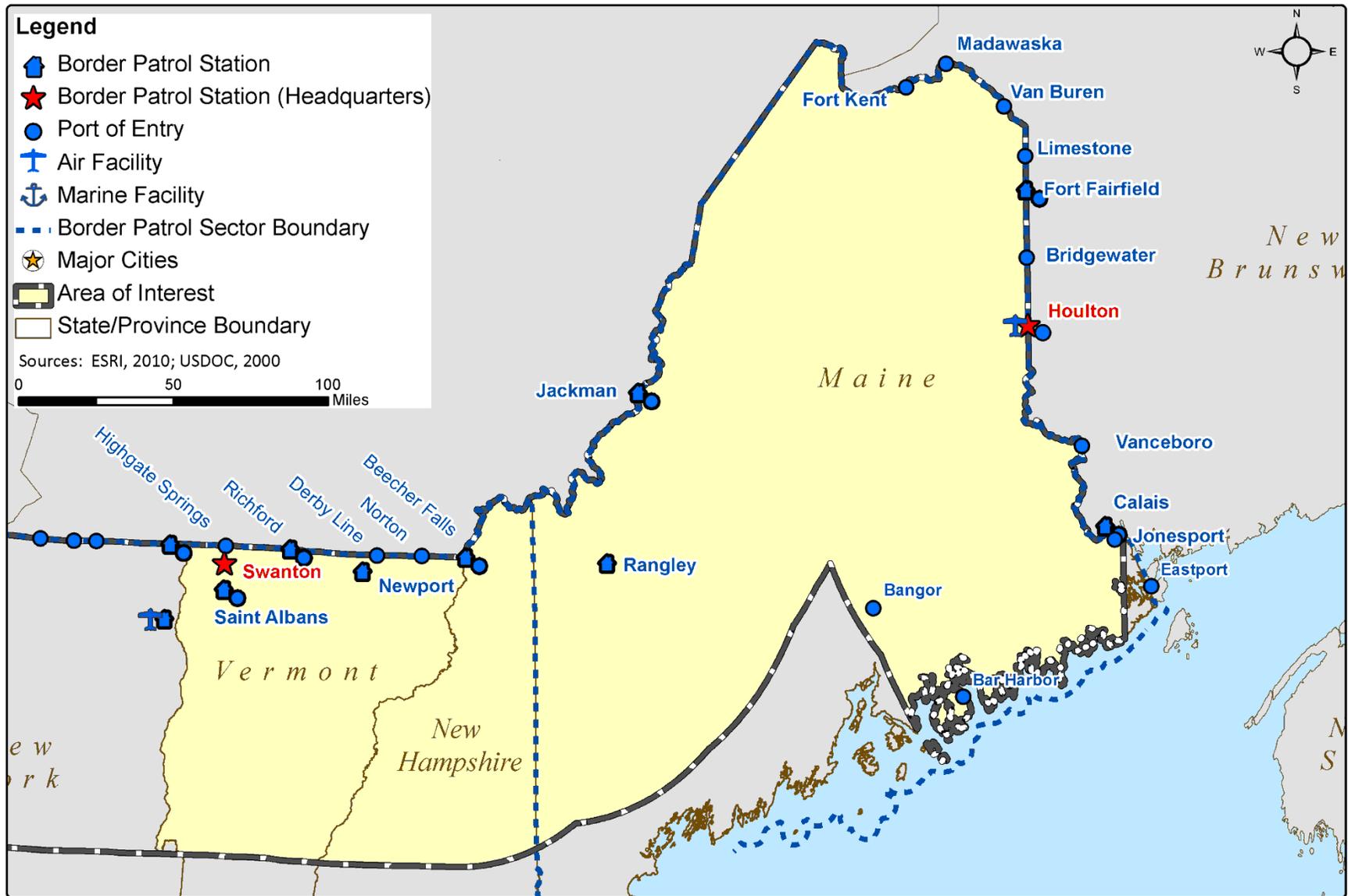
2 * Size based on number of individual border crossings.

3 ** BTS does not provide data on commodities and crossings at BPSs.

4 Sources: IEc analysis of Bureau of Transportation Statistics data: (USDOT, 2009a; USDOT, 2009b; USDOT, 2009c).

5

Figure 7.10-3. Locations of POEs and BPSs in the New England Region



1 The remainder of this section characterizes the regional economies of the American counties and
2 Canadian provinces containing the New England Region sites identified in Table 7.10-12 and
3 Figure 7.10-3.

4 **Orleans County, Vermont**

5 Orleans County, Vermont lies between the eastern and western ranges of the Green Mountains
6 and is bordered by Quebec to the north. This county is largely rural and has a population of
7 approximately 28,000. The border splits the towns of Derby Line, Vermont, and Stanstead,
8 Quebec, but the two towns function as a single community, sharing resources such as a sewer
9 system, emergency services, snowplows, and the Haskell Free Library and Opera House (NYT,
10 2009). The Jay Peak Resort and surrounding area is a popular ski destination just 5 miles south
11 of the border. Outdoor winter recreational activities, including skiing, snowboarding, cross-
12 country skiing, snowshoeing, snowmobiling, and hiking are popular in the area. The major
13 economic sectors by annual payroll are health care and social assistance (\$56.2 million), retail
14 trade (\$33.0 million), construction (\$23.3 million), and accommodation and food services (\$13.4
15 million). The poverty rate for Orleans County is the second highest in Vermont and the median
16 household income is the second lowest in the state.

- 17 • Derby Line POE: The Derby Line POE has two crossing points leading to either Route
18 55 or Route 143 in Quebec. Derby Line is approximately 220 miles north of Boston on
19 Interstate 91 and approximately 100 miles southeast of Montreal. Two popular winter
20 destinations for Canadians are the Jay Peak Resort and the White Mountain National
21 Forest in New Hampshire. Monthly crossing data show an annual surge in POV
22 crossings in July and August, suggesting that tourists use this POE heavily for summer
23 travel (USDOT, 2009c). Derby Line has the eleventh highest volume of individual
24 border crossings, accounting for 1.4 million or 2.2 percent of all U.S.-Canada crossings in
25 2009. The value of border commerce at the Derby Line POE in 2009 was \$1.7 billion
26 (approximately 0.5 percent of all U.S.-Canada trade). Derby Line is a significant freight
27 crossing for the paper and wood product industries. The major commodities transported
28 across Derby Line by trade value are paper and paperboard (16.5 percent), wood and
29 wood articles (14.4 percent), vehicles and parts (8.0 percent), and articles of iron or steel
30 (7.4 percent).

31 **Washington County, Maine**

32 Washington County, Maine is the easternmost county in the United States. This county is
33 largely rural and has a population of approximately 32,000. It has many fishing-based, seaside
34 communities; it also has an agricultural economy for which a key component is wild blueberry
35 production. Maine is the single largest producer of wild blueberries in the world. According to
36 the U.S. Department of Agriculture, Maine produced 89.95 million pounds of wild blueberries in
37 2008 (USDA, 2009). The major economic sectors in Washington County by annual payroll are
38 health care and social assistance (\$62.9 million), manufacturing (\$39.4 million), and retail trade
39 (\$23.9 million).

40 Many Canadians travel through Washington County to reach Bangor International Airport or
41 shop at Bangor Mall. Bangor, the state's third largest city, is the economic center for central,
42 northern, and Down East Maine and serves as northern New England's economic link to the
43 Canadian maritime, eastern Quebec, and beyond (CBME, 2010). However, Washington County

1 is relatively less affluent. According to the U.S. Census, it has the lowest median household
2 income and the highest poverty rate in the state.

3 The border between Washington County and New Brunswick splits some communities.
4 Residents of Calais in Maine and St. Stephen in New Brunswick have close ties; it is common to
5 have family that lives across the border (USDHS, 2008). Calais and St. Stephen frequently
6 function as a single community, fostering cooperation between the fire departments and on other
7 projects. Calais does not have a football field, so its high school team plays its games in St.
8 Stephen. This unique relationship is celebrated yearly during the International Homecoming
9 Festival. In November 2009, a new border crossing opened between the two towns (Mack,
10 2009).

11 • Calais POE: The Calais POE is separated from St. Stephen, New Brunswick by the St.
12 Croix River. The POE is approximately 100 miles northeast of Bangor. There are two
13 distinct border-crossing points at the Calais POE: the Ferry Point Bridge and the
14 Milltown Bridge. The close ties among communities split by the border are reflected in
15 the substantial number of pedestrian crossings. Calais ranks third among all U.S.-Canada
16 POEs in the number of pedestrian crossing with 16,665 pedestrian crossings in 2009,
17 behind Sumas and Buffalo-Niagara Falls. The number of pedestrian crossings may be
18 underestimated because at the Ferry Point Bridge, privately owned vehicles can obscure
19 the view of guards so that pedestrians remain uncounted (USDOT, 2001). Calais has the
20 tenth highest volume of individual crossings overall, accounting for 1.4 million or 2.3
21 percent of all U.S.-Canada crossings in 2009. A relatively small number of buses use the
22 Calais POE and there are no passenger trains. Calais accounts for the fourteenth highest
23 value of trade with \$2.4 billion or 0.7 percent of all U.S.-Canada trade in 2009. As the
24 largest land POE along the Eastern seaboard, it is the single largest POE for shipment of
25 fish, crustaceans, mollusks, and other aquatic invertebrates, which accounted for \$730.3
26 million or 30.9 percent of U.S.-Canada trade in seafood. The other major commodities
27 transported through Calais include machinery and mechanical appliances (7.9 percent),
28 paper and paperboard (7.6 percent), and rubber and articles thereof (7.0 percent).

29 **Quebec, Canada**

30 Quebec lies to the north of the Derby Line POE. Quebec sits in eastern central Canada and
31 shares an international border with the states of New York, Vermont, New Hampshire, and
32 Maine. Quebec is the second largest Canadian province, accounting for 24 percent of the entire
33 population. Most of the population lives on either shore of the St. Lawrence River between
34 Montreal and Quebec City. Half of Quebec's population lives inside the Montreal metropolitan
35 area. French is the native language for 80 percent of the population. Montreal is a major tourist
36 destination due to its rich history, distinct heritage, and culture. The International Jazz Festival
37 and the Montreal Casino attract many visitors. In the winter, tourists travel to Quebec to enjoy
38 the numerous ski resorts. Mont-Tremblant, 150 km north of Montreal, is one of the most popular
39 resorts for American tourists. Quebec City, the capital of Quebec, is the second largest urban
40 center. During the international Winter Carnival, Quebec City also hosts a great number of
41 visitors.

42 Quebec is home to a number of high-tech industries, including aerospace companies and the
43 Canadian Space Agency, and a large public sector. Montreal is a center of commerce, industry,

1 technology, culture, and finance, while the economy of Quebec City is dominated by public
2 administration and government services. The dominant economic sectors in Quebec by annual
3 payroll are manufacturing (\$23.4 billion), health care and social assistance (\$14.0 billion),
4 professional, scientific, and technical services (\$11.6 billion), and public administration (\$11.2
5 billion). A significant paper and pulp products industry exists outside the major urban centers.
6 The lumber industry is the economic cornerstone for nearly 250 of Quebec's municipalities and
7 generates approximately 40,500 direct jobs (QFIC, 2010). Quebec is also an important
8 agricultural producer. It is the largest dairy producer in Canada and produces nearly 75 percent
9 of the world's maple syrup.

10 **New Brunswick, Canada**

11 New Brunswick lies to the north of the Calais POE. New Brunswick is one of three Canadian
12 Maritimes Provinces and has the smallest land area and population in the Canadian study area.
13 New Brunswick's three major cities are Moncton, St. John, and Fredericton. Moncton is the
14 most populous city in New Brunswick and is the commercial and retail center of the province.
15 The city of St. John, along the north shore of the Bay of Fundy, is the second largest city and the
16 major industrial center of the province. The Irving Group, which has interests in oil, forestry,
17 shipbuilding, and transportation, is headquartered in St. John and is the largest employer in the
18 province (JDI, 2010). The Port of St. John, the largest seaport in New Brunswick, handles an
19 average of 27 million metric tons of cargo annually and is one of Canada's key ports recognized
20 for its strategic importance to Canada's trade and economy (SJPA, 2010). It is also a major port
21 for cruise ships traveling between Canada and New England. Fredericton, the capital of New
22 Brunswick, is the center of government services and higher education.

23 The major economic sectors in New Brunswick by regional income are manufacturing (\$1.6
24 billion), health care and social assistance (\$1.4 billion), public administration (\$1.3 billion), retail
25 trade (\$940.7 million), and educational services (\$936.5 million). Outside of the urban centers,
26 the economy centers on farming, forestry, and fishing. The tourism industry is supported by
27 cruise ships entering the Port of St. John and by Fundy National Park, a major tourist attraction.

1 **7.11 CULTURAL AND PALEONTOLOGICAL RESOURCES**

2 **7.11.1 INTRODUCTION**

3 This section provides an overview of cultural and paleontological resources located in the New
4 England (NE) Region of the Northern Border and discusses potential impacts of CBP's program
5 alternatives on those resources.

6 **7.11.2 AFFECTED ENVIRONMENT**

7 **7.11.2.1 Archaeological Resources: Prehistoric/Precontact Context**

8 Among the known cultural resources in the NE Region are archaeological sites from the
9 prehistoric and pre-European contact periods. This section provides an overview of those
10 periods. An expanded prehistoric and pre-European contact-period context and references can
11 be found in Appendix H. In North America, the Prehistoric/Precontact era is generally divided
12 into three broad periods: Paleo-Indian, Archaic, and Ceramic/Woodland/Late. During the
13 Prehistoric era, North-American groups evolved from highly nomadic big-game hunters to
14 politically sophisticated and sedentary tribes and nations employing large-scale agriculture.
15 There are thousands of known archaeological sites within the NE Region, which represent a
16 fraction of the potential sites that may exist in the region. This record of known sites has been
17 built up over the years as a result of reports by amateurs and vocational archaeologists as well as
18 the result of formal archaeological surveys conducted by professionals and academics. In
19 parallel with the evolution of prehistoric groups from nomadic hunting to sedentary
20 agriculture/aquaculture and the resulting increases in population, sites from the earlier periods
21 (ca. 12,000 to ca. 7,000 years before present [B.P.]) are rare. Sites from the later periods account
22 for the bulk of the known sites in the region.

23 **Paleo-Indian Period**

24 The Paleo-Indian period (ca. 12,000 to ca. 10,000 B.P.) is similar in much of the study area and
25 was characterized by people inhabiting the recently deglaciated environment. Subsistence was
26 dominated by big-game hunting of mastodon, mammoth, caribou, horse, bison, musk-ox, giant
27 ground sloth, white-tailed deer, elk, moose, and wapiti, along with species of smaller mammals,
28 birds, fish, reptiles, and shellfish. These early hunting groups generally had highly mobile
29 lifeways. There are several types of Paleo-Indian sites including small camps;
30 workshops/quarries; kill sites; rockshelters/cave camps; major, recurrently occupied camps; and
31 possible cremation sites.

32 **Archaic Period**

33 During the Archaic period (ca. 10,000 to ca. 3,000 B.P.), the environment changed from unstable
34 post-glacial conditions to an essentially modern state. In the context of this changing landscape,
35 came numerous cultural and technological changes. People gradually adopted less-mobile
36 lifestyles. At the same time, they broadened the variety of resources on which they depended for
37 food and shelter. Some groups began regularly interacting and trading with other people across
38 large distances—sometimes over a thousand miles away. There are relatively few sites from the
39 first 3,000 years of the Archaic known in the northern portion of the United States, a fact
40 probably related to the continually changing climate and environment. Sites from the last 4,000
41 years of the period are more common and show people had developed a great variety of tool

1 types and styles, mostly made from stone, bone, and wood. In general, Archaic sites are found
2 along water and on lake plains.

3 **Woodland/Ceramic/Late Period**

4 The Woodland/Ceramic/Late period lasted from 3,000 B.P. to the time when European trade
5 goods reached Indian groups (450 to 250 B.P.). During this time, people invented several new
6 technologies, including clay pots and the bow and arrow. Long-distance trade intensified.
7 Groups adopted agriculture, developed even less-mobile lifeways than before, and started living
8 in larger settlements, some with over 1,000 inhabitants. In the millennium before contact with
9 Europeans, many people in the eastern half of the United States came to rely heavily on maize,
10 beans, and squash and started living in large villages that had defensive walls and were located in
11 easily-defendable locations, such as elevated terrain near rivers.

12 **7.11.2.2 Prehistoric Archaeological Site Probability**

13 Archaeologists use a variety of information and techniques to carry out *predictive modeling*, the
14 process of assessing the probability of the existence of archaeological sites in a given location.
15 This section provides an overview of the current understanding of archaeological site probability
16 in the NE Region.

17 **Maine**

18 The Maine Historic Preservation Commission (MHPC) identifies five types of Precontact
19 archaeological sites: (1) habitation (camp or village) and workshop sites; (2) lithic quarries; (3)
20 cemeteries; (4) rock art; and (5) waterlogged sites preserving wood or other perishables. There
21 are about 6,000 sites in the Maine prehistoric archaeological survey inventory. Habitation and
22 workshop sites comprise the vast majority (over 95 percent) of the known archaeological
23 locations in Maine. They exhibit evidence of a range of activities from food procurement and
24 processing to tool manufacture and maintenance. More than 95 percent of these sites are located
25 adjacent to canoe-navigable waters, whether coast, lake, river, stream, swamp, or relict
26 shorelines. The majority of sites is shallowly buried on till, sand, gravel, or silt soils within 1.5
27 feet of the surface. In alluvial settings along rivers and streams, sites can be buried more
28 deeply—to depths of 10 feet.

29 Predictive site-location models are also based partly on culture periods as well as bedrock and
30 surficial geology, proximity to water, aspect, and slope. Elevated sandy bluffs are considered
31 sensitive for the presence of Paleo-Indian and Late Ceramic period sites. Relatively level
32 terraces bordering rivers and streams are sensitive for Late Paleo-Indian, Archaic, and Ceramic
33 period sites. This sensitivity is enhanced by the presence of rapids or confluences. Landforms at
34 the start or end of rapids at stream confluences and with a southern or eastern exposure are
35 particularly likely locations for Native American archaeological sites. The original shores of
36 lakes, particularly at inlets and outlets, are also sensitive for Late Paleo-Indian, Archaic, and
37 Ceramic period sites. Landforms in areas with a high density of known archaeological sites are
38 considered more sensitive than landforms in areas where sites are rare.

39 **New Hampshire and Vermont**

40 Developing a single, scientifically valid, objective, highly operationalized, deductively derived
41 model for locating Precontact period, Native American archaeological sites across Vermont or

1 New Hampshire would not be feasible because most of the area lacks representative data (Sloma
2 and Callum, 2002). The Vermont State Historic Preservation Office (SHPO) uses one broad
3 predictive model approved by the Vermont Advisory Council on Historic Preservation. The
4 SHPO's predictive model is intended to identify areas with a high potential for containing
5 significant Precontact Native American residential sites. The model may offer some guidance in
6 locating non-Native early settlement sites and some types of historic-period Native American
7 sites since these types of sites had similar environmental requirements to Precontact settlements.
8 The locations of individual Native American burials, cemeteries, and special-use areas during
9 any time period are not readily predictable and the model is unlikely to help in their
10 identification.

11 The present information on Precontact period, Native American archaeological sites, such as
12 lithic procurement, caves, ritual, subsistence, and habitation sites, would suggest a diverse
13 variety of Native American sites within the Northern Border study area from the Paleo-Indian to
14 the present time. These sites have been documented in a wide variety of environmental settings
15 ranging from bedrock, to upland, to small streams, to broad floodplains. Native Americans
16 apparently continuously occupied and utilized this region. New Hampshire sites with the largest
17 area, highest artifact density, and greatest number of occupations are apt to be located in
18 distinctive settings such as major river channels, particularly at falls, river confluences, or rich
19 alluvial bottomlands; the interface of tidal estuaries and fresh water; or the outlets of lakes. In
20 Vermont, sites with the largest area, highest artifact density, and greatest number of occupations
21 are apt to be located in the Champlain Valley bordering Lake Champlain, the Connecticut River
22 Valley, and other major river channels, particularly at falls, river confluences, or rich alluvial
23 bottomlands. Smaller, but no less important, Native American sites may be present beside
24 interior lakes, ponds, wetlands, and springs, as well as near important resource areas such as
25 lithic sources, rock shelters, and mountain passes.

26 **7.11.2.3 Historic Context**

27 This section provides a brief historic context that describes the development of the NE Region
28 after European contact. An expanded historic context and references can be found in Appendix
29 H.

30 Contact between Indigenous people and Europeans in northern New England began in the mid-
31 to-late sixteenth century from French outposts along the Atlantic coast of Canada. The earliest
32 settlement of Maine was the French colony at St. Croix in 1604. While the early French
33 occupations were focused on the fur trade and missionary work, the English settlements in
34 Massachusetts and southern New Hampshire were permanent occupations. Northern Maine
35 remained part of the French cultural sphere until after the Revolutionary War, while southern
36 coastal Maine, New Hampshire, and Vermont were in the English sphere of influence from the
37 beginning of their settlement.

38 The colonial period, especially before 1700, is characterized by intensive and brutal conflicts
39 between the colonists and the Indians (e.g., King Philip's War [1675-1676]). Later, conflicts
40 pitted the French and English and their Native allies in a series of conflicts for supremacy of the
41 New World—King William's War (1690-1700), Queen Anne's War (1702-1713), the French
42 and Indian War (1754-1763)—and gave rise to military traffic and conflict along Lake
43 Champlain and its waterways in areas of northern Vermont and New York.

1 Initial occupations in this rugged, heavily timbered region comprised fur trading, logging, and
2 small-scale agriculture. Timbering experienced resurgence in the late-nineteenth century,
3 especially in northern and interior Maine.

4 During the nineteenth century, development of transportation routes opened the region to
5 settlement. While poor roads kept settlement low until the 1850s, new routes included a variety
6 of highway types, canals, and later railroads, which were heavily concentrated in the southern
7 part of the region. These new routes opened new locations for settlement and provided new
8 opportunities for business. Agriculture in this region was generally poor, but commerce was
9 quick to use the abundant water power for operating a variety of mills. Small-scale textile mills
10 took root in the 1820s and soon spread over the region, expanding into a variety of small, water-
11 powered factories. These factories were complemented by small-scale agriculture, maple-syrup
12 collecting, hop farming, and dairying during the later-nineteenth century through the twentieth
13 century.

14 These small factories attracted numerous waves of immigrants during their operation but by the
15 mid-twentieth century were dying out. The introduction of the automobile revolutionized
16 settlement patterns and enhanced transportation capabilities. Tourism and recreation are
17 important components of the economy in this region.

18 **7.11.2.4 Historic/Protohistoric Archaeological Site Probability**

19 Among the known cultural resources in the NE Region are archaeological sites from the historic
20 and post-European contact periods. This section provides an overview of the current
21 understanding of historic archaeological site probability in the NE Region. This section includes
22 the Protohistoric Period (defined as the time between the initial arrival of European goods and
23 diseases and actual contact between Native Americans and non-Natives) which extended from
24 about A.D. 1500 to A.D. 1650. Items including guns, ceramics, and other elements of material
25 culture were quickly integrated into indigenous economic and subsistence systems.

26 The earliest direct contact between Native Americans and Europeans in the Northeast were
27 interactions between groups of coastal Indians and Basque, Portuguese, and Breton fishing
28 parties in the early 1500s. Later, after the arrival of French settlers at what is now Nova Scotia
29 in 1604 and the Pilgrims at Plymouth in what is now Massachusetts in 1620, European
30 involvement in the area intensified. The first fifty years of the contact period in the area
31 primarily involved interaction between Native American groups and non-Native settlers, fur
32 traders, and Christian missionaries.

33 **Maine**

34 Historic non-Native site-sensitivity assessments in Maine are based on an evolving set of
35 guidelines established by the MHPC in which early colonial period sites along the coast are
36 generally given higher priority than sites of later times and contexts. However, the provision for
37 the careful assessment of the first fifty years of settlement in any given township, regardless of
38 time period and the state's recognition of the significance of the region's historic industries, add
39 considerably to the inventory of historic-period archaeological sites in Maine. A working draft
40 of the state's agricultural context and the development of various other contexts, from logging
41 and lumbering to sporting camps, together with guidelines established by the National Park
42 Service provide additional means by which historic non-Native sensitivity in Maine is assessed.

1 The predictive site-location model for historic non-Native sites is in part also based on a set of
2 environmental variables similar to those favorable for Native American site selection, some of
3 which are directly borrowed from Precontact cultural settings, such as the utilization of travel
4 corridors, agricultural fields, and village sites. Use of a wide range of natural resources during
5 the historic period resulted in a large number of known and expected archaeological resources
6 related to rural industries, patterns of town development, and other historic contexts. The
7 archival record aids in the assessment of individual sites and landscapes within the region. Maps
8 and a variety of other documents aid in site identification and interpretation, potentially
9 answering questions concerning function, duration, and significance.

10 **New Hampshire and Vermont**

11 In Vermont, the Division for Historic Preservation (VDHP) highlights significant types of sites
12 in “Keeping Vermont A Special World: The Vermont Historic Preservation Plan.” This ten-year
13 plan summarizes historic contexts that describe what we know about our past according to
14 important themes, types of cultural resources, quantity, and quality. Archaeologists further
15 define significance as a site’s potential to yield important information about the past, despite site
16 size, artifact number, or site notoriety. The National Park Service maintains a summary website
17 of state historic preservation plans, including those for Vermont and New Hampshire.¹ Both
18 plans are currently under revision.

19 The State of Vermont promotes the use of its predictive model. Draft archaeological guidelines
20 for Vermont (VDHP, 2002) describe the application of the state’s predictive model:

21 The predictive model is an initial desk-review tool; it is only a coarse filter that
22 may highlight potential site areas. A project area that indicates a high potential
23 for containing a significant site on the predictive model may trigger a site visit.
24 The site visit results in a recommendation for further archaeological investigation,
25 or, results in a “sign off.”

26 The Vermont SHPO applies the predictive model during desk review of development projects
27 subject to state laws, although developers and state agencies may choose to hire archaeological
28 consultants to apply the predictive model which will then be reviewed by the SHPO. The SHPO
29 usually conducts site visits triggered by the predictive model for Act 250 and state reviews.

30 Historic-period archaeological sites are likely to vary in location, function, and age between
31 different physiographic regions, watersheds, and the landforms or settings where they were
32 established. In some contexts, there appears to be a correlation between Precontact period
33 Native American sites overlapped by later early historic-period sites (e.g., Doherty et al., 1995;
34 Doherty et al., 1997); these occurrences have yet to be fully explored. Shaffer (1998) discussed
35 this same point in regard to Pennsylvania archaeology.

36 Interest in historic-period archaeological sites is fairly recent in comparison to Precontact period
37 sites. The earliest excavation of a historic-period site in New Hampshire was in Wolfeboro in
38 1934–1935 when the Civilian Conservation Corps excavated inside the plantation-mansion cellar
39 hole of New Hampshire’s last colonial governor, John Wentworth (Starbuck, 1989). Since that

¹ See <http://www.nps.gov/history/hps/pad/stateplans/planlist.html>.

1 time, cultural resource-management work and academic research in Vermont and New
2 Hampshire has added to our knowledge of this later era of human occupation in this region. The
3 information is far from complete, and many sites remain to be identified and investigated.

4 The general pattern of historic settlement in New Hampshire and Vermont developed largely
5 around river channels and lakes, with floodplain areas often being the easiest areas to develop,
6 and later spreading into upland areas. Settlement pattern studies of historic-period non-Native
7 archaeological sites grew predominately from the field of geography (Glassie, 1968; Hubka,
8 1984; Meeks, 1986a; Meeks, 1986b; McHenry, 1979; McHenry 1986), local or regional history
9 (e.g., Russell, 1976), or anthropology (e.g., Elliott, 1977).

10 Today, historic archeologists may examine where settlers located upon the landscape and how
11 they arranged their farmsteads. For example, a constricted, linear (mostly north-south) farmstead
12 layout exists upon Connecticut River Valley terraces and Champlain lowland bedrock ridges
13 settled largely in the late-eighteenth and early nineteenth century by settlers of largely English
14 ancestry. Farmstead layout is likely to be different on deltas, lake bottoms, and perhaps hill
15 farms. Unfortunately, farmstead layout is poorly studied in all but the Connecticut River Valley
16 (Hubka, 1984; McHenry, 1986). McHenry (1986) has shown that eighteenth-century Vermont
17 field patterns even reflect differences among English settlers from Connecticut, Massachusetts,
18 and New Hampshire. Different patterns for “hill farms” have also been found (Melnick et al.,
19 1984). Little archaeological work has been conducted in Vermont and New Hampshire to
20 investigate the historic-period settlement pattern of other ethnic groups including Native
21 Americans, African Americans, Dutch, French, and others.

22 In a review of New Hampshire’s historic-period archeology, Starbuck (1994) pointed to gaps in
23 historic site data. He observed (1) that no archaeological study existed of any minority group in
24 the state; (2) women’s activities were poorly represented in archaeological studies; (3) there were
25 almost no comparisons of “coastal” versus “interior” settlement patterns; (4) there had been few
26 efforts to locate early posthole houses and other forms of poorly known architecture, which were
27 holdovers from English medieval styles; and (5) very little was done with the sites of farms and
28 early industries. Since that time, most of these deficiencies have been addressed to some degree,
29 but much work remains to be done.

30 Known historic-period sites and structures provide some general information as to where one
31 might expect to find archaeological sites of the same age, but not all of these properties are
32 documented. Developing a single, scientifically valid, objective, highly operationalized,
33 deductively derived model for locating historic-period archaeological sites across Vermont and
34 New Hampshire would not be feasible because most of the area lacks representative data (Sloma
35 and Callum, 2002). The ability to model for historic-period site locations and settlement patterns
36 has been demonstrated in several studies (Klein, 1973; Langhorne, 1976; Moran, 1978; Monroe
37 et al., 1980; Paynter, 1982; Mires, 1983; Lewis, 1984; O’Brien, 1984; Hasenstab and Resnick,
38 1990; Lukezic, 1990; Zubrow, 1990; Linebaugh and Robinson, 1994).

39 In some instances, a historic-period site may provide the only information when records are non-
40 existent. While most researchers are aware of maps as a “snapshot” in time, map review with a
41 null finding is often deemed sufficient to exclude the possibility of historic-period archaeological
42 sites. cursory review and premature findings can lead to costly, inadvertent discoveries that

1 should have been avoided. Archaeological investigations in Vermont have increasingly
2 identified late-eighteenth-century through nineteenth-century residential sites that are not
3 depicted on nineteenth-century maps.

4 In general for the entire area, historic archaeological sites can occur in or near present-day
5 municipalities and villages as well as along historic-period roads, particularly cross-roads. Sites
6 may also be found along certain railway sections and waterways.

7 Archaeological sites consist of remains and locations exhibiting evidence (usually artifacts) of
8 past human activity. These sites can be associated with both the prehistoric and historic periods
9 and can be visible on the ground surface or buried. In general, prehistoric sites consist of
10 villages, camps, rockshelters, workshops, quarries, and a variety of specialized activity areas
11 such as fishing and resource processing camps. Historic archaeological sites generally consist of
12 farmsteads, refuse dumps, privies, and residential sites as well as buried infrastructure sites such
13 as roads and canals. Historic-period archaeological deposits are also common in urban settings.

14 **7.11.2.5 Above-Ground Historic Property Types**

15 There are numerous above-ground historic properties along the New England border area that are
16 National Register listed, eligible, or potentially eligible for listing. This is particularly true for
17 Maine and parts of Vermont.

18 As a primarily rural, agricultural state, historic buildings in Maine tend overwhelmingly to be
19 residential and small-scale commercial (i.e., smaller downtown business districts). While the
20 earliest houses in the state, from the late-seventeenth century and early-eighteenth century, tend
21 to be along the coast, several eighteenth-century houses exist in the southern portions of the
22 study area. Most of the counties in the central and northern parts of the state, however, show few
23 if any eighteenth-century buildings. Houses from the early eighteenth century generally are one-
24 or one-and-one-half-story buildings, often constructed of logs, while houses from the middle and
25 later parts of the eighteenth century are one, one and one-half, or two stories in height,
26 constructed around a timber frame, and generally with a central brick chimney and unadorned
27 wood siding.

28 The northern portion of Maine, principally Aroostook County, was in flux through the early
29 nineteenth century as a result of the uncertainty over the border with Canada. Border tensions
30 led to the creation of a blockhouse fort (now located in Fort Kent) along the St. John River. The
31 early architectural traditions in northern Aroostook County along the border remained influenced
32 by the Acadian settlers, whose building technology differed from that of their English
33 counterparts in the lower part of the state. The Acadian vernacular architectural traditions in the
34 eighteenth century included log houses that used tenons at the corners rather than notches.

35 Further from the new and establishing towns of the central and southern portions of the state, in
36 the St. John River Valley along Maine's northern border with Canada, residential architecture
37 tended to be more conservative in style and continued to reflect the Acadian origins. Greek-
38 Revival influences remained longer in these rural areas and can be seen in the variations of
39 vernacular Acadian house types, including the one-and-one-half-story, front-gable, half-cape
40 house that is scattered throughout the central and northern portions of the state. By the early and
41 mid-twentieth century, however, examples of high-style residential architecture including
42 variations on the Colonial-Revival and Mediterranean styles can be found throughout the state.

1 One of Maine’s principal agricultural crops led to the establishment of a particular form of
2 agricultural building: the potato barn. Set partially below grade with only the roof extending
3 above the ground, examples of nineteenth-century potato barns can be seen throughout the
4 northern parts of the state, especially in northeastern Aroostook County. In addition to
5 residences, Maine’s industrial heritage continues to be represented in historic architecture. Some
6 small-scale industrial buildings remain in the southern portion of the study area: small mill
7 buildings that made use of the limited fall of the rivers and their tidal movement as they
8 approached the coast. More common, though, are the large-scale factory buildings relating to the
9 state’s industries, principally paper and textiles. By the late-nineteenth century and early
10 twentieth century, these buildings tended overwhelmingly to be built of brick, two- to four-
11 stories high, with rows of multi-paned, metal-framed windows. Like the sporting camps, many
12 of these older factory buildings tended to be located along the state’s rivers, to take advantage of
13 the available hydropower. These buildings are found most often in the smaller and mid-sized
14 Piedmont cities such as Waterville, Auburn, Madison, and Skowhegan. Maine also has a long
15 history of the use of hydroelectric power. Dating from the 1890s into the mid-twentieth century,
16 many hydroelectric powerhouses remain and generally are considered historically significant.

17 One type of monument likely to be found in the extreme northern parts of Maine is the border
18 monument. These monuments are small obelisks, approximately three-feet high, and are made
19 of either concrete or metal.

20 The study area in New Hampshire and Vermont consists of sparsely populated rural agricultural
21 and forested lands. Historic buildings in the northern and central regions of these two states
22 mostly reflect vernacular interpretations of popular architectural styles that may feature some
23 elements found in a particular style. One of the oldest log cabins in the nation, Hyde Log Cabin
24 (ca. 1783), is located in Grand Isle, Vermont. The region’s vernacular architecture incorporates
25 an individual builder’s ideas into the overall design as well as influences from architectural
26 traditions and customs adapted from European settlers. The mixture of the vernacular and high-
27 style examples in New Hampshire and Vermont enhance the overall character of each state’s
28 historic architecture.

29 New Hampshire and Vermont are also recognized for their rich agricultural history, which is
30 reflected in the existing farmsteads and agricultural landscape found across the North Country
31 regions of these two states. The Connecticut River, which serves as the boundary between the
32 two states, is a national scenic byway. This natural and historic-river corridor has been referred
33 to as “the heart” of New England because of the vital role it has played in the 250-year
34 development of the region. The Connecticut River Valley contains many riverside villages as
35 well as rural farming villages. The two states are further distinguished for their collection of
36 covered bridges. With a total of 106 bridges, Vermont possesses the most covered bridges in the
37 Nation.

38 The northern portions of New Hampshire and Vermont contain numerous state parks and several
39 historic sites such as the following in Vermont: the President Chester A. Arthur State Historic
40 Site, Chimney Point Historic Site in Addison on Lake Champlain, and Senator Justin S. Morrill
41 Homestead. Chimney Point on Lake Champlain in Vermont is one of the earliest, most intensely
42 settled, and most strategic sites in the Champlain Valley, with human habitation going back as
43 far as 7,500 years. The Champlain Lake and the Upper Hudson River valleys in Vermont and

1 New York contain the largest number of eighteenth-century forts and battlefields associated with
 2 key struggles in the French and Indian War and the Revolutionary War.

3 A small fraction of the NE Region has been previously inventoried and evaluated for historic
 4 structures. Actual numbers of recorded, above-ground historic properties and previous project-
 5 survey boundaries exist in SHPO databases and files, but exact numbers of cultural resources are
 6 not readily available for this overview. As is the case with other site types in the study area,
 7 there is a high probability of discovering previously unrecorded and significant above-ground
 8 historic properties that will meet the criteria for listing in the National Register.

9 Tables 7.11-1 and 7.11-3 identify historic properties that have been designated as historically
 10 important at the national, state, and local levels and briefly describe the historic environments in
 11 the vicinity of CBP facilities in the NE Region. Table 7.11-2 lists the historic buildings located
 12 on CBP properties in Maine.

13 **Table 7.11-1. Cultural Resources in the Vicinity of CBP Facilities in Maine**

Component *	Type**	Name	Address	National, State, and Local Historical Designations and Environment
OFO	POE	Eastport (Ferry)	100 Water Street Eastport, ME 04631	Island community; county-wide (partial) intensive survey in 1980; Eastport intensive survey in 1998; 6 National Register properties in the vicinity including 2 National Register districts and Fort Sullivan
OFO	POE	Lubec (Land)	Maine State Route 189 Eastport, ME 04631	3 miles from Eastport; FDR Memorial Bridge; National Register properties in vicinity including 2 light stations and 1 lifesaving Station
USBP	BPS	Calais	180 International Ave. Calais, ME 04619	Historically known as commerce center; 3 National Register districts and 9 National Register properties in the vicinity including 1 light station
OFO	POE	International Avenue	Route 1-Maine State Route 9 Calais, ME 04619	See description for Calais BPS above.
OFO	POE	Milltown Point	North Street at the Border Calais, ME 04619	See description for Calais BPS above.
OFO	POE	Ferry Point	Main Street at the Border Calais, ME 04619	See description for Calais BPS above.
OFO	POE	Vanceboro	Maine State Route 6 Vanceboro, ME 04491	Town located at eastern terminus of Maine State Route 6; part of intensive survey in 1987; no National Register properties listed in the vicinity

Component *	Type**	Name	Address	National, State, and Local Historical Designations and Environment
USBP	Sector HQ	Houlton	27 Customs Loop Houlton, ME 04730	Town located at northern terminus of Interstate 95; county seat for Aroostook County; part of intensive survey in 1987; 1 National Register district; 11 National Register properties in the vicinity
USBP	BPS	Houlton	27 Customs Loop Houlton, ME 04730	See description for Houlton Sector HQ above.
OFO	POE	Houlton	US Interstate 95 Houlton, ME 04730	See description for Houlton Sector HQ above.
OAM	Air Facility	Houlton	27 Customs Loop Houlton, ME 04730	See description for Houlton Sector HQ above.
OFO	POE	Forest City	Forest City Road at the Border Forest City, ME 04413	Extremely small rural community; no National Register properties in the vicinity
OFO	POE	Monticello	Fletcher Road at the Border Monticello, ME 04760	Small rural community; no National Register properties in the vicinity
OFO	POE	Orient	Boundary Road at the Border Orient, ME 04471	Small rural community; no National Register properties in the vicinity
USBP	BPS	Fort Fairfield	Maine State Route 167 Fort Fairfield, ME 04742	Small rural town; 2 National Register properties in the vicinity
OFO	POE	Fort Fairfield	4 Boundary Line Road Fort Fairfield, ME 04742	Small rural community; no National Register properties in the vicinity
OFO	POE	Easton	Ladner Road at the Border Easton, ME 04704	Small rural community; no National Register properties in the vicinity
OFO	POE	Limestone	410 Grand Falls Road Limestone, ME 04750	Small rural town; 1 National Register property in the vicinity
USBP	BPS	Van Buren	137 Bridge St. Van Buren, ME 04785	Small rural town; 5 National Register properties in the vicinity
OFO	POE	Van Buren	137 Bridge St. Van Buren, ME 04785	Small rural community; no National Register properties in the vicinity

Component *	Type**	Name	Address	National, State, and Local Historical Designations and Environment
OFO	POE	Hamlin	Boundary Road at the Border Hamlin, ME 04785	Small rural community; 1 National Register property in the vicinity
OFO	POE	Madawaska	63 Bridge Avenue Madawaska, ME 04756	Rural town; northernmost town in New England; 2 National Register properties in the vicinity
USBP	BPS	Fort Kent	401 West Main Street Fort Kent, ME 04743	Small rural town; northern terminus of U.S. Route 1; 2 National Register properties in the vicinity
OFO	POE	Fort Kent	401 West Main Street Fort Kent, ME 04743	See description for Fort Kent BPS above.
OFO	POE	Estcourt Station	Frontier Road at the Border Estcourt Station, ME 04741	Rural village in Big Twenty Township; northernmost point in Maine; no National Register properties in the vicinity
USBP	BPS	Jackman	2614 Main Street Sandy Bay Township, ME 04945	Small rural town; 1 National Register property in the vicinity
OFO	POE	Jackman	US 201 Sandy Bay Township, ME 04945	See description for Jackman BPS above.
OFO	POE	Coburn Gore	State Route 27 at the Border, Coburn Gore, ME 04936	Small rural community; 1 National Register property in the vicinity
OFO	POE	St. Aurelie	Baker Lake Road at the Border Seboomook Lake, ME 04478	Timberlands; no National Register properties in the vicinity
OFO	POE	St. Juste	Realty Rd Seboomook Lake, ME 04478	Remote border station; no National Register properties in the vicinity
OFO	POE	St. Pamphile	Blanchette Road at the Border Northwest Aroostook, ME 00125	Small settlement; remote border station; no National Register properties in the vicinity

Component *	Type**	Name	Address	National, State, and Local Historical Designations and Environment
OFO	POE	St. Zacharie	Golden Road at the Border Seboomook Lake, ME 04478	Remote border station; no National Register properties in the vicinity
USBP	BPS	Rangeley	96 Main St. Rangeley, ME 04970	Small rural town; center of Rangeley Lakes Region; 4 National Register properties in the vicinity

- 1 *OFO = CBP Office of Field Operations, USBP = U.S. Border Patrol, OAM = CBP Office of Air and Marine
2 **POE = Port of Entry, BPS = Border Patrol station

1

Table 7.11-2. Historic Buildings on CBP Property in Maine

Building Name	Type	City	Number	Year Finished	Rating Class*
U.S. Border Station	Border Station	Calais	ME0009ZZ	1938	5a
U.S. Border Station	Border Station	Calais	ME0501BC	1936	5a
U.S. Border Station Garage	Border Station	Calais	ME0503BC	1936	Not rated
U.S. Border Station	Border Station	Coburn Gore	ME0551BE	1932	5a
U.S. Border Station & Customs Residence	Residence	Coburn Gore	ME0552BE	1936	5a
U.S. Border Station & Immigration Residence	Residence	Coburn Gore	ME0553BE	1936	5a
U.S. Border Station	Border Station	Fort Fairfield	ME0601BF	1934	5a
U.S. Border Station & Immigration Residence	Residence	Fort Fairfield	ME0603BF	1934	Not rated
U.S. Border Station	Border Station	Orient	ME0751BT	1937	5a
U.S. Border Station	Garage	Orient	ME0752BT	1937	5a

2

Source: (USGSA, 1999).

3

4

*GSA Historic Rating Class 5a: A building 50-years old or older that has not been evaluated for National Register eligibility but is likely eligible, such as a courthouse, custom house, or historic office building (“Held in Public Trust” Appendix C; see footnote above).

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Table 7.11-3. Cultural Resources in the Vicinity of CBP Facilities in New Hampshire and Vermont

Component*	Type*	Name	Address	National, State, and Local Historical Designations and Environment
NEW HAMPSHIRE				
OFO	POE	Pittsburg Station	Route 3 at the Border, (Daniel Webster Hwy) Pittsburg, NH 03592	Located in Great North Woods Region; largest town by area in state; sparsely populated; wilderness conditions; 1 State Register property and no National Register properties in the vicinity
VERMONT				
OFO	POE	Beecher Falls	1429 Vermont Route 253 Beecher Falls, VT 05902	Rural village in Town of Canaan; no National Register properties in vicinity
OBP	BPS	Beecher Falls	1429 Vermont Route 253 Beecher Falls, VT 05902	See description for Beecher Falls POE above.
OFO	POE	Derby Line	Interstate 91 Derby Line, VT 05830	Rural village in Town of Derby; 1 of 2 villages where U.S./Canadian border runs through community; 1 National Register property in village; 2 National Register properties in town
OFO	POE	Beebe Plain Station	Beebe Road at the Border Beebe Plain, VT 05823	Very small rural village in Town of Derby; 1 of 2 villages where U.S./Canadian border runs through community; no National Register properties in village; 2 National Register properties in town
OFO	POE	Derby Line (Route 5)	US Route 5 at the Border, Derby Line, VT 05830	Rural village in Town of Derby; 1 of 2 villages where U.S./Canadian border runs through community; 1 National Register property in village; 2 National Register properties in town
OFO	POE	North Troy Station	VT 243 at the border, North Troy, VT 05859	Small rural village in Town of Troy; no National Register properties in the vicinity
OFO	POE	Highgate Springs	Interstate 89 at the Border, Highgate Springs, VT 05460	Small rural village in Town of Highgate; no National Register properties in the vicinity
OFO	POE	Alburg Springs Station	Alburg Springs Road at the Border, Alburg, VT 05440	Small rural village in Town of Alburg; no National Register properties in the vicinity

Component*	Type* *	Name	Address	National, State, and Local Historical Designations and Environment
OFO	POE	Alburg Station	VT 225 at the Border, Alburg, VT 05440	Rural town with lakeside community; U.S./Canadian border officials share same building; 1 National Register property in the vicinity
OFO	POE	Morses Line Station	VT Route 235 at the Border/Morses Line Rd Franklin, VT 05457	Small unincorporated village on U.S./Canadian border; no National Register properties in the vicinity
OFO	POE	Norton	Vermont Route 147, Norton, VT 05907	Rural town; no National Register properties in the vicinity
OFO	POE	Canaan Station	VT 141 at the Border, Canaan, VT 05903	Small rural town; 1 National Register property in the vicinity
OFO	POE	Richford	Vermont Route 139 Richford, VT 05476	Rural town; farmlands; 5 National Register properties and 1 National Register district in the vicinity
OFO	POE	East Richford Station	VT 105/Glen Sutton Rd, Richford, VT 05476	See description for Richford POE above.
OFO	POE	Pinnacle Road Station	Pinnacle Road at the Border, Richford, VT 05476	See description for Richford POE above.
OFO	POE	West Berkshire Station	VT 108 at the Border, Richford, VT 05476	Rural village in Town of Berkshire; no National Register properties in Village; 1 National Register property in town
OFO	POE	St. Albans	50 S. Main St, Suite 100R St. Albans, VT 05478	Rural town; 9 National Register properties and 1 National Register district in the vicinity
OBP	BPS	Richford Station	80 Main St Richford, VT 05476	Rural town; farmlands; 5 National Register properties and 1 National Register district in the vicinity
OBP	Air Facility	Swanton Station	62 Airport Rd, Swanton, VT 05488	Rural town; center of Abenaki activity and culture; 6 National Register properties in the vicinity

Component*	Type*	Name	Address	National, State, and Local Historical Designations and Environment
OBP	Sector HQ	Swanton Station	62 Airport Rd, Swanton, VT 05488	See description for Swanton Station Air Facility above.
OAM	BPS	Swanton	62 Airport Rd, Swanton, VT 05488	See description for Swanton Station Air Facility above.

1 *OFO = CBP Office of Field Operations, USBP = U.S. Border Patrol, OAM = CBP Office of Air and Marine
2 **POE = Port of Entry, BPS = Border Patrol station

3 7.11.2.6 Native American Resources

4 This section provides information about the potential location of Native American cultural
5 resources, sacred sites, and traditional cultural properties (TCPs) in the NE Region, based on the
6 geographic location of Native Americans both historically and in the present. There are five
7 tribal groups within the New England area (Table 7.11-4). Three of these tribes have
8 reservations within the NE Region study area, all of which are in the State of Maine (Figure
9 7.11-1). No Federally recognized tribes are located in New Hampshire or Vermont

10 **Table 7.11-4. Native American Tribes that have a Reservation, Judicially Established**
11 **Interest, or Established Traditional Ties to Land within the 100-mile PEIS Corridor**

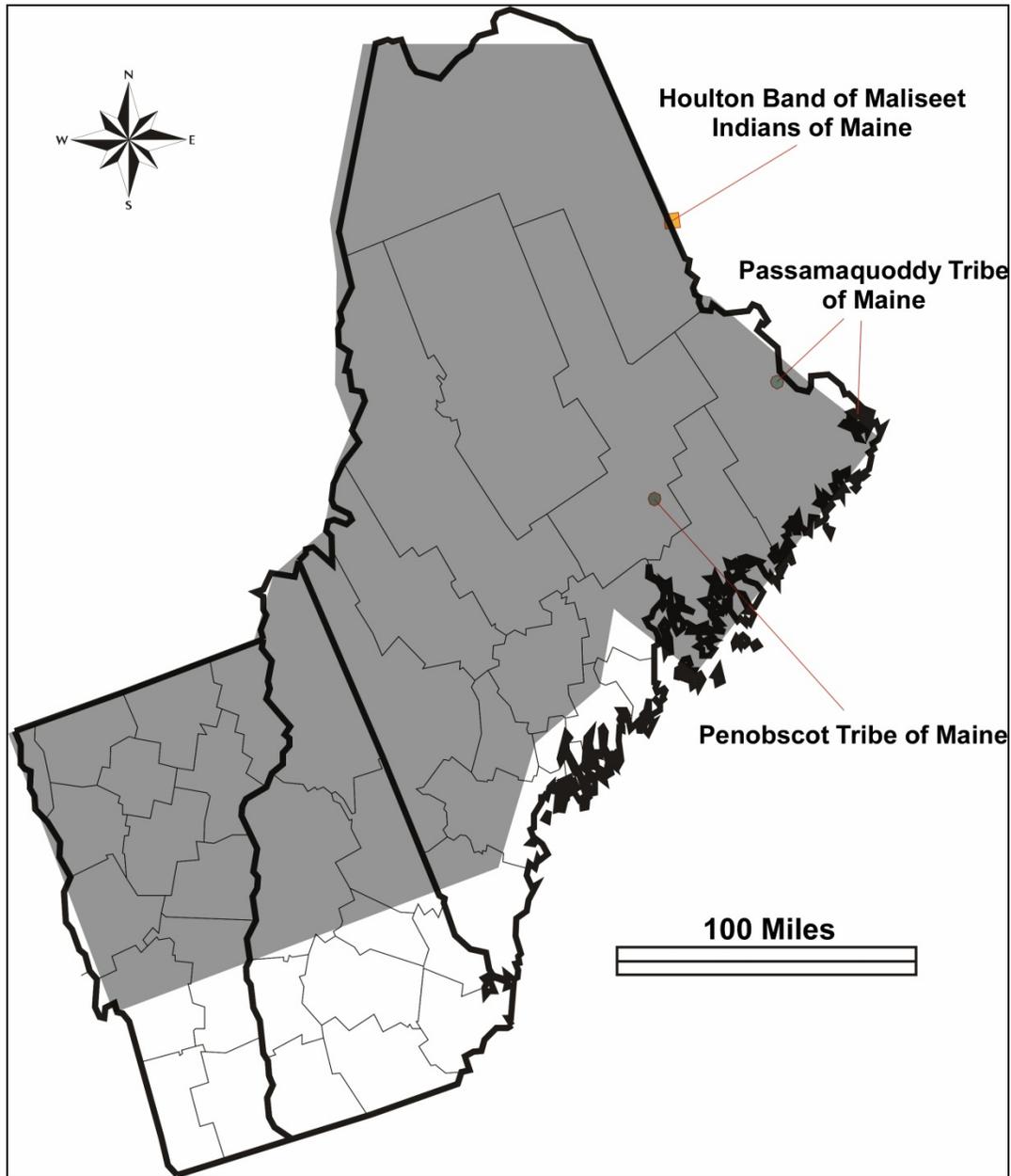
Aroostook Band of Micmac Indians
Houlton Band of Maliseet Indians of Maine
Passamaquoddy Tribe of Maine
Penobscot Tribe of Maine
Wabanaki Nation

12 The following maps indicate federally recognized tribes that have a reservation within
13 approximately 100 miles of the Canadian border, have a judicially established connection to land
14 within the 100-mile corridor, or have established traditional ties that may involve traditional
15 cultural properties or archaeological sites. The maps include:

- 16 1. A map of Indian reservations located within the 100-mile corridor (Figure 7.11-1);
- 17 2. A USGS map showing nineteenth-century cessions, reservations, and portages (Figure
18 7.11-2). This map was retrieved from ancestry.com; while the sourcing is unclear, the
19 accuracy is corroborated by a 1992 map compiled by the Bureau of Indian Affairs and a
20 1998 GIS layer created by USGS (not included). The map shows tribes that had a
21 presence along the Northern Border 100 years ago and indicates cases where Indian lands
22 were ceded prior to that period;
- 23 3. A USGS map showing judicially established Indian land areas as of 1978 (Figure 7.11-3).
24 The map portrays the results of cases before the U.S. Indian Claims Commission or U.S.
25 Court of Claims in which an American-Indian tribe proved its original tribal occupancy
26 of a tract within the continental United States; and,

1 4. A USGS map indicating early tribal, cultural, and linguistic areas (Figure 7.11-4). The
2 information was derived from anthropological, archaeological, and linguistic studies.
3 The map generally corroborates the other maps with regard to traditional tribal areas.

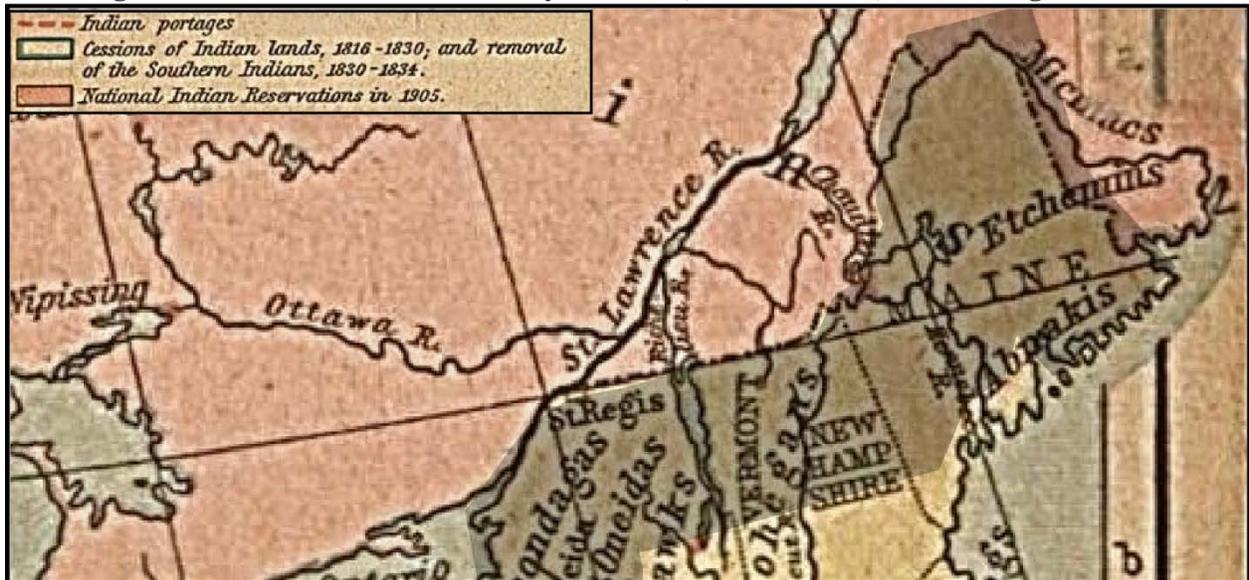
4 **Figure 7.11-1. Native American Lands Within the 100-mile PEIS Corridor Crossing**
5 **Maine, New Hampshire, and Vermont**



6
7 Source: (USDOJ, 1991).
8 Note: A shaded 100-mile corridor has been added.
9

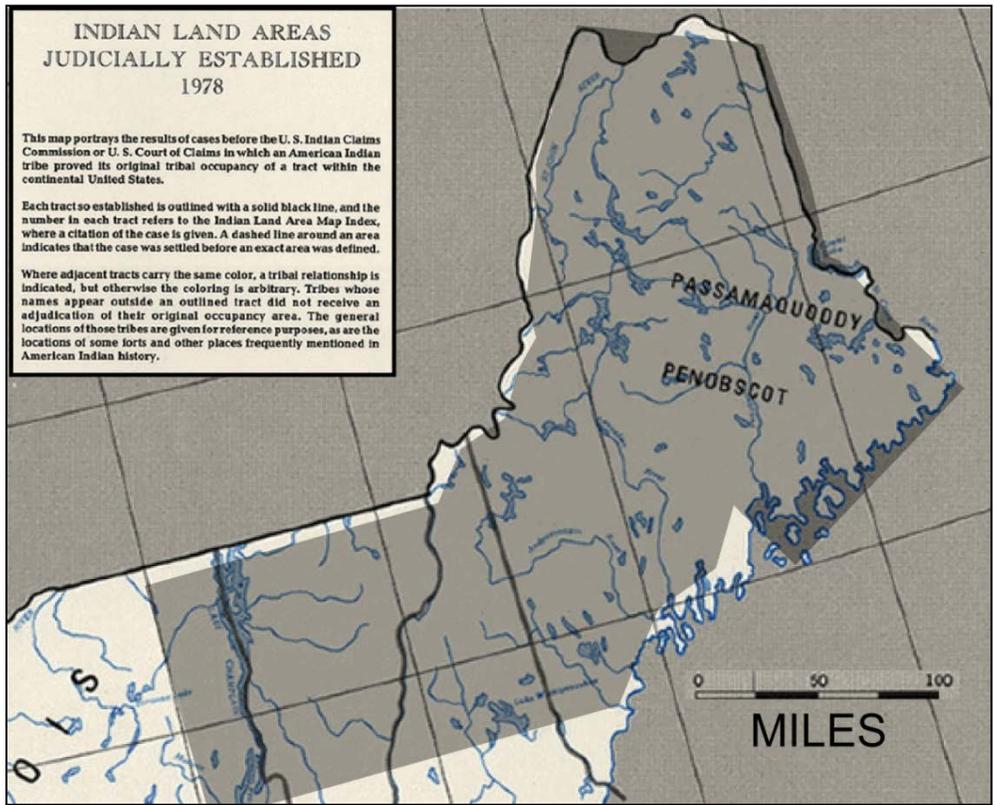
1
2

Figure 7.11-2. Nineteenth-Century Cessions, Reservations, and Portages (1907)



3
4 Source: (ancestry.com, No Date).
5 Note: A shaded 100-mile corridor has been added.

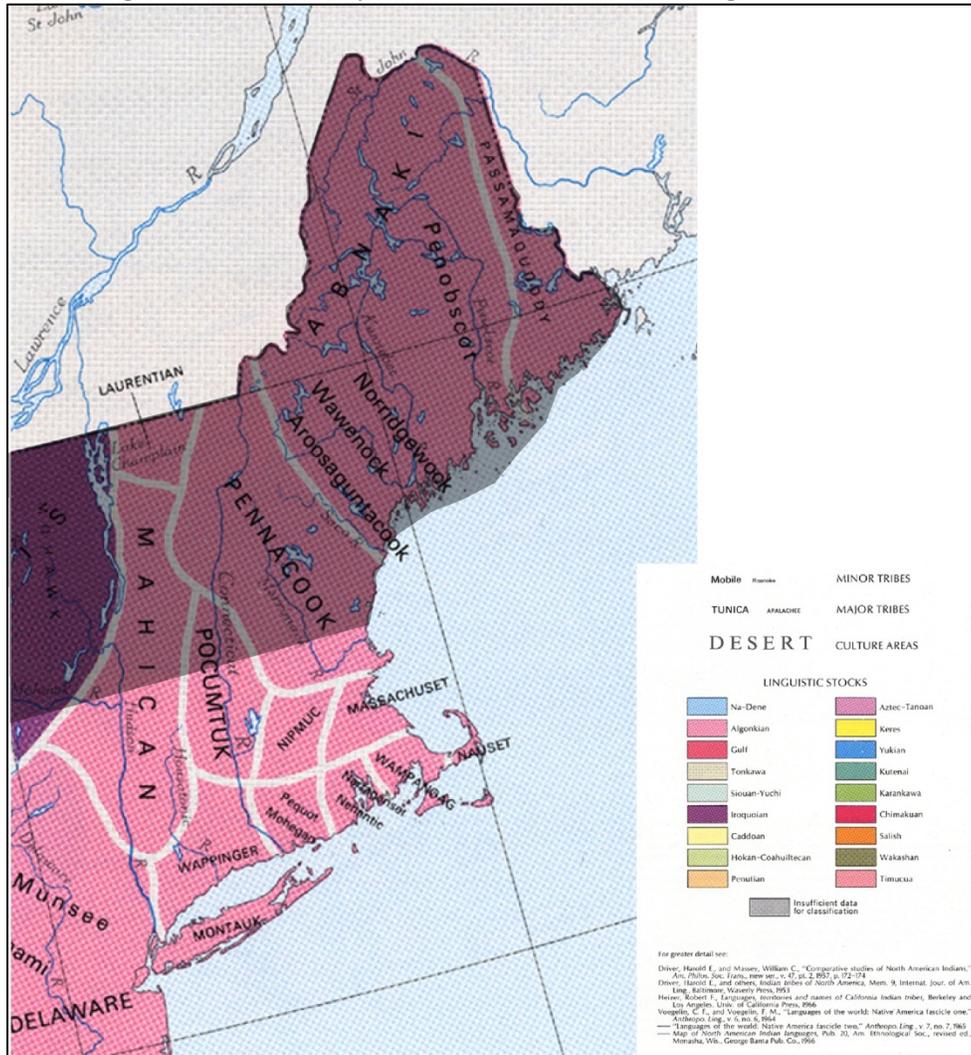
Figure 7.11-3. Judicially Established Indian Land Areas as of 1978



7
8 Source: (USDOJ, 1978).
9 Note: A shaded 100-mile corridor has been added.

1

Figure 7.11-4. Early Tribal, Cultural, and Linguistic Areas



2

3 Source: (USDOI, 1991).

4

Note: A shaded 100-mile corridor has been added.

5 **7.11.2.7 Paleontological Resources**

6

7 As with archaeology, paleontologists use a variety of information and techniques to carry out
8 *predictive modeling*, the process of assessing the probability of existence of paleontological sites
9 in a given location. This section provides an overview of the current understanding of
10 paleontological site probability in the NE Region. An expanded discussion of paleontological
resources and references can be found in Appendix H.

11

12 Within the study area, four major geological groups were identified: sedimentary, volcanic,
13 plutonic, and metamorphic. Of these rock groups, only sedimentary rocks have a high or
14 moderate potential for containing paleontological materials. Both plutonic and volcanic rocks
15 rarely contain fossils because igneous environments are not suitable for living things.
16 Metamorphic rocks rarely contain fossils because the conditions of metamorphism tend to alter
the texture of the rocks and destroy any fossils contained within.

1 **Maine**

2 Paleontological-sensitive geological units in Maine include Paleozoic and Cenozoic deposits.
3 Paleozoic deposits containing fossils have been destroyed by metamorphism associated with
4 orogenies (mountain-building events) within the southern portion of the study area only. In all
5 other areas, the Paleozoic deposits are intact. Paleozoic deposits represent sea-level fluctuations
6 and include habitats ranging from nearshore to deepwater. Fossils from these geological units
7 include numerous invertebrates. Cenozoic deposits consist of retreating glacial deposits
8 containing many different plant and large-vertebrate fossils.

9 **New Hampshire**

10 Paleontologically sensitive geological units in New Hampshire include only a very small area in
11 the north of the state. These units are only of Cenozoic age because metamorphism associated
12 with the orogenies destroyed or altered any sediments formed during Paleozoic times. Cenozoic
13 deposits consist of retreating glacial deposits containing many different plant and large-
14 vertebrate fossils.

15 **Vermont**

16 Paleontologically sensitive geological units in Vermont include Paleozoic and Cenozoic
17 deposits. Paleozoic deposits containing fossils are sparse in Vermont, and metamorphism
18 associated with the orogenies destroyed or altered any sediments formed at this time. Paleozoic
19 sediments include sandstone, siltstone, and mudstone and contain bryozoans, brachiopods,
20 cephalopods, gastropods, sponges, and trilobites. Cenozoic deposits consist of Pleistocene
21 glacial deposits containing large-vertebrate fossils.

1 **7.12 ENVIRONMENTAL JUSTICE AND PROTECTION OF CHILDREN**

2 **7.12.1 INTRODUCTION**

3 Executive Order 12898 of February 11, 1994 (EO 12898, 1994), titled “Federal Actions to
4 Address Environmental Justice in Minority Populations and Low-Income Populations,” requires
5 that each Federal agency identify and address any disproportionately high and adverse effect of
6 its programs, policies, and activities on minority and low-income populations. The U.S.
7 Environmental Protection Agency (EPA), defines *environmental justice* as “the fair treatment
8 and meaningful involvement of all people regardless of race, color, national origin, or income
9 with respect to the development, implementation, and enforcement of environmental laws,
10 regulations, and policies” (USEPA, 2010).

11 Executive Order 13045 of April 21, 1997 (EO 13045), titled “Protection of Children from
12 Environmental Health Risks and Safety Risks,” places a high priority on the identification and
13 assessment of environmental health and safety risks that may disproportionately affect children.
14 The order requires that each agency “ensure that its policies, programs, activities, and standards
15 address disproportionate risks to children that result from environmental health or safety risks.”
16 EO 13045 considers that physiological and social development of children makes them more
17 sensitive than adults to adverse health and safety risks and recognizes that children in minority,
18 low-income, and indigenous populations are more likely to be exposed to, and have increased
19 health risks from, environmental contamination than the general population (USEPA, 2010).

20 **7.12.2 AFFECTED ENVIRONMENT**

21 This section describes the affected environment for the assessment of potential environmental-
22 justice effects that could result from implementation of any of the U.S. Customs and Border
23 Protection (CBP) program alternatives in the New England (NE) Region. The affected
24 environment identifies and describes minority and low-income populations, as well as
25 populations of children that may be present in the defined study area and that may be
26 differentially affected by actions proposed under each of the alternatives considered in this
27 Programmatic Environmental Impact Statement (PEIS).

28 The study area for the evaluation of environmental-justice effects is defined—in accordance with
29 section 7.10, Socioeconomic Resources—as the border communities in both the United States
30 and Canada within 100 miles of the U.S.-Canada border. The U.S. portion of this study area (NE
31 Region) includes the border communities in the States of Maine, New Hampshire, and Vermont.
32 The study area north of the NE Region in Canada includes the border communities in the
33 Provinces of Quebec, New Brunswick, and Nova Scotia. For comparison purposes, the analysis
34 also includes the populations of the respective border states and Canadian provinces as a whole.
35 Border communities are defined geographically by the administrative boundaries of American
36 counties and Canadian census divisions contained within or overlapping the study area. A
37 detailed demographic analysis of the study area is in Section 7.10.

38 **7.12.2.1 Minority Populations**

39 The most recent U.S. Census data (USDOC, 2000a) for minority populations available for all
40 counties and states in the United States are part of the Decennial Census for the year 2000.
41 Statistical data from this census have been used to characterize the minority populations within

1 the NE Region. Summary statistics for minority populations in the NE Region, their respective
 2 states, and the Nation are presented in Table 7.12.-1.

3 In general, minority populations are not present in the NE Region at higher levels than in either
 4 the respective states or the national population as a whole. Minority populations do not exceed 4
 5 percent of the population in the border communities of any of the three states in the region or in
 6 the combined NE Region as whole.

7 The individual states of the NE Region are relatively homogeneous by population. Minority
 8 percentages for the border communities in each of the individual states and for the larger state
 9 populations are relatively consistent, differing by less than 1 percentage point across all
 10 jurisdictions and for the combined NE regional total. Populations of Asian, Native Hawaiian,
 11 Pacific Islander, and Others constitute the largest single minority identification in the NE
 12 Region, with 1 percent of the total population. Persons of Hispanic origin represent the second
 13 largest group, with 0.8 percent of the population.

14 **Table 7.12-1. Minority Statistics for the New England Region**
 15 **(Percent of Population)**

Border State/Region*		White	Black or African American	American Indian and Alaska Native	Asian, Native Hawaiian, Pacific Islander, Other	More Than One Group	Hispanic Origin**
Maine	NE Region	96.9	0.5	0.6	0.9	1.1	0.7
	Statewide	97.0	0.5	0.6	0.9	1.1	0.7
New Hampshire	NE Region	97.1	0.4	0.3	1.0	1.2	0.8
	Statewide	96.0	0.7	0.2	1.9	1.2	1.6
Vermont	NE Region	96.6	0.5	0.5	1.1	1.3	0.8
	Statewide	96.7	0.5	0.4	1.0	1.3	0.9
NE Region Total	NE Region	96.9	0.5	0.5	1.0	1.2	0.8
	Selected States	96.5	0.6	0.4	1.3	1.2	1.1
Total United States		75.1	12.2	0.9	9.2	2.6	12.5

16 Source: (USDOC, 2000a).

17 *Statistics presented in the unshaded rows include only those portions of the states that lie within the study area; this
 18 includes all counties overlapping the area within 100 miles south of the border.

19 **Hispanic origin is an ethnicity that may include individuals who are also represented in other categories (such as
 20 White or Black). Therefore, Hispanic origin is a separate measure and is calculated separately from the other
 21 categories.

22 The minority populations north of the NE Region in Canada are represented by data from the
 23 2006 Census of Canada (Table 7.12-2). Similar to the American portion of the study area,
 24 border communities in the three provinces are relatively homogeneous. The minority segment of

1 the border communities represents 9.2 percent of the total population, approximately 7 percent
 2 smaller than the minority component of the national population. There are no segments of the
 3 study area north of the NE Region, or of the three provinces containing the study area, in which
 4 the minority component of the population exceeds 10 percent.

5 The “Other Visible Minority” classification (including multiple ethnicities) constitutes the largest
 6 single minority category in the study area north of the NE Region in Canada. This category
 7 consists primarily of the following groups: Chinese, South Asian, Arab, West Asian, Filipino,
 8 Southeast Asian, Latin American, Japanese, and Korean. However, with the exception of
 9 Quebec, Aboriginal Peoples constitute the largest single identifiable minority within the study
 10 area. The percentage of the population represented by Aboriginal Peoples in the study area does
 11 not exceed 7 percent in any jurisdiction.

12 **Table 7.12-2. Visible Minority Statistics North of the New England Region in Canada***
 13 **(Percent of Population)**

Border Province/Region**		Not a Visible Minority	Black	Other Visible Minority	Two or More Visible Minorities	Aboriginal Peoples***
New Brunswick	North of NE Region	97.8	0.7	1.4	0.1	2.6
	Province	98.1	0.6	1.2	0.1	2.5
Nova Scotia	North of NE Region	97.6	1.7	0.6	0.1	7.0
	Province	95.8	2.1	1.9	0.1	2.7
Quebec	North of NE Region	90.3	2.7	6.6	0.2	0.8
	Province	91.2	2.5	6.1	0.2	1.5
North of NE Region Total	North of NE Region	90.8	2.6	6.2	0.2	1.0
	Selected Provinces	92.2	2.3	5.3	0.1	1.7
Total Canada		83.8	2.5	13.3	0.4	3.8

14 Source: (StatCan, 2006a).

15 *Canada’s Employment Equity Act (2005) defines *visible minorities* as "persons, other than Aboriginal peoples,
 16 who are non-Caucasian in race or non-white in color."

17 **Statistics presented in the unshaded rows account only for those portions of the provinces that lie within the study
 18 area; this includes all census divisions overlapping the area within 100 miles north of the border.

19 ***The “Other Visible Minority” population consists mainly of the following groups: Chinese, South Asian, Black,
 20 Arab, West Asian, Filipino, Southeast Asian, Latin American, Japanese, and Korean.

21 ****Self-identification by Aboriginal Peoples does not preclude self-identification inclusion in one of the other
 22 categories. The “Aboriginal Peoples” column of this table is, therefore, not additive with the other columns.

1 **7.12.2.2 Low-Income Populations**

2 Data from the most recently completed U.S. Census (USDOC, 2000b; USDOC, 2000c) were
 3 used to characterize low-income minority populations in the NE Region border-community study
 4 area. Median household income and poverty rates are in Table 7.12-3.

5 The median household income for the combined population of the border communities in the NE
 6 Region in 2000 is \$50,069. This is \$3,987 lower than the combined median for the three
 7 individual states that make up the NE Region and \$2,982 lower than the national median
 8 household income. For the individual States of Maine and Vermont, median income for the
 9 border communities is slightly higher than for the entire state population as a whole. In New
 10 Hampshire, the median household income of the border communities is substantially lower, by
 11 \$7,605, than the median for the state population as a whole.

12 Within the individual states of the region, the border communities of Maine and Vermont have
 13 poverty rates substantially the same as that for their respective state as a whole; however, poverty
 14 levels among the border communities of Maine were 0.1 percent higher than that for the state as
 15 a whole. In the State of New Hampshire, poverty levels for the border communities exceed the
 16 level for the state by 0.8 percent.

17 **Table 7.12-3. Income and Poverty Statistics for the New England Region**

Border State/Region*		Median Household Income** (\$US)	Percent of Population Below the Poverty Line
Maine	NE Region	47,503	11.0
	Statewide	47,046	10.9
New Hampshire	NE Region	54,887	7.3
	Statewide	62,492	6.5
Vermont	NE Region	52,338	9.4
	Statewide	51,614	9.4
NE Region Total	NE Region	50,069	9.9
	Selected States	54,056	8.9
Total United States		53,051	12.4

18 Source: (USDOC, 2000b; USDOC, 2000c).

19 *Statistics presented in the unshaded rows include only those portions of the states that lie within
 20 the study area; this includes all counties overlapping the area within 100 miles south of the border.

21 **Median household income is reported from the 2000 U.S. Census in inflation-adjusted 2009
 22 U.S. dollars.

23 Median household income and poverty levels for the border communities north of the NE Region
 24 in Canada are represented by data from the 2006 Census of Canada. Statistics for these
 25 communities and their respective provinces are in Table 7.12-4.

26 The median income for the combined population of the border communities in the three
 27 provinces is \$43,692. This is \$1,016 higher than the median for the total population of the three

1 provinces as a whole, but \$5,701 lower than the national median. Within the individual
 2 provinces, the border communities of New Brunswick and Quebec have a higher median
 3 household income than their respective provincial populations. The median income for the
 4 border communities of Nova Scotia, \$36,138, is substantially lower than the median for the
 5 province as a whole.

6 Poverty levels for the border communities of Nova Scotia are equivalent to that for the provincial
 7 population as a whole. For border communities in New Brunswick and Quebec, the percent of
 8 low-income families is 0.3 percent higher than that for the population of their respective
 9 province.

10 **Table 7.12-4. Income and Poverty Statistics North of the New England Region in Canada**

Border Province/Region*		Median Household Income** (\$US)	Percent of Low-Income Economic Families***
New Brunswick	North of NE Region	42,435	10.7
	Province	41,620	10.4
Nova Scotia	North of NE Region	36,138	10.3
	Province	42,920	10.3
Quebec	North of NE Region	43,846	12.6
	Province	42,748	12.3
North of NE Region Total	North of NE Region	43,692	12.5
	Selected Provinces	42,676	11.9
Total Canada		49,393	11.6

11 Source: (StatCan, 2006b).

12 *Statistics presented in the unshaded rows include only those portions of the provinces that lie within the
 13 study area; this includes all census divisions overlapping the area within 100 miles north of the border.

14 **Median household income is reported from the 2006 Canadian Census in inflation-adjusted 2009 U.S.
 15 dollars.

16 ***The Canadian Census reports statistics for “low-income” economic families. This
 17 threshold-based designation is comparable to the poverty statistics reported in the U.S.
 18 Census. An *economic family* is a group of two or more persons who live in the same dwelling
 19 and are related to each other by blood, marriage, common-law, or adoption. A couple may be
 20 of opposite or same sex. Foster children are included.

21 **7.12.2.3 Population of Children under 18 Years of Age**

22 The distribution of population by age for the American border communities of the NE Region is
 23 in Table 7.12-5. For the border communities within individual states and for the states that make
 24 up the NE Region, the percentage of children under the age of 18 does not exceed the percentage
 25 in the national population.

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**Table 7.12-5. Age Distribution in the New England Region
(Percent of Population)**

Border State/Region*		Under 18	18-24	25-34	35-44	45-54	55-64	65+
Maine	NE Region	23.7	8.3	12.4	16.8	15.1	9.6	14.2
	Statewide	23.6	8.2	12.3	16.8	15.1	9.7	14.4
New Hampshire	NE Region	23.5	8.4	11.6	16.8	15.4	9.8	14.5
	Statewide	25.0	8.3	12.9	18.0	14.9	8.9	12.0
Vermont	NE Region	24.3	9.7	12.4	16.8	15.3	9.2	12.3
	Statewide	24.2	9.4	12.2	16.8	15.4	9.3	12.7
NE Region Total	NE Region	23.8	8.6	12.2	16.8	15.2	9.5	13.8
	Selected States	24.3	8.5	12.5	17.2	15.1	9.3	13.1
Total United States		25.6	9.6	14.1	16.3	13.4	8.6	12.4

3

Source: (USDOC, 2000c).

4

*Statistics presented in the unshaded rows account only for those portions of the states that lie within the study area; this includes all counties overlapping the area within 100 miles south of the border.

5

6

The distribution of population by age for the border communities north of the NE Region in

7

Canada is in Table 7.12-6. For the border communities in all three provinces of the region,

8

children under 20 years of age represent 23.1 percent of the total population of the study area.

9

This is comparable to the percentage of children in the combined population of the three

10

provinces but slightly lower than the national percentage. For border communities in each of the

11

individual provinces and for the population of the individual provinces as a whole, the

12

percentage of children in the population does not exceed the national percentage.

1
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**Table 7.12-6. Age Distribution North of the New England Region in Canada
(Percent of Population)**

Border Province/Region*		Under 20	20-24	25-34	35-44	45-54	55-64	65+
New Brunswick	North of NE Region	23.8	6.1	11.9	15.0	16.4	12.7	14.0
	Province	23.1	6.2	12.1	15.1	16.5	13.0	14.1
Nova Scotia	North of NE Region	22.2	5.0	9.7	14.6	16.1	14.8	17.6
	Province	23.0	6.2	11.6	15.1	16.4	13.2	14.5
Quebec	North of NE Region	23.1	6.4	13.0	15.1	16.4	12.6	13.4
	Province	23.2	6.3	12.9	15.0	16.5	12.7	13.5
North of NE Region Total	North of NE Region	23.1	6.3	12.9	15.0	16.4	12.7	13.5
	Selected Provinces	23.2	6.3	12.7	15.0	16.5	12.8	13.6
Total Canada		24.7	6.6	12.8	15.3	15.8	11.7	13.0

3 Source: (StatCan, 2006c).

4 *Statistics presented in the unshaded row account only for those portions of the province that lie within the study
5 area; this includes all census divisions overlapping the area within 100 miles north of the border.

6

1 **7.13 HUMAN HEALTH AND SAFETY**

2 **7.13.1 INTRODUCTION**

3 Many of the routine activities conducted by the U.S. Customs and Border Protection (CBP) in
4 the New England Region have the potential to affect human health and safety (HH&S). HH&S
5 relates to the health and safety of the general public (including vehicle occupants), CBP and
6 station employees, and maintenance personnel. Safety can also refer to safe operations of
7 aircraft or other equipment. This section considers the potential adverse and beneficial impacts of
8 CBP’s alternative actions on HH&S.

9 **7.13.2 AFFECTED ENVIRONMENT**

10 **Construction**

11 HH&S concerns during construction and modernizing of facilities involve exposing workers to
12 conditions that pose a health or safety risk. Construction site safety is largely a matter of
13 adherence to regulatory requirements. These regulatory requirements are imposed for the benefit
14 of employees and they implement operational practices that reduce risks of illness, injury, death,
15 and property damage. The U.S. Occupational Safety and Health Administration (OSHA) issues
16 standards that specify the amount and type of safety training and education required for industrial
17 workers, the use of protective equipment and clothing, engineering controls, and maximum
18 exposure limits with respect to workplace stressors (29 CFR 1910). CBP applies and adheres to
19 these standards in policy and practice.

20 **Routine Operations**

21 *Trade and Travel Processing at POEs*

22 The affected environment of agricultural inspections is the inspection location. Agricultural
23 inspections are typically conducted on-site at ports of entry (POEs), but officers sometimes
24 escort the shipment to the receiver site for inspection (USDHS, 2011). Inspections can also take
25 place on the vessel or train transporting cargo into the United States. After inspection, many
26 types of shipments are released to the appropriate agency.

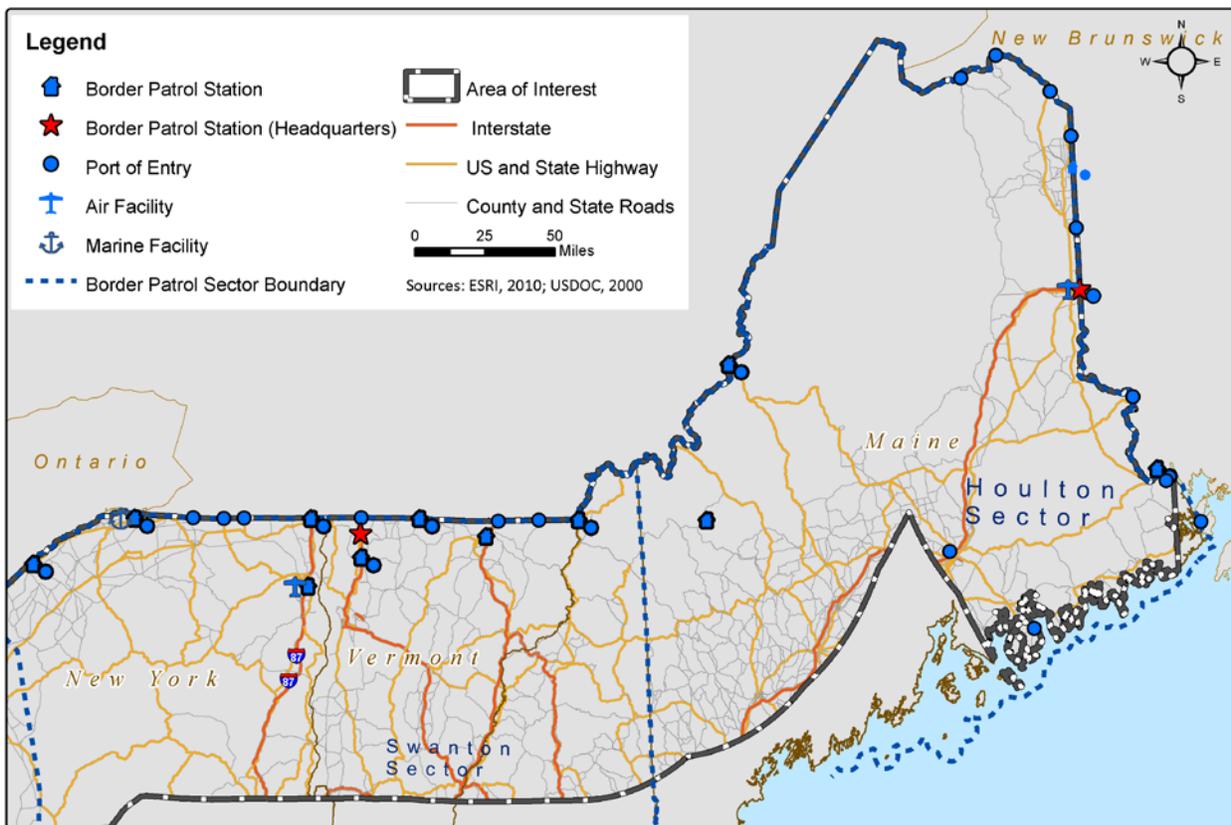
27 During these interceptions, HH&S effects are possible. Release of nonindigenous diseases into
28 the United States would be harmful to HH&S. To prevent nonindigenous diseases from entering
29 the United States, CBP places bans on certain animals, animal products, and other possible
30 carriers of disease. In 2003, in Canada a positive case of bovine spongiform encephalopathy
31 (“mad cow” disease) touched off an immediate ban on ruminant meat from Canada into the
32 United States. That same year, there was an outbreak of monkeypox in the United States. This
33 outbreak was linked to exotic animals being imported into the United States as pets. A ban was
34 immediately imposed on certain live rodents from Africa, and agricultural specialists still enforce
35 this ban (USDHS, 2004a). Preventing nonindigenous diseases from entering the United States
36 has a beneficial effect on HH&S because it limits the outbreak of disease

1 **Ground Surveillance and Situational Response Activities**

2 ***Motorized and Nonmotorized Patrols***

3 Motorized patrols take place on American national, state, county, and local municipalities' paved
4 roads. Figure 7.13-1 shows American national, state, and county roads that USBP agents can use
5 for motorized patrolling in the New England Region. In rural areas along the border, USBP
6 agents also use dirt roads for motorized and nonmotorized patrols. Dirt roads along the border
7 region were built to be 24-foot wide, but due to vegetation growth the roads are now typically
8 less than 10-foot wide (USDHS, 2011). USBP agents also use other Federal agencies' roads,
9 including roads in national forests and national parks. When possible, the USBP agents remain
10 on existing roads to apprehend cross-border violators but when required they go off road. Off-
11 road vehicles and nonmotorized patrols take place off-road and in remote areas along the border.

12 **Figure 7.13-1. U.S., State, and County Roads in the New England Region**



13

14 ***Aircraft Operations***

15 Manned aerial surveillance patrols are operated between 300 feet above ground level (AGL) and
16 flight level (FL) 250. Aircraft patrols are operated at different heights based on different
17 operational and environmental conditions including weather conditions and high traffic
18 environments.

19 Manned aerial surveillance patrols are conducted along the New England border. The Swanton
20 and Houlton Air and Marine branches possess different equipment and resources for aerial
21 patrols. In order to fly for CBP, Office of Air and Marine (OAM) agents must have a Federal

1 Aviation Administration (FAA)-issued license (USDHS, 2010a). Accidents during manned
2 aerial surveillance patrols could potentially injure OAM officers or members of the general
3 public.

4 Unmanned Aircraft Systems (UAS) are remotely piloted aircrafts, and patrols can occur along
5 the New England Region. UASs are operated at 18,000 feet AGL or higher.

6 The FAA sets the constraints for where a UAS may operate and how these operations may be
7 conducted safely in the National Airspace System (NAS). Their main focus when evaluating
8 UAS operations in the NAS is to make sure a UAS will not endanger other users of the NAS or
9 compromise the safety of persons or property on the ground.

10 The FAA recognizes the great potential of UASs in homeland security and strives to
11 accommodate the DHS's needs for UAS operations, without jeopardizing safety. Because
12 airspace is a finite resource, the FAA sets aside Restricted or Prohibited Areas to help mitigate
13 risks. These Restricted or Prohibited Areas are for an operator's exclusive use when needed.

14 For CBP's UASs to gain access to the civil airspace, CBP must go through the FAA's Certificate
15 of Waiver or Authorization (COA) process. This is the avenue by which public users
16 (government agencies and Federal, state, and local law enforcement) that wish to fly a UAS can
17 gain access to the NAS, provided that the risks of flying the UAS in the civil airspace can be
18 appropriately mitigated.

19 To minimize the risk of operating a UAS, the FAA frequently requires risk mitigations before
20 granting a COA. These mitigations include special provisions unique to the requested type of
21 operation. For example, the applicant may be restricted to operating only in a defined airspace or
22 operating only during certain times of the day. The UAS may be required to have a transponder
23 if it is to be flown in a certain type of airspace. Other safety enhancements may be required,
24 depending on the nature of the proposed operation. To ensure safety, the COA application is
25 reviewed for feasibility; airspace experts review and ensure that the operation will not severely
26 impact the efficiency of the NAS. As of April, 2011, CBP has been issued 12 COAs.

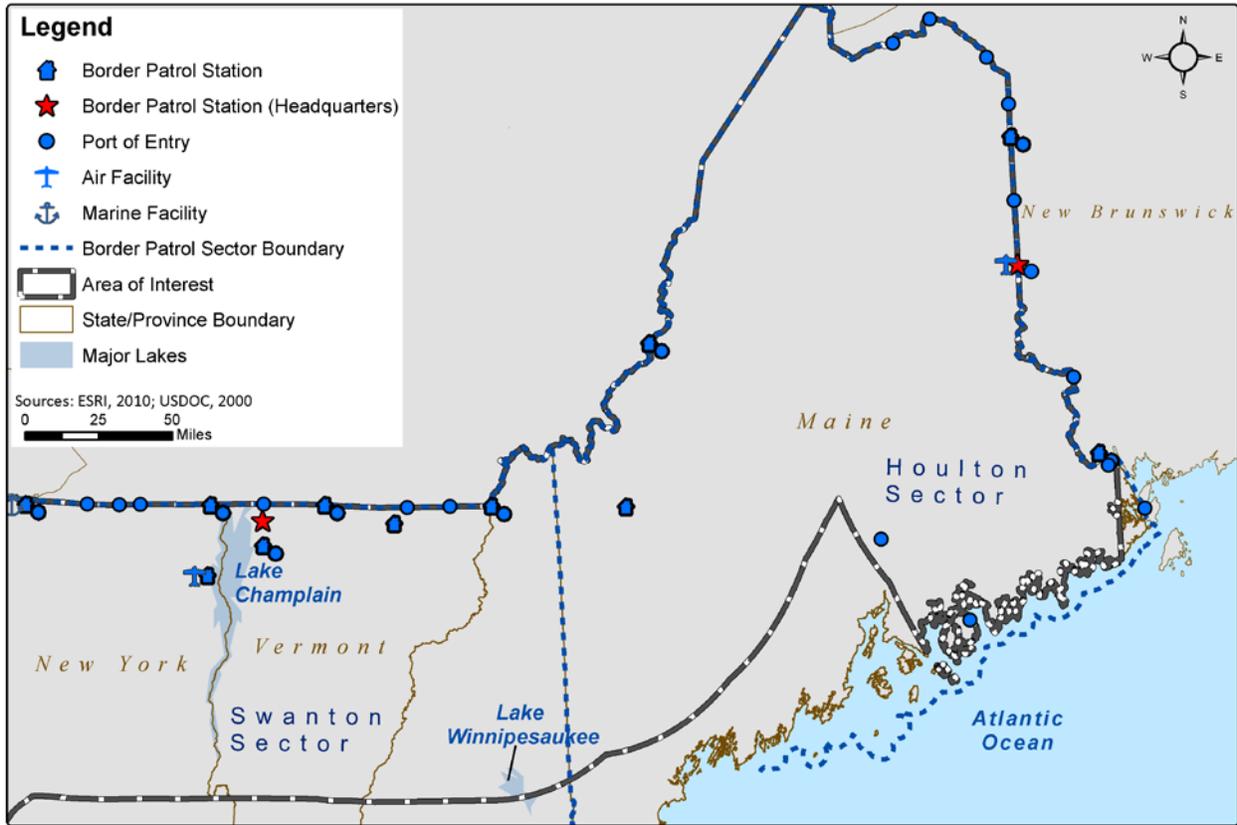
27 Given that there are emergency and disaster situations where the use of UASs has saved lives
28 and otherwise mitigated emergency situations, the FAA has issued three special disaster COAs,
29 one of which was to CBP (Kalinowski & Allen, 2010).

30 ***Vessel Operations***

31 There are approximately 563 square miles of navigable waterways in this region (ESRI, 2010),
32 with patrolling occurring mainly on Lake Champlain. Figure 7.13-2 shows the navigable water
33 in this region. To assist in river or lake patrols, OAM provides the USBP agents in this region
34 with a range of watercrafts (USDHS, 2011). Accidents during patrols could take place between
35 CBP, cross-border violators, and the general public.

1

Figure 7.13-2. Navigable Water in the New England Region



2

3 **Radiation**

4 CBP uses X-rays and gamma rays to inspect merchandise
 5 and conveyances, eliminating the need for an intrusive
 6 manual search. These detection systems provide images
 7 of material enclosed in cars, trucks, railcars, sea
 8 containers, personal luggage, packages, parcels, and mail
 9 (USDHS, 2009a). Increasing the efficiency and the
 10 number of searches can have a beneficial effect on
 11 HH&S. Beneficial effects could result if the number of
 12 interdictions increases and the occurrence of intentional
 13 destructive acts (IDAs) decreases as a result of using X-
 14 ray and gamma rays. The affected environment includes
 15 the location of equipment that produces X-rays and
 16 gamma rays, as well as the area immediately surrounding
 17 the equipment.

18 X-rays and gamma rays have the potential to expose
 19 people to ionizing radiation. The Nuclear Regulatory
 20 Commission (NRC) sets regulations and establishes
 21 standards for protection against radiation arising from
 22 activities conducted under licenses it issues. CBP has
 23 adopted the NRC standard because OSHA addresses only

Exposure dose is the dose received by a member of the public from exposure to radiation and to radioactive material released by a licensee, or to another source of radiation either within a licensee's controlled area or in unrestricted areas (USDHS, 2004b).

Occupational dose is the dose received by an individual in a restricted area or in the course of employment in which the individual's assigned duties involve exposure to radiation and to radioactive material from licensed and unlicensed sources of radiation, whether in the possession of the licensee or other person. The individuals subject to the occupational dose classification must closely monitor their degree of radiation exposure using dosimeters (USDHS, 2004b).

1 occupational dose exposure limits. These requirements are set forth in 10 CFR Part 20 (USDHS,
2 2004b).

3 In 10 CFR Part 20, the NRC identifies two classifications of radiation dose: occupational dose
4 and exposure dose (USDHS, 2004b). Neither of these doses includes background radiation,
5 radiation patients receive from medical practices, radiation received from participation in
6 medical research programs, or radiation received as a member of the general public.

7 As set by the NRC in 10 CFR Part 20, the maximum permissible level of radiation dose to
8 individual members of the general public in unrestricted areas (i.e., exposure dose) is 0.1 rem per
9 year above the typical 0.360 rem per year dose provided by natural and man-made background
10 radiation.

11 As part of its “as low as is reasonably achievable” (ALARA) program, CBP has determined that
12 the radiation dose received by its personnel shall not exceed the public dose (USDHS, 2004b).

13 In 10 CFR 20.1003, NRC defines the philosophy of ALARA in relation to exposure:

14 ALARA (acronym for “as low as is reasonably achievable”) means making every reasonable
15 effort to maintain exposures to radiation as far below the dose limits in this part as is
16 practical consistent with the purpose for which the licensed activity is undertaken, taking into
17 account the state of technology, the economics of improvements in relation to state of
18 technology, the economics of improvements in relation to benefits to the public health and
19 safety, and other societal and socioeconomic considerations, and in relation to utilization of
20 nuclear energy and licensed materials in the public interest.

21 Exposure to radiation can be harmful to HH&S. Because of the difficulties in determining if the
22 health effects that are demonstrated at high radiation doses are also present at low doses, current
23 radiation protection standards and practices are based on the premise that any radiation dose may
24 result in detrimental health effects, such as cancer and hereditary genetic damage.

25 When discussing potential impacts caused by radiation exposure, it is important to relate how
26 much exposure is anticipated. In an August 2004 revised position statement on radiation risk,
27 the Health Physics Society recommended against the quantitative estimation of health risks
28 below an individual dose of 0.5 rem in one year or a lifetime dose of 10 rem above that received
29 from natural sources. Doses from natural background radiation in the United States average
30 about 0.360 rem per year (HPS, 2004).

31 ***Radio Frequency***

32 The radio frequency (RF) environment refers to the
33 presence of electromagnetic (EM) radiation emitted by
34 radio waves and microwaves on the human and
35 biological environment. RF waves have a frequency or
36 rate of oscillation within the range of approximately 3
37 Hertz (Hz) to 300 gigahertz (GHz). This energy can
38 interact with matter (USDHS, 2008a).

Uncontrolled exposure occurs when the general public is exposed or when persons employed are not made fully aware of the potential for exposure or cannot exercise control over their exposure (USDHS, 2008a).

Controlled exposure occurs when a person is exposed to RF fields as part of their employment and the person has been made fully aware of the potential exposure and can exercise control over their exposure. (USDHS, 2008a).

1 OSHA regulates RF and EM emissions for employees under 29 CFR 1910. The Federal
2 Communications Commission (FCC) is responsible for licensing frequencies and ensuring that
3 the approved use does not interfere with television or radio broadcasts, or substantially affect the
4 natural or human environment (USDHS, 2008a). The FCC has adopted a modified version of
5 the American National Standards Institute (ANSI) guidelines and Institute of Electrical and
6 Electronics Engineers (IEEE) standards to evaluate exposure due to RF transmitters licensed and
7 authorized by the FCC. The FCC's guidelines also reflect the National Council of Radiation
8 Protection and Measurements exposure guidelines.

9 The National Council of Radiation Protection and Measurements and ANSI/IEEE exposure
10 criteria identify the same threshold level at which harmful biological effects may occur. The
11 whole-human-body absorption of RF energy varies with the frequency of the RF signal. The
12 most restrictive limits on exposure are in the frequency range from 30 to 300 megahertz where
13 the human body absorbs RF energy most (USDHS, 2008a).

14 There are two tiers or exposure limits: occupational or "controlled," and general or
15 "uncontrolled." In order for a transmitting facility or operation to be out of compliance with the
16 FCC's RF guidelines in an area where levels exceed maximum permissible exposure (MPE)
17 limits, it must first be accessible to the public. The MPE limits indicate levels above which
18 people may not be safely exposed regardless of the location where those levels occur (USDHS,
19 2008a).

20 Adverse biological effects associated with RF energy are typically related to the heating of tissue
21 by RF energy. This is typically referred to as a thermal effect, where the EM radiation emitted
22 by an RF antenna passes through and rapidly heats biological tissue; similar to the way a
23 microwave oven cooks food. According to the Health Physics Society, numerous studies have
24 shown that environmental levels of RF energy routinely encountered by the general public are
25 typically far below levels necessary to produce significant heating and increased body
26 temperature; RF energy that would produce harmful heating is generally associated only with
27 workplace environments near high-powered RF sources, such as those used for molding plastics
28 or processing food products. In such cases, exposure of human beings to RF energy could
29 exceed MPE and restrictive measures or actions would thus be required to ensure the public's
30 safety (USDHS, 2008a).

31 There is also some concern that signals from some RF devices could interfere with pacemakers
32 or other implanted medical devices; however, electromagnetic shielding has been incorporated
33 into the design of modern pacemakers to prevent RF signals from interfering with the electronic
34 circuitry in the pacemaker (USDHS, 2008a).

35 Because RF devices emit RF energy and EM radiation, adverse impacts could occur. The
36 severity of these impacts depends on the equipment used and the elevation of the tower (USDHS,
37 2008a).

38 Beneficial impacts from RF devices could also occur. The use of RF could increase the
39 frequency of interdictions along the Northern Border, improving the HH&S of the American
40 population.

1 ***Firing Ranges***

2 HH&S can be affected by noise levels and exposure to lead from firing ranges on both indoor
3 and outdoor ranges in this region. Humans become exposed to lead associated with shooting
4 ranges through lead-contaminated soil. Another potential pathway is through inhalation of lead
5 dust by shooters during firing when airflow on the firing line is blocked. Range workers may
6 also be exposed to lead dust while performing routine maintenance operations, such as raking or
7 cleaning out bullet traps. Each of these pathways is site specific and may or may not occur at
8 individual ranges (USDA, 2010).

9 **Figure 7.13-3. CBP Officers Train at Firing Range**



11 Source: (USDHS, No Date).

12 OSHA sets regulations for protecting workers who handle or are exposed to lead, including
13 airborne lead at indoor firing ranges (NSSF, 2001; 29 CFR 1910.1025). The OSHA standard for
14 airborne lead exposure is 30 micrograms per cubic meter of air with an 8-hour time-weighted
15 average (29 CFR 1910.1025).

16 Spent ammunition on ranges is not regulated as solid/hazardous waste unless it is discarded and
17 left to accumulate for a long period of time. It is not regulated if it is recovered or reclaimed on a
18 regular basis. If the range poses an imminent or substantial danger to human health or the
19 environment, it can be addressed through the Resource Conservation and Recovery Act (RCRA).

20 U.S. Environmental Protection Agency (EPA) regions also set guidelines and establish best
21 management practices (BMPs) for building new ranges and for remediating outdoor ranges.
22 These guidelines are in place to help minimize lead contamination in soil and water. HH&S
23 would be adversely affected if CBP agents were exposed to lead on firing ranges or if the
24 public's water supply was contaminated with lead (USEPA, 2003). The frequency and severity
25 of response to lead exposure in humans depend on the amount of exposure. Symptoms include
26 neurological, gastrointestinal, reproductive, and renal effects (NYDH, 2009).

27 In addition to lead exposure, the noise generated on firing ranges may have an adverse effect on
28 the health of CBP agents. Exposure to harmful levels of noise over a long time period can
29 damage sensitive structures in the ear, resulting in noise-induced hearing loss (NIDCD, 2008).
30 To protect employees from noises at harmful levels, OSHA sets noise standards and guidelines

1 for the work environment. The OSHA noise exposure limit is set at a maximum permissible
2 exposure limit of 90 decibels, A-weighted (dBA), averaged over an 8-hour time period (29 CFR
3 1910.95).

1 **7.14 HAZARDOUS MATERIALS**

2 **7.14.1 INTRODUCTION**

3 *Hazardous or regulated materials* (HRM) are materials that are capable of posing an
4 unreasonable risk to health, safety, and prosperity. This definition is in accordance to that given
5 in Department of Transportation (DOT) regulations. HRM can be classified into roughly three
6 categories:

- 7 • Hazardous or regulated substances;
- 8 • Hazardous or regulated waste); and,
- 9 • Special hazards.

10 **7.14.1.1 Hazardous Substances**

11 Any substances that are considered severely harmful to human health or the environment may be
12 classified as “hazardous.” Hazardous substances take many forms. Many are commonly used
13 substances that are harmless in their normal uses but are quite dangerous when released. They
14 are defined in terms of those substances either specifically designated as hazardous under the
15 Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA),
16 commonly known as the Superfund Law, or those substances identified under other laws
17 (USEPA, 2011a). A great deal is known about hazardous substances and their effects. This
18 information helps responders act quickly and safely to reduce the risks from emergency
19 situations (USEPA, 2011b).

20 **7.14.1.2 Hazardous Waste**

21 *A hazardous waste* is defined by the Resource Conservation and Recovery Act (RCRA) as a
22 solid waste, or combination of solid wastes, that, because of its quantity; concentration; or
23 physical, chemical, or infectious characteristics may:

- 24 • Cause or significantly contribute to an increase in mortality or an increase in serious
25 irreversible, or incapacitating reversible, illness; or
- 26 • Pose a substantial present or potential hazard to human health or the environment when
27 improperly treated, stored, transported, or disposed of, or otherwise managed.

28 Hazardous wastes fall into two categories: characteristic wastes and listed wastes. *Characteristic*
29 *hazardous wastes* are materials that are known or tested to exhibit a hazardous trait such as
30 ignitability (i.e., flammability), reactivity, corrosiveness, and toxicity. *Listed hazardous wastes*
31 are materials specifically listed by the Environmental Protection Agency (EPA) or a state
32 regulation as a hazardous waste. Hazardous wastes listed by the EPA fall into two categories:

- 33 • Process wastes from general activities (F-listed) and from specific industrial processes
34 (K-listed); and,
- 35 • Unused or off-specification chemicals, container residues, and spill cleanup residues of
36 acute hazardous-waste chemicals (P-listed) and other chemicals (U-listed).

1 These wastes may be found in different physical states as gases, liquids, or solids. Furthermore,
2 a waste is deemed hazardous if it cannot be disposed of by common means like other byproducts
3 of our everyday lives. Depending on the physical state of the waste, treatment and solidification
4 processes might be available. In other cases, however, there is not much that can be done to
5 prevent harm (Leonard, 2009).

6 Certain types of hazardous wastes are subject to special management provisions intended to ease
7 the management burden and facilitate the recycling of such materials. These are called universal
8 wastes; their associated regulatory requirements are specified in 40 CFR 273. Four types of
9 waste are currently covered under the universal waste regulations: hazardous-waste batteries;
10 hazardous-waste pesticides that are either recalled or collected in waste pesticide collection
11 programs; hazardous-waste thermostats; and hazardous-waste lamps.

12 The RCRA regulates the management and disposal of hazardous waste. One common method of
13 treatment is hazardous combustion, or incineration, which is used to destroy hazardous organic
14 components and reduce the volume of waste (USEPA, 2009a).

15 **7.14.1.3 Special Hazards**

16 Special hazards are those substances that might pose a risk to human health; they are addressed
17 separately from other hazardous materials. Special hazards include asbestos-containing material,
18 polychlorinated biphenyls (PCBs), and lead-based paint (LBP). The EPA has the authority to
19 regulate these special-hazard substances under the Toxic Substances Control Act 15 U.S.C. 53.
20 The EPA has established regulations regarding asbestos abatement and worker safety under 40
21 CFR 763, with additional regulation concerning emissions (40 CFR 61). Depending on the
22 quantity or concentration, the disposal of LBP waste is potentially regulated by the RCRA at 40
23 CFR 260. The disposal of PCBs is addressed in 40 CFR Parts 750 and 761.

24 **7.14.2 AFFECTED ENVIRONMENT**

25 **7.14.2.1 Hazardous Substances, Hazardous Wastes, Special Hazards, and Otherwise** 26 **Regulated Materials**

27 Due to the duplicative discussion of hazardous substances, hazardous wastes, special hazards and
28 otherwise regulated materials, complete descriptions of the range of hazards are found in section
29 3.14.

1 **7.15 UTILITIES AND INFRASTRUCTURE**

2 **7.15.1 INTRODUCTION**

3 Infrastructure consists of the systems and physical structures that enable a population in a
4 specified area to function. Infrastructure is wholly man-made; generally, the more urban and
5 developed an area, the more infrastructure it has (USDHS, 2008a). This section describes ranges
6 of use for each utility resource based on recent CBP site-specific analyses of protection,
7 relocation, construction, and operation of U.S. Border Patrol stations, and construction,
8 modernization, and operation of ports of entry (POEs). This section then describes the utility
9 resources of most CBP facilities: Border Patrol (BP) stations, POEs, forward operating bases
10 (FOBs), traffic checkpoints, and communication towers.

11 **7.15.2 AFFECTED ENVIRONMENT**

12 **7.15.2.1 Water Supply**

13 Municipal water systems or rural lines, which supply CBP facilities such as the Rangeley, Maine
14 Border Patrol station, have the capacity to pump up to 74,000 gallons of water per day from
15 500,000-gallon-capacity reservoirs, lakes, or systems of groundwater wells (USDHS, 2009k). A
16 substantial reserve capacity remains in these lakes or reservoirs.

17 For sites with wells present, there are several ways in which water may be provided. Some sites
18 utilize on-site wells by tapping a nearby water main. In more remote locations (where tapping a
19 water main is not feasible), potable water is provided by an on-site well. Generally, wells are
20 within 90 feet of the main building; water is pumped through an in-line water filter system and
21 stored in multiple storage tanks. When necessary (and possible), water is filtered, softened,
22 distilled, or treated as required for potable uses. If there is no usable on-site well for potable
23 water, the water may come from a leased, off-site well located several hundred yards away. In a
24 few locations, well water is run through a chlorination or reverse osmosis system for non-
25 drinking usage.

26 When on-site wells are rendered obsolete, as was the case at the Pittsburg, Morses Line,
27 Pinnacle, and Easton POEs, CBP supplies drinking water in commercial water bottles. At large
28 facilities the delivered potable water is stored in 5-gallon jugs and is sometimes used for
29 cooking. For those few facilities where bottled water is delivered, on average between 50 and 60
30 gallons are used per month.

31 **7.15.2.2 Electrical and Communications Utilities**

32 Electrical power is provided to most CBP facilities by a commercial grid system. These local or
33 regional utility cooperatives and distribution companies serve from 33,000 to 596,000 customers
34 over a 3,000- to 11,000-square-mile area throughout the New England Region (USDHS, 2009l;
35 USDHS, 2009k; EMEC, 2011). The Maine Public Service Company, the service provider for
36 the Fort Fairfield POE, has a capacity of 154.3 MW (USDHS, 2009l). Central Maine Power, the
37 service provider for the Rangeley POE, had a system peak demand of 1,619 MW in 2010 (CMP,
38 2011). Primary electrical service is provided by overhead transmission lines to the facilities, and
39 secondary electrical service is provided from a pole-mounted transformer. Many of these

1 facilities have an on-site emergency electric generator with a 275-, 500-, 1,000-, 2,000-, or
2 6,000-gallon diesel fuel tank (USDHS, 2003h; USDHS, 2003i; USDHS, 2003j).

3 At seasonal facilities in rural areas, electricity is provided by one or two smaller generators
4 connected to the automatic transfer switches and building power system.

5 Monopole communication towers do not utilize more than 3,650 kilowatt (kW)-hours per month
6 from commercial grid power (USDHS, 2008b). Primary power is provided to monopole towers
7 by the commercial power grid; in addition, communication relay towers (CRTs) typically utilize
8 a 17-kW generator. Remote video surveillance system (RVSS) CRTs have a 30-kW generator
9 (USDHS, 2008b). If a commercial power grid is not immediately available when towers are
10 deployed, primary power is supplied by a 30-kW generator and a 2,000-gallon propane-fueled
11 generator until the commercial power infrastructure is in place. Back-up power for each tower
12 site is provided by a battery back-up system. All power lines are installed overhead from the
13 main trunk power line to the tower site shelter and then on elevated cable trays to the tower; the
14 primary power source is the commercial grid.

15 At facilities lacking communication towers, antennas are mounted on posts attached to the main
16 building.

17 Most POEs are provided telephone service by a nearby telephone substation. Existing telephone
18 lines run underground or overhead (or some combination of the two) and, when possible, follow
19 a highway right-of-way. Most telephone lines consist of one or two T-1 lines and one to six dial
20 tone lines. Where T-1 or fiber-optic service is not available, Internet service is accessed through
21 telephone modems.

22 **7.15.2.3 Fuel Supply**

23 Propane, or natural gas, supplies fuel for heating, ventilation, and air conditioning (HVAC). On-
24 site propane or diesel that can also power emergency generators are stored in up to three 125-,
25 150-, 250-, or 500-gallon on-site tanks (USDHS, 2009m; USDHS, 2010a; USDHS, 2010d;
26 USDHS, 2009n). Some, as is the case at the Morses Line POE in Vermont, have additional 330-
27 gallon and 75-gallon fuel oil tanks associated with the boiler (USDHS, 2010d). Heat is
28 generated by solar panels at the Pinnacle Road POE in Vermont, with fuel oil as a back-
29 up. Some facilities are serviced by underground natural gas pipelines

30 Each tower utilizes a 500-gallon propane tank to fuel the back-up generator in case of power
31 outages (USDHS, 2008b). Each 500-gallon fuel tank would be refueled every two months
32 (USDHS, 2008b), assuming two hours of run time monthly for a generator maintenance check
33 and other operations as needed. When commercial grid power is not immediately available upon
34 tower deployment, primary power would be supplied temporarily by a 30-kW generator using a
35 larger, 2,000-gallon propane tank. These larger propane tanks would be refueled approximately
36 every seven days (USDHS, 2008b).

37 **7.15.2.4 Wastewater Management**

38 Urban CBP facilities such as the Rangeley and Fort Fairfield Border Patrol stations are
39 connected via municipal piping systems to wastewater treatment plants. The Fort Fairfield
40 Wastewater Treatment Plant, for example, treats an average of 400,000 gallons per day and

1 serves approximately 800 accounts. It is a secondary system licensed for 600,000 gallons per
2 day of average flow. From June to September, the plant has a monthly average biochemical
3 oxygen demand and total suspended solids of 750 pounds per day; from September to June this
4 average is 1,383 pounds per day (FF, 2010).

5 In rural locations like the Hamlin and Easton POEs in Maine, sanitary waste is disposed to on-
6 site septic tanks. Types of septic tanks vary; some have a grinder pump, a lift station, or two
7 venting pipes, but all are connected to the appropriate drainage mound and field or leach field.
8 Solid waste is removed from sites by a cleaning contractor or a private disposal company. On
9 average, septic tanks are pumped once every two years and are treated twice a year. However,
10 those approaching capacity may need to be pumped as often as once every three months.

11 The state Department of Transportation or appropriate county-level department generally
12 removes snow from state highways, and on-site snow removal service is contracted out to a
13 janitor or maintenance company (USDHS, 2009d). At some POEs, facility staff use a snow
14 blower or tractor for snow removal (USDHS, 2009n).

15

1 **7.16 ROADWAYS AND TRAFFIC**

2 **7.16.1 INTRODUCTION**

3 The United States relies heavily on a vast transportation network to expedite the flow of goods
4 and people to and from Canada. Providing efficient border crossing, while providing the highest
5 level of security and safety for all motorists, is of utmost importance. Over the past decade,
6 many LPOEs have been upgraded for highway safety, as well as technologically for ease of
7 access. States and municipalities maintain the roadways leading to the borders to allow for
8 tourism and trade in their areas. The following provides an overview of traffic and transportation
9 regulations and describes the general traffic conditions for urban, suburban, rural, and remote
10 areas.

11 **7.16.2 AFFECTED ENVIRONMENT**

12 **7.16.2.1 Existing Roadway Network and Roadway Effectiveness**

13 The majority of the roadways within 100 miles of the Northern Border within this region are
14 primarily secondary and tertiary paved roads, although there are state highways throughout.
15 Many of the areas in the New England Region are rural and remote, and some include travel
16 destinations ranging from national parks and wilderness areas to major tourist attractions like the
17 Maine coast.

18 The number of motor vehicles in the United States has been steadily increasing, with more than
19 200 million vehicles registered in 1996. The increase during the 10-year period from 1986 to
20 1996 was greater than 17 percent. The number of passenger cars nationwide decreased during
21 that period by 0.3 million, and the number of trucks grew by almost 30 million, most in the light-
22 truck category. The number of motorcycles decreased from 5.2 million to 3.9 million.

23 Annual travel on American roadways reached an estimated 2.5 trillion vehicle-miles, or about
24 three times the level reported in 1960. Travel grew about 47 percent during the 1960s, another 38
25 percent in the 1970s, and another 41 percent in the 1980s. Travel in urban areas accounted for
26 1.5 trillion vehicle-miles in 1996, or 61 percent of the total, compared to 44 percent in 1960. On
27 the rural interstate system, automobiles, light trucks, and buses account for 77 percent of average
28 daily traffic volumes, with heavy trucks representing the remainder. Percent distribution of
29 traffic for commercial and noncommercial vehicles in both rural and urban areas is shown in
30 Table 7.16-1.

1 **Table 7.16-1. Percent Distribution of Traffic by Vehicle Class, Total United States**

Type of Roadway	Vehicles (%)	
	Noncommercial	Commercial
Rural		
Interstate	81.6	18.4
Other principal arterials	87.2	12.8
Minor arterial, collector and local	88.5	11.5
Rural average	86.6	13.4
Urban		
Interstate	88.2	11.8
Other freeways and expressways	90.5	9.5
Other principal arterials	89.5	10.5
Minor arterials	90.4	9.6
Collectors	90.3	9.7
Local	91.0	9.0
Urban average	89.8	10.2

2 Source: USDOT, 1996.

3 **7.16.2.1 Level of Service**

4 Level of service (LOS) is a qualitative measure of the operating conditions of an intersection or
 5 other transportation facility. There are six levels of service (A through F) defined: LOS A
 6 represents the best operating conditions with no congestion, and LOS F is the worst with heavy
 7 congestion. Roadways and intersections with LOS E or F are those with traffic conditions at or
 8 above capacity. Traffic patterns are congested, unstable, and normally unacceptable to
 9 individuals attempting to access and use roadways and intersections with LOS E or F (TRB,
 10 2000). LOS has been used to facilitate a general discussion of traffic conditions in urban,
 11 suburban, rural, and remote areas. This discussion of typical patterns for different types of
 12 roadway networks is not meant to substitute for local studies and analyses that may be required.

13 **7.16.2.2 Variability**

14 Traffic varies by month of the year, day of the week, and hour of the day. Often the capacity of
 15 the roadway system can be exceeded by the volume of traffic using it. This can cause breakdown
 16 flow (i.e., LOS E or F) and initiate effects that extend far beyond the time during which the
 17 demand exceeded capacity, and may take several hours to dissipate. Seasonal peaks in traffic
 18 demand are also of importance, particularly for recreational facilities.

19 Seasonal fluctuations in traffic demand reflect the social and economic activity of the area being
 20 served by the highway. These seasonal fluctuations typically exhibit several relevant
 21 characteristics:

- 22 • Monthly variations are more severe on rural routes than on urban routes,

- 1 • Monthly variations are more severe on rural routes serving primarily recreational traffic
2 than on rural routes serving primarily business traffic, and
- 3 • Daily traffic patterns vary by month of year most severely for recreational routes.

4 Traffic variations by day of the week are related to roadway type. Normally, weekend volumes
5 are lower than weekday volumes for highways serving predominantly business travel, such as
6 urban freeways. In comparison, peak traffic occurs on weekends on main rural and recreational
7 highways. Furthermore, the magnitude of daily variation is highest for recreational access routes
8 and lowest for urban commuter routes.

9 Typical hourly variation in traffic is related to highway type and day of the week. The typical
10 morning and evening peak hours are evident for urban commuter routes on weekdays. The
11 evening peak is generally somewhat more intense than the morning peak. On weekends, urban
12 routes show a peak travel period that is less intense and more spread out, occurring in early to
13 mid afternoon. Recreational routes also have single daily peaks. Saturday peaks on such routes
14 tend to occur in the late morning or early afternoon (as travelers go to their recreational
15 destination) and in late afternoon or early evening on Sundays (as they return home).

16 Traffic analysis focuses on the peak hour of traffic volume because it represents the most critical
17 period for operations and has the highest capacity requirements. If the highest hourly volumes
18 for a given location were listed in descending order, a large variation in the data would be
19 observed, depending on the type of roadway.

20 **7.16.2.3 Urban and Suburban Transportation Networks**

21 Traffic in suburban areas is similar to that in urban areas; however, traffic delays are less of an
22 issue unless traffic is being routed through residential areas. As with urban areas, there may be
23 heavy traffic during rush hour, typically 7:00–9:00 a.m. and 4:00–6:00 p.m. Traffic congestion
24 in suburban areas is normally confined to primary and secondary arterials, not residential areas.
25 Public transportation is often provided, and traffic reports are available for updated roadway
26 conditions.

27 The ability of urban streets to function well is generally limited by the capacity of signalized
28 intersections, with traffic normally uninterrupted on roadway segments between intersections.
29 Signal timing plays a major role in the capacity of urban streets, limiting the portion of time
30 available for movement between intersections. Traffic conditions may vary greatly, and such
31 factors as curb parking, transit buses, lane widths, upstream intersections, and other factors may
32 substantially affect roadway conditions. In urban areas, LOS at critical intersections would
33 typically be E or F during peak periods, and characterized by very unstable or forced traffic flow.

34 Urban streets show less variation than other areas. Most users are daily commuters or frequent
35 users, and special event traffic is less common. Furthermore, many urban routes are filled to
36 capacity during each peak hour, and variation is therefore severely constrained.

37 Traffic in suburban areas is similar to that in urban areas; however, traffic delays are less of an
38 issue unless traffic is being routed through residential areas. As with urban areas, there may be
39 heavy traffic during rush hour, typically 7:00–9:00 a.m. and 4:00–6:00 p.m. Traffic congestion
40 in suburban areas is normally confined to primary and secondary arterials, not residential areas.

1 Public transportation is often provided, and traffic reports are available for updated roadway
2 conditions.

3 **7.16.2.4 Rural and Remote Transportation Networks**

4 In rural and remote areas, traffic is mainly affected by roadway conditions. Heavy traffic
5 volumes are rare and normally only occur due to road closure and construction activities. Rural
6 highways in the United States and Canada rarely operate at volumes approaching capacity. In
7 addition, rural and recreational routes often show a wide variation in peak-hour volumes.
8 Extremely high volumes occur on a few weekends or in other peak periods, and traffic during the
9 rest of the year is substantially less, even during the peak hour. For example, highways serving
10 resorts and recreational areas may be virtually unused during much of the year, only to be subject
11 to oversaturated conditions during peak summer periods.

12 Seasonal weather conditions are the primary cause of inefficient access on rural and remote
13 roadways. Snow, flooding, and mudflows can make roads impassable; these events usually occur
14 between October (when snow accumulations begin) and April (when melting snow and rains can
15 cause flooding and mudslides). Local municipalities are prepared for maintenance of rural
16 roadways, and residents often have alternate means of transportation, such as snowmobiles,
17 ATVs, and horses. Remote areas, by definition, are sparsely populated, but the few residences
18 within these areas normally have alternate transportation sources in case of emergencies.
19 Television, radio, and NPS traffic reports are the primary sources of updates for rural and remote
20 roadway conditions (USDOJ, 2010).

21 **7.16.2.5 Federal and State Transportation Regulations**

22 LPOEs across the regions are accessed by a number of highways that are maintained by each
23 state's Department of Transportation (DOT) or municipal highway authority. In remote areas
24 where trails and gravel roadways are used, it is the maintaining agencies responsibility to inform
25 the public of road and trail closures. In the United States, each state has its own regulations and
26 governing agency, although most regulations are similar for the purpose of uniformity. In most
27 states, the roadway design manual is based upon recommendations in the American Association
28 of State Highway and Transportation Officials (AASHTO) Policy on Geometric Design of
29 Highways and Streets, commonly referred to as the "Green Book." The Green Book is not a
30 design manual but rather a series of recommended roadway design parameters (USDOT,
31 2010).In addition, many Federal departments have also adopted their own traffic code for
32 enforcement on their respective reservations (e.g., national parks and military bases). A list of
33 the state DOTs and regulatory agencies that plan and administer the roadway design regulations
34 is provided in Appendix S-1.

35 **7.16.2.6 CBP's Activities Affecting Roadways and Traffic**

36 CBP's activities include enforcement of customs, immigration, and agriculture regulations at
37 American borders, and CBP has primary responsibility for preventing unlawful entry into the
38 United States while ensuring the safe and efficient flow of goods and people. For the Northern
39 Border within this region, these activities are focused around the LPOEs, but construction
40 activities, the operation of other facilities, and patrol activities have some effects to
41 transportation resources. A general description of these activities is provided in Chapter 2. This
42 section outlines these activities from a transportation and traffic standpoint.

1 **Land Ports of Entry**

2 Many different roadways including interstates, American highways, state highways, and rural
3 roadways approach the Land Ports of Entry (LPOEs) along the Northern Border within this
4 region. These cross-border access points are often co-located with towns and cities adjacent to
5 the border, and roadways facilitate traffic approaching and departing from the LPOEs.

6 Vehicles entering LPOEs from Canada proceed across the border and then separate into
7 inspection lanes. Often inspections of commercial vehicles and passenger vehicles are conducted
8 in separate areas. These are normally parking areas for vehicles that are selected for secondary
9 inspection, with dedicated truck lanes to help facilitate flow of larger vehicles. At some of the
10 larger facilities, there are committed areas for secondary truck inspections that may involve
11 offloading and detailed examination.

12 As with any other roadway, cross-border traffic varies by month, day of the week, and hour of
13 the day. Seasonal fluctuations in traffic demand reflect the social and economic activity of the
14 area being served by the facility. Canadian traffic reaches a peak in either July or August and
15 ebbs to a low-point in February. Summer peaks are consistently 65 to 75 percent higher than
16 winter lows (BPRI, 2010). Normally, weekend volumes are lower than weekday volumes for
17 LPOEs serving predominantly business travel. Monthly variations are more severe on rural
18 LPOEs than on urban entry points. Vehicle queues are common particularly at urban LPOEs and
19 can last for several minutes to several hours in rare cases. In general, queue length, and wait
20 times determine the overall LOS of a LPOE from a transportation and traffic standpoint. The
21 busiest LPOEs in the New England Region are in Table 7.16-2. A complete list of LPOEs and
22 their level of use by transportation mode is provided in Appendix S-2.

23 **Table 7.16-2. Busiest LPOEs for Passenger Vehicles**
24 **in the New England Region**

Rank	Port Name	Annual Personal Vehicles	Annual Personal Vehicle Passengers
6	ME: Calais	890,247	1,308,679
12	ME: Madawaska	570,182	912,286
13	VT: Derby Line	552,942	1,201,768
16	VT: Highgate Springs	477,134	1,083,739
19	ME: Houlton	295,055	666,488
22	ME: Van Buren	238,319	362,246
25	ME: Fort Kent	186,552	279,543
28	ME: Eastport	150,307	238,057
29	ME: Fort Fairfield	141,495	227,781
30	ME: Jackman	125,365	325,762
34	VT: Richford	95,909	211,868
37	VT: Beecher Falls	67,181	115,575

25 Source: USDOT, 2009.

1 At LPOEs in urban areas, special lanes are used for frequent travelers and commercial vehicles
2 with Nexpress radio frequency units for fewer delays, buses are provided for public
3 transportation, and pedestrian walkways provided for tourists. CBP and other non-government
4 organizations provide real-time traffic information via the internet, twitter and mobile
5 applications (USDHS, 2010). Other technologies used to improve the functionality of LPOE are
6 described in Chapter 2.

7 Vacation travel and occasional same-day shopping trips are important travel purposes along most
8 of the border. Several Canadian and American near-border cities and towns are common
9 consumer destinations. Vacation and same-day recreational travel are less frequent and more
10 seasonal than consumer trips in the paired-cities model. In addition, these types of travel are
11 highly discretionary, easily influenced by exchange rates and economic conditions (BPRI, 2010).

12 All LPOEs facilitate pedestrians and cyclists. However, pedestrian and bicycle circulation is
13 infrequent at most rural LPOEs because of their remote locations and distance from residential
14 areas. Some LPOEs have provisions for bike storage. Many LPOEs have boat and seaplane
15 landing areas.

16 **Transportation Checkpoints**

17 Traffic checkpoints are conducted on roads leading from the border and consist of inspections of
18 interior-bound conveyances, including passenger vehicles (cars, trucks, vans, and buses) and
19 container vehicles and cargo trucks. These checkpoints provide an opportunity to detect and
20 interdict cross-border violators that have thus far avoided apprehension. Vehicle checkpoints are
21 generally traffic lanes temporarily controlled by CBP. Checkpoints may include support
22 buildings to provide temporary office and holding space, as well as lights, signage, and other
23 support equipment.

24 Checkpoints are established at airports for commercial aircraft and at locations along railroad
25 lines for passenger and freight trains.

26 **Nonroad/Offroad Activities**

27 Traffic surveillance operations offroad can include agents stationed at specific observation points
28 or driving predetermined routes (line watch); detection of any disturbances in natural terrain that
29 could indicate the passage of people, animals, or vehicles (sign cutting); and road patrols. All
30 sectors use a variety of vehicles, including four-wheel drive vehicles, sedans, scope trucks,
31 ATVs, motorcycles, snowmobiles, and bike patrols in urban areas or over rough terrain.

32 Border Patrol stations (BPSs) vary in size and typically include any or all of the following
33 components: administrative and support buildings, vehicle maintenance garages, equine and
34 canine facilities, vehicle wash facilities, fuel tanks, small arms practice ranges, undocumented
35 alien processing and temporary holding facilities, confiscated vehicle storage facilities, and agent
36 and visitor parking. CBP's agents use a variety of offroad transportation modes to patrol border
37 areas. These consist of four-wheel drive vehicles, ATVs, snowmobiles, horses, and, in some
38 sensitive habitats, agents operating on foot. As outlined in Chapter 2, CBP's activities that may
39 affect transportation resources include UAS activities, Manned Aerial Surveillance Patrols, and
40 other patrols.

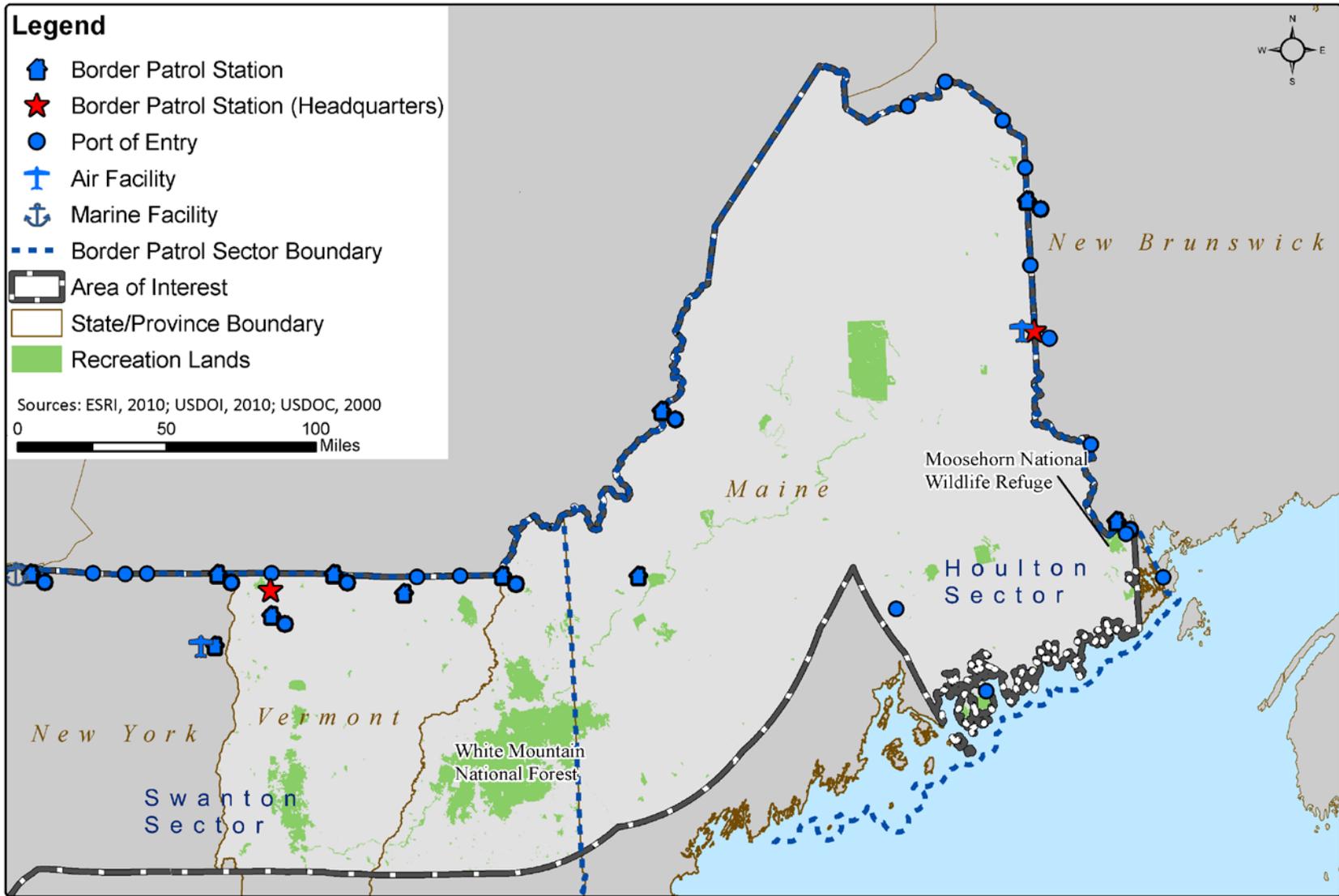
1 **7.17 RECREATION**

2 **7.17.1 INTRODUCTION**

3 A wide variety of recreation areas exist along the Northern Border on both the U.S. and
4 Canadian sides. On the U.S. side, recreational areas include national parks (NP), national
5 recreation areas (NRA), national forests (NF), lakesides, national wildlife refuges (NWR), and
6 designated wilderness areas. On the Canadian side, recreational areas include national park
7 reserves, provincial parks, protected areas, and natural areas. American recreation categories are
8 described briefly below, since the designation bears on the nature of activities permitted. Figure
9 7.17-1 shows a map of federally protected recreation areas in the New England Region.

1
2

Figure 7.17-1. Federally Protected Recreation Areas, Including National Forests, Parks, Recreation Areas, and Wildlife Refuges in the New England Region



3

1 **7.17.2 AFFECTED ENVIRONMENT**

2 National parks, national forests, national wilderness areas, national wildlife refuges, and national
3 recreation areas within the New England Region are profiled below by the impact category they
4 most closely match. In addition to national protected areas, which are the primary focus of this
5 analysis, many state and regional parks and protected areas along the Northern Border have
6 recreation areas that could be impacted by activities along the border.

7 The New England Region has the fewest number of national recreation areas. One national
8 forest sits in this area, the White Mountain National Forest, which is a medium-impact use area.
9 The Moosehorn National Wildlife Refuge, a low-impact use area, is also in the region. Popular
10 recreation activities include biking, hiking, skiing, hunting, fishing, and camping.

11 The following sections provide recreation profiles of U.S. national parks, national recreation
12 areas, national forests, and national wildlife refuges. Appendix I contains profiles of Canadian
13 protected areas.

14 **7.17.2.1 Vermont/New Hampshire**

15 **White Mountain National Forest**

16 The White Mountain NF sits in northern New Hampshire with a small amount of forest
17 extending east into Maine. This NF includes six Federal wilderness areas: Great Gulf Wilderness
18 (approximately 5,552 acres), Presidential Range-Dry River (29,000 acres), Pemigewasset
19 Wilderness (45,000 acres), Sandwich Range and Sandwich Range Extension Wilderness (25,000
20 and 10,800 acres), Caribou Speckled Mountain Wilderness (14,000 acres), and the Wild River
21 Wilderness (23,700 acres). It also includes the Wildcat Brook Wild and Scenic River. Three
22 cabins are available for rent, along with 23 developed campgrounds and three group campsites,
23 accessible by car. Backcountry camping is also permitted. Several facilities (campgrounds,
24 trails, etc.) are accessible for people in wheelchairs. Other recreational activities include biking,
25 bird watching, hiking, climbing, fishing, hunting and trapping, geocaching, boating, swimming,
26 skiing, and mountaineering. The annual visitation estimate for forest visits is 1,704,400. Much
27 of this area can be categorized as a medium-impact use area (USDA, 2010k; USDA, 2009n).

1

Winter in the White Mountain National Forest



2
3

Source: USDA, 2010k.

4 7.17.2.2 Maine

5 **Moosehorn National Wildlife Refuge**

6 The Moosehorn NWR is on the upper northeast corner of Maine, on the Canadian border. The
7 NWR covers 24,400 acres. In the park, over 50 miles of dirt roads and trails allow walking,
8 biking, and skiing. There are also two observation decks. Regulated hunting and fishing are
9 allowed in certain locations at certain times, but no camping or overnight parking, bicycling, or
10 motorized vehicle use is permitted. Most of this area can be categorized as a low-impact use
11 area (USDOI, 2010k).

12 **Moosehorn National Wildlife Refuge contains many scenic views**



13
14 Source: USDOI, 2010k.

15

16