



Chapter 3: Framework for Analysis



CONTENTS

1

2 3 Framework for Analysis 3-6

3 3.1 Environmental Resource Areas Analyzed for Impacts 3-6

4 3.1.1 Methodology for Resource Analysis 3-7

5 3.1.2 Impact Determinations 3-7

6 3.2 Air Quality 3-9

7 3.2.1 Context for Affected Environment 3-9

8 3.2.1.1 National Ambient Air Quality Standards and Attainment Status 3-10

9 3.2.1.2 General Conformity 3-11

10 3.2.1.3 Permitting Requirements 3-12

11 3.2.1.4 Other Requirements 3-14

12 3.2.2 Framework for Characterizing Resource Impacts 3-14

13 3.2.3 Activities with Environmental Consequences to Air Quality 3-15

14 3.3 Biological Resources 3-16

15 3.3.1 Context for Affected Environment 3-16

16 3.3.1.1 Blocks of Regionally Significant Habitat 3-16

17 3.3.1.2 Sensitive Habitats 3-16

18 3.3.1.3 Threatened and Endangered Species 3-16

19 3.3.1.4 Wildlife 3-16

20 3.3.1.5 Vegetative Habitat 3-17

21 3.3.1.6 Wetlands and Waterways 3-17

22 3.3.1.7 Aquatic Resources 3-17

23 3.3.2 Framework for Characterizing Resource Impacts 3-17

24 3.3.3 Activities with Environmental Consequences to Biological Resources 3-18

25 3.4 Geology and Soils 3-19

26 3.4.1 Context for Affected Environment 3-19

27 3.4.1.1 Geologic Conditions 3-19

28 3.4.2 Framework for Characterizing Resource Impacts 3-22

29 3.4.3 CBP Activities with Environmental Consequences to Geologic and Soil Resources

30 3-23

31 3.5 Water Resources 3-24

32 3.5.1 Context for Affected Environment 3-24

33 3.5.1.1 Hydrology and Groundwater 3-24

34 3.5.1.2 Surface Waters and Waters of the United States 3-24

1	3.5.1.3	Floodplains	3-25
2	3.5.2	Framework for Characterizing Resource Impacts	3-25
3	3.5.3	Activities with Environmental Consequences to Water Resources	3-25
4	3.6	Noise	3-26
5	3.6.1	Context for Affected Environment	3-26
6	3.6.1.1	Regulations and Requirements for Noise Control	3-28
7	3.6.2	Framework for Characterizing Resource Impacts	3-28
8	3.6.3	Activities with Environmental Consequences to the environment	3-29
9	3.7	Climate Change and Sustainability	3-30
10	3.7.1	Context for Affected Environment	3-30
11	3.7.1.1	Global Climate Change	3-30
12	3.7.1.2	Sustainability	3-31
13	3.7.2	Framework for Characterizing Resource Impacts	3-33
14	3.7.3	Activities with Environmental Consequences to Climate Change and Sustainability	
15		3-33
16	3.8	Land Use	3-33
17	3.8.1	Context for Affected Environment	3-33
18	3.8.1.1	Land Use Management	3-34
19	3.8.1.2	Recreation and Conservation Resource Areas	3-34
20	3.8.1.3	CBP Responsibilities on Federal Lands	3-38
21	3.8.1.4	Consistency with Enforceable Policies of the Coastal Zone Management Act ..	
22		3-38
23	3.8.2	Framework for Characterizing Resource Impacts	3-39
24	3.8.3	Activities with Environmental Consequences to Land Use	3-40
25	3.9	Aesthetic and Visual Resources	3-41
26	3.9.1	Context for Affected Environment	3-41
27	3.9.1.1	Affected Landscapes	3-41
28	3.9.1.2	Areas with High Visual Sensitivity	3-42
29	3.9.1.3	Affected User Groups	3-43
30	3.9.2	Framework for Characterizing Resource Impacts	3-44
31	3.9.2.1	Analysis Methodology	3-44
32	3.9.2.2	Impact Definition	3-45
33	3.9.2.3	Visual Feature Considerations	3-45
34	3.9.3	Activities with Environmental Consequences to Aesthetic and Visual Resources ...	
35		3-46

1	3.10 Socioeconomic Resources	3-47
2	3.10.1 Context for Affected Environment	3-47
3	3.10.2 Framework for Characterizing Resources Impacts.....	3-48
4	3.10.3 Activities with Environmental Consequences to Socioeconomic Resources	3-48
5	3.11 Cultural and Paleontological Resources	3-48
6	3.11.1 Context for Affected Environment	3-48
7	3.11.2 Framework for Characterizing Resource Impacts	3-48
8	3.11.3 Activities with Environmental Consequences to Cultural and Paleontological	
9	Resources	3-49
10	3.12 Environmental Justice and Protection of Children	3-49
11	3.12.1 Context for Affected Environment	3-49
12	3.12.1.1 Definitions of Affected Populations	3-49
13	3.12.1.2 Study Area and Analysis Methods	3-50
14	3.12.2 Framework for Characterizing Resource Impacts	3-51
15	3.12.3 Activities with Environmental Consequences to Environmental Justice and	
16	Protection of Children.....	3-52
17	3.13 Human Health and Safety	3-53
18	3.13.1 Context for Affected Environment	3-53
19	3.13.2 Framework for Characterizing Resource Impacts	3-53
20	3.13.3 Activities with Environmental Consequences to Human Health and Safety.....	3-53
21	3.14 Hazardous and Other Regulated materials.....	3-54
22	3.14.1 Context for Affected Environment	3-54
23	3.14.1.1 Hazardous Substances	3-54
24	3.14.1.2 Hazardous Waste	3-55
25	3.14.1.3 Special Hazards	3-57
26	3.14.1.4 Hazardous Materials Regulatory Requirements	3-60
27	3.14.2 Framework for Characterizing Resource Impacts	3-60
28	3.14.3 Activities with Hazardous and Other Regulated Materials Environmental	
29	Consequences.....	3-60
30	3.15 Utilities and Infrastructure	3-61
31	3.15.1 Context for Affected Environment	3-61
32	3.15.2 Framework for Characterizing Resource Impacts	3-62
33	3.15.3 Activities with Environmental Consequences to Utilities and Infrastructure.....	3-63
34	3.16 Roadways and Traffic	3-63
35	3.16.1 Context for Affected Environment	3-63

1	3.16.2	Framework for Characterizing Resource Impacts	3-63
2	3.16.3	Activities with Environmental Consequences to Transportation Resources	3-64
3	3.17	Recreation	3-64
4	3.17.1	Context for Affected Environment	3-64
5	3.17.1.1	Definitions	3-64
6	3.17.1.2	Analysis Methods	3-65
7	3.17.2	Framework for Characterizing Resource Impacts	3-67
8	3.17.3	Activities with Environmental Consequences to Recreation Resources	3-68
9			

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17

FIGURES

Figure 3.4-1. Landslide Types 3-20
Figure 3.4-2. Sink Hole in Karst Topography 3-21
Figure 3.4-3. Soil Classification Based on the Fraction of Clay Sand and Silt in a Soil..... 3-21

TABLES

Table 3.2-1. State Environmental Agencies and the Environmental Protection Agency Region....
..... 3-10
Table 3.2-2. Applicability Thresholds for Nonattainment Areas 3-12
Table 3.2-3. Major Modification Thresholds of Criteria Pollutants 3-13
Table 3.4-1. Soil Texture and Particle Size 3-22
Table 3.6-1. Common Sound Levels 3-27
Table 3.14-1. Building Components in Which Hazardous Materials Are Found..... 3-58
Table 3.17-1. Federal Recreation Areas along the Northern Border by Intensity of Use..... 3-67

3 FRAMEWORK FOR ANALYSIS

This chapter provides the framework for describing environmental resources affected by the program alternatives. It also outlines the approach used to determine the type and intensity of environmental impacts likely to occur from each alternative course of action. The goal of this Programmatic Environmental Impact Statement (PEIS) is to present both a determination of the combined impacts of U.S. Customs and Border Protection (CBP) activities within appropriate areas of effects and a description of the basis for making impact determinations at the site and project levels. The PEIS also broadly addresses cumulative impacts to resources from CBP planned and existing activities and activities beyond CBP's control.

Chapters 4 through 7 present the Northern Border area of study in four geographical regions: West of the Rockies, East of the Rockies, Great Lakes, and New England. These chapters focus on the unique aspects of the regional affected environments and particular considerations for environmental consequences that predominate in each region.

Chapter 8 presents direct and indirect impacts to affected resources for CBP activities, as well as cumulative impacts from CBP action alternatives combined with other activities beyond CBP's control. Appendix F presents the cumulative scenario used as the basis for the cumulative analysis. Chapter 9 presents mitigation measures being considered by CBP beyond those incorporated into CBP's normal practices.

3.1 ENVIRONMENTAL RESOURCE AREAS ANALYZED FOR IMPACTS

This PEIS analyzes potential impacts from CBP activities to 16 categories of environmental or socioeconomic resource areas. The resource areas and general impacts considered are as follows:

1. Air Quality: Contribution of air pollutants with respect to regional air quality goals.
2. Biological Resources: Influence on the viability of regional animal and plant species.
3. Geologic Resources: Alterations to regional geologic structures and soil characteristics.
4. Water Resources: Influence on quality and quantity of surface and subsurface supplies.
5. Noise: Creation of nuisance sound-levels relative to the expected soundscape.
6. Climate Change and Sustainability: Contribution to greenhouse gas (GHG) emissions and long-term enjoyment of natural resources and quality of life.
7. Land Use: Alteration of existing, expected, or planned regional uses of land and land covers.
8. Aesthetic and Visual Resources: Alteration of existing or desired visual resources.
9. Socioeconomic Resources: Changes to the local or regional economic profiles or social conditions.
10. Cultural and Paleontological Resources and Native American Issues: Potential to effect above- and below-ground historic and cultural resources and potential to obscure evidence of prehistoric life.

- 1 11. Environmental Justice and Protection of Children: Potential to have disproportionate
2 adverse effects on minority or low-income populations or to harm children.
- 3 12. Human Health and Safety: Actual alteration of or risk of impacting well-being of workers
4 and the general population.
- 5 13. Hazardous and Otherwise Regulated Materials: Generation, use, and disposal of harmful
6 chemicals and other materials.
- 7 14. Utilities and Infrastructure: Alterations in delivery or capacity of utility services to a
8 region or locality.
- 9 15. Roadways and Traffic: Alterations in flow of traffic or capacity of road infrastructure
10 within a region or locality.
- 11 16. Recreation: Changes in recreational value of areas used for leisure, exercise and
12 enjoyment of natural resource areas.

13 **3.1.1 METHODOLOGY FOR RESOURCE ANALYSIS**

14 The two overarching categories of activity included in CBP’s security program are construction
15 and operational activities. CBP also undertakes maintenance and repair of constructed facilities
16 and technologies used under each of these categories. This PEIS uses scenarios for CBP
17 construction and operational activities as the basis for characterizing the intensity of activities
18 and then determining the relative impact levels. The scenarios include a representative or
19 “typical” activity for each type of construction project and each type of operational activity that
20 could occur. Standard dimensions, frequencies of occurrence, and other factors characterize the
21 size and extent of the representative activities. Appendix F presents the scenarios describing
22 representative impact-causing activities.

23 The analysis of environmental consequences for each resource topic is based on application of
24 the scenarios within the applicable resource setting. Types of potential impacts from CBP
25 activities are determined on the basis of professional judgment. The analysis then explores the
26 chain of causes that could trigger those effects, given the activity scenarios; then that chain is
27 used to develop the operational definition of the affected environment on the basis of where the
28 activities may occur. The specific approach to each resource differs because of the wide range of
29 CBP activities within the umbrella of the program alternatives. Thus, the potential “area of
30 impact,” for example, could range from a narrow noise envelope for aerial patrols to possible
31 regionwide or national economic impacts for changes in inspection technologies at a port of
32 entry (POE). This approach provides a programmatic analysis of potential environmental
33 impacts on manmade and naturally occurring environmental resources.

34 **3.1.2 IMPACT DETERMINATIONS**

35 The Causes-Effects-Questions (C-E-Q) networks prepared for this project (Appendix E) were
36 used to construct the impact analyses. The C-E-Q diagrams show the actions, operations, and
37 components analyzed; the chains of potential direct, indirect, and cumulative effects studied; and
38 the interrelationships of these elements. The C-E-Q diagrams include section references and
39 hyperlinks that direct the reader to the section or sections that address each identified impact. To
40 assess cumulative impacts, a description of other CBP and non-CBP projects and actions that

1 could affect the resources discussed in this PEIS was developed, and the cumulative analysis was
2 conducted on the basis of the cumulative scenario described in Appendix F.

3 Each resource or topic contains a conclusion of the predicted impacts—either adverse or
4 beneficial. Four significance levels further characterize the impacts: negligible, minor,
5 moderate, and major. To account for the programmatic nature of the PEIS and the diverse
6 environmental conditions across the country, the resource’s capability to recover from temporary
7 or permanent impacts is an effective parameter to define and distinguish the four impact levels.
8 A detailed description of impact characterization follows.

9 **Impact levels for the natural environment** (biological and physical resources) are as follows:

- 10 • Negligible
 - 11 ○ No measurable impacts.
- 12 • Minor
 - 13 ○ Most impacts to the affected resource could be avoided with proper mitigation; and
 - 14 ○ If impacts occur, the affected resource will recover completely without any mitigation
 - 15 ○ once the impacting agent is eliminated.
- 16 • Moderate
 - 17 ○ Impacts to the affected resource are unavoidable;
 - 18 ○ The viability of the affected resource is not threatened although some impacts may
 - 19 ○ prove irreversible; or
 - 20 ○ The affected resource would recover completely with proper mitigation during the
 - 21 ○ life of the project or proper remedial action once the impacting agent is eliminated.
- 22 • Major
 - 23 ○ Impacts to the affected resource are unavoidable;
 - 24 ○ The viability of the affected resource may be threatened; and
 - 25 ○ The affected resource would not fully recover even if proper mitigation is applied
 - 26 ○ during the life of the project or remedial action is taken after elimination of the
 - 27 ○ impacting agent.

28 **Impact levels for the societal environment** (land use, recreation, sociocultural resources,
29 environmental justice, aesthetic and visual resources, and cultural resources) are as follows:

- 30 • Negligible
 - 31 ○ No measurable impacts.
- 32 • Minor
 - 33 ○ Adverse impacts to the affected activity or community could be avoided with proper
 - 34 ○ mitigation;

- 1 ○ Impacts would not disrupt the normal or routine functions of the affected activity or
- 2 community; and
- 3 ○ With elimination of the impacting agent, the affected activity or community will
- 4 return to a condition with no measurable effects from the proposed action without any
- 5 mitigation.

- 6 • Moderate
- 7 ○ Impacts to the affected activity or community are unavoidable;
- 8 ○ Proper mitigation would reduce impacts substantially during the life of the project;
- 9 ○ The affected activity or community would have to adjust somewhat to account for
- 10 disruptions due to impacts of the project; or
- 11 ○ Once the impacting agent is eliminated, the affected activity or community will return
- 12 to a condition with no measurable effects from the proposed action if proper remedial
- 13 action is taken.

- 14 • Major
- 15 ○ Impacts to the affected activity or community are unavoidable;
- 16 ○ Proper mitigation would reduce impacts somewhat during the life of the project;
- 17 ○ The affected activity or community would experience unavoidable disruptions to a
- 18 degree beyond what is normally acceptable; and
- 19 ○ Once the impacting agent is eliminated, the affected activity or community may retain
- 20 measurable effects of the proposed action indefinitely, even if remedial action is
- 21 taken.

22 The remainder of this chapter describes the underlying context for regional descriptions of the
 23 affected environment for each of the 16 resource areas. It also explains the resource-specific
 24 basis for determining impacts and impact levels and categorizes and lists CBP activities that
 25 could cause impacts to each resource.

26 **3.2 AIR QUALITY**

27 **3.2.1 CONTEXT FOR AFFECTED ENVIRONMENT**

28 The air quality for a given region or area is measured with respect to the presence of various
 29 pollutants and their concentrations in the air. The entire Northern Border study area contains
 30 many air quality control regions (AQCR) and Class I areas that could experience impacts due if
 31 the proposed alternatives are implemented. An AQCR is an area (interstate or intrastate)
 32 designated by the U.S. Environmental Protection Agency (EPA) for the attainment and
 33 maintenance of National Ambient Air Quality Standards (NAAQS). Class I areas are Federal
 34 lands with more stringent air quality restrictions under Section 162(a) of the Federal Clean Air
 35 Act. These restrictions are largely meant to maintain unimpaired visibility in areas such as
 36 national parks, national wilderness areas, and national monuments. For descriptions regional
 37 specific aspects of the affected environments for air quality see Sections 4.2.2 (West of the
 38 Rockies), 5.2.2 (East of the Rockies), 6.2.2 (Great Lakes), and 7.2.2 (New England).

1 **3.2.1.1 National Ambient Air Quality Standards and Attainment Status**

2 The U.S. Environmental Protection Agency (EPA) as well as individual state environmental
 3 regulatory agencies regulate air quality along the Northern Border (Table 3.2-1). The Clean Air
 4 Act (CAA) (42 U.S.C.7401–7671q), as amended, gives EPA the responsibility to establish the
 5 primary and secondary National Ambient Air Quality Standards (NAAQS) (40 CFR 50) that set
 6 acceptable concentration levels for six criteria pollutants: particulate matter (PM₁₀ and PM_{2.5}),
 7 sulfur dioxide (SO₂), carbon monoxide (CO), nitrogen oxides (NO_x), ozone (O₃), and lead (Pb).
 8 Short-term standards (1-, 8-, and 24-hour periods) have been established for pollutants
 9 contributing to acute health effects, while long-term standards (annual averages) have been
 10 established for pollutants contributing to chronic health effects. Each state has the authority to
 11 adopt standards stricter than those established under the Federal program; however, all states
 12 along the Northern Border accept the Federal standards.

13 **Table 3.2-1. State Environmental Agencies and the**
 14 **Environmental Protection Agency Region**

State	State Agency	EPA Region
WEST OF THE ROCKIES REGION		
Idaho	Idaho Department of Administration	10
Western Montana	Montana Department of Environmental Quality	8
Washington	Washington Department of Natural Resources	10
EAST OF THE ROCKIES REGION		
Minnesota	Minnesota Department of Natural Resources	5
Eastern Montana	Montana Department of Environmental Quality	8
North Dakota	North Dakota Department of Environmental Health	8
GREAT LAKES REGION		
Illinois	Illinois Environmental Protection Agency	5
Indiana	Indiana Department of Environmental Management	5
New York	New York State Department of Environmental Conservation	2
Ohio	Ohio Environmental Protection Agency	5
Pennsylvania	Pennsylvania Department Environmental Protection	3
NEW ENGLAND REGION		
Maine	Maine Department of Environmental Protection	1
New Hampshire	New Hampshire Department of Environmental Services	1

State	State Agency	EPA Region
Vermont	Vermont Department of Environmental Conservation	1

1 Source: (USEPA, 2010).

2 Federal regulations designate AQCRs that have concentrations of one or more of the criteria
3 pollutants that exceed the NAAQS as “nonattainment areas.” Major cities usually have high
4 traffic volumes and large industrialized areas that can contribute to elevated O₃ and PM_{2.5} (EPA,
5 2010). Federal regulations designate AQCRs that were once classified as nonattainment and that
6 have lowered levels of pollutants through the use of regional controls, as “maintenance areas.”

7 **3.2.1.2 General Conformity**

8 Two independent legal requirements address air quality management in the preplanning stages:
9 (1) NEPA and (2) the general conformity provision of CAA §176(c). Under the CAA section,
10 Federal agencies are prohibited from engaging in, supporting, providing assistance for, or
11 approving activities (e.g., issuing a license or permit) that are inconsistent with State
12 Implementation Plan (SIP) requirements. This section is known as the General Conformity Rule
13 (GCR). Depending on the action and the attainment status of the county, a CBP activity might
14 have to complete a separate conformity analysis in addition to the NEPA analysis. Exemption
15 from one requirement does not automatically exempt the action from the other requirement, nor
16 does fulfillment of one requirement constitute fulfillment of the other. The GCR, however, was
17 written with NEPA in mind, and CBP integrates the two requirements to save time and
18 resources.

19 According to CAA §176(c), activities must conform to an implementation plan’s purpose of
20 “eliminating or reducing the severity and number of violations” of NAAQS and achieving
21 “expeditious attainment” of such standards. Such activities must not cause or contribute to a new
22 violation; increase the frequency or severity of an existing violation; or delay timely attainment
23 of any standard, required, interim emission reduction, or other milestone. Pursuant to that rule,
24 conformity determinations are required to ensure that state air quality standards would not be
25 exceeded and that an action would comply fully with the SIP.

26 The GCR divides the air conformity process into two distinct areas: applicability analysis and
27 conformity determination. The GCR requires Federal agencies to determine whether their
28 actions would increase emissions of criteria pollutants above preset threshold levels (40 CFR
29 93.153(b)). These de minimis rates vary depending on the severity of the nonattainment and
30 geographic location. De minimis emissions are total direct and indirect emissions of a criteria
31 pollutant caused by a Federal action in a nonattainment or maintenance area at rates less than the
32 specified applicability thresholds. These rates vary by the type of pollutant and the level of
33 nonattainment (Table 3.2-2).

1

Table 3.2-2. Applicability Thresholds for Nonattainment Areas

Criteria Pollutants (tons per year)	Threshold
O3 (VOCs or NOx)	
Serious NAAs	50
Severe NAAs	25
Extreme NAAs	10
Other O3 NAAs outside an O3 transport region	100
Marginal and moderate NAAs inside an O3 transport region	
VOC	50
NOx	100
CO	
All NAAs	100
SO2 or NOx	
PM10	
Moderate NAAs	100
Serious NAAs	70
Pb	
All NAAs	25

2

Source: (40 CFR 93.153).

3 3.2.1.3 Permitting Requirements

4 Air permitting is required for many industries and facilities that emit regulated pollutants. Based
5 on the size of the emissions units and type of pollutants emitted (criteria pollutants or hazardous
6 air pollutants [HAPs]), each state environmental agency sets permit rules and standards for
7 emissions sources. Permitting scenarios may vary based on the equipment, timing of the
8 projects, and the types of controls ultimately selected. These may differ in specific features from
9 the ones described in this PEIS. However, during the final design stage and the permitting
10 process either (1) the actual equipment, controls, or operating limitations would be selected to
11 reduce the “potential to emit” (PTE) below the major source threshold or (2) the permitting
12 process would require emission offsets be obtained from other previously decommissioned
13 sources within nonattainment areas where applicable. This cap-and-trade type system is inherent
14 to Federal and state air regulations, and leads to a forced reduction in regional emissions.
15 Therefore, regardless of the ultimate permitting scenario, these impacts would be considered
16 minor under NEPA. Notably, sources subject to major source permitting are not subject to
17 general conformity.

1 **Construction Permits**

2 The air quality permitting process begins with the application for a construction permit.
3 Typically there are three types of construction permits available for the construction and
4 temporary operation of new emissions sources: Major New or Modified Source Construction
5 permits in Nonattainment Areas (Nonattainment New Source Review [NNSR]); Prevention of
6 Significant Deterioration (PSD) permits in attainment areas; and Minor New Source
7 Construction permits (Minor New Source Review [NSR]).

8 Attainment areas are managed under the Prevention of Significant Deterioration (PSD) program
9 of the CAA. The goal of this program is to prevent the degradation of air quality, while at the
10 same time allowing for moderate economic growth. Thresholds requiring a PSD permit are
11 outlined in Table 3.2-3. PSD review and permitting is required for sources emitting 100 tons per
12 year (tpy) of any regulated pollutant for any of 26 named PSD source categories. One of the
13 named source categories is fossil-fuel boilers that singly or in combination at a single facility
14 total more than 250 MMBtu/hr heat input. For all other sources not in the 26 named source
15 categories, PSD review is required if the source emits 250 tpy or more of any regulated pollutant.
16 Sources subject to PSD are typically required to complete Best Available Control Technology
17 (BACT) review for criteria pollutants, predictive modeling of emissions from proposed and
18 existing sources, and public involvement.

19 **Table 3.2-3. Major Modification Thresholds of Criteria Pollutants**

Pollutant	New Major Source (tpy)	Major Modification to an Existing Source (tpy)
CO	250 (100)	100
NO _x	N/A	N/A
SO ₂	250 (100)	40
PM	250 (100)	25
PM ₁₀	250 (100)	15
PM _{2.5}	250 (100)	10
VOCs	N/A	N/A

20 *Notes:* PSD review and permitting is required for sources emitting 100
21 tpy of any regulated pollutant for fossil fuel boilers (or combination of
22 them) totaling more than 250 MMBtu/hr heat input.

23 N/A = Not applicable.

24 Source: (40 CFR Part 52).

25 A Minor New Source Construction permit (or Minor NSR permit) would be required to construct
26 minor new sources and minor modifications of existing sources. The NSR permitting process
27 typically takes four to five months to complete. Sources subject to Minor NSR could be required
28 to complete a BACT review for each criteria pollutant, a Maximum Available Control
29 Technology (MACT) review for regulated HAPs and designated categories, and predictive air

1 dispersion modeling, as well as establish procedures for measuring and recording emissions and
2 process rates.

3 **Operating Permits**

4 Under state and Federal Title V regulations, a Title V permit is required for facilities whose
5 emissions increases exceed the emissions thresholds outlined in Table 3.2-3. In addition, a
6 significant permit modification would be required if it became necessary to establish federally
7 enforceable limitations to reduce potential emissions below the thresholds. A minor permit
8 modification would be required if emissions were below the thresholds and a federally
9 enforceable limit was not necessary. Submission of an application for these permit modifications
10 would be required within one year of the first operation of a new emissions source.

11 **3.2.1.4 Other Requirements**

12 In addition to the permitting requirements to construct and operate new or modified emissions
13 sources, New Source Performance Standards (NSPS) and National Emission Standards for
14 Hazardous Air Pollutants (NESHAPs) set emissions control standards for categories of new
15 stationary emissions sources of both criteria pollutants and HAPs. The NSPS process requires
16 EPA to list categories of stationary sources that cause or contribute to air pollution that might
17 reasonably be anticipated to endanger public health or welfare. The NSPS program sets uniform
18 emissions limitations for many industrial sources such as boilers and stand-by generators. Under
19 NESHAP, new stationary sources whose potential to emit HAPs exceeds either 10 tpy of a single
20 HAP, or 25 tpy of all regulated HAPs, would be subject to MACT requirements.

21 **3.2.2 FRAMEWORK FOR CHARACTERIZING RESOURCE IMPACTS**

22 To analyze the potential for CBP activities to produce air quality impacts, this PEIS:

- 23 • Characterizes the areas within which CBP's proposed action and alternatives would be
24 implemented as:
 - 25 ○ Attainment/unclassified;
 - 26 ○ Nonattainment;
 - 27 ○ Maintenance; and
 - 28 ○ Class I.
- 29 • Characterizes various direct and indirect sources of air emissions associated with the
30 action such as:
 - 31 ○ Stationary (e.g., permanent stationary sources of air emissions);
 - 32 ○ Mobile (e.g., on-road automobile and truck traffic);
 - 33 ○ Non-road (e.g., heavy equipment and off-road vehicles); and
 - 34 ○ Area (e.g., fugitive dust and lawn maintenance equipment).
- 35 • Compares the direct and indirect emissions from the activities to the regulatory
36 thresholds, such as the de minimis thresholds under the general conformity regulation or
37 the major source threshold for the permitting of stationary sources.

1 This approach assumes that a project or activity has the potential to create a major adverse
2 impact to air quality if:

- 3 • The total direct and indirect emissions would exceed the de minimis thresholds as
4 outlined under the general conformity regulations for a nonattainment or maintenance
5 area (e.g., more than 100 tons per year of nitrogen oxides [NO_x] and a moderate
6 nonattainment area for the 8-hour ozone NAAQS);
- 7 • New stationary sources of air emissions would exceed the nonattainment new source
8 review major source threshold in a nonattainment area;
- 9 • New stationary sources of air emissions would exceed the prevention of significant
10 deterioration major source threshold in an attainment area; or
- 11 • New stationary sources of air emissions would be large enough and/or close enough to
12 potentially affect a Class I area.

13 The study area contains many air quality control regions (AQCR) and Class I areas that could
14 experience impacts due to the proposed action and alternatives in this PEIS. However, the mere
15 presence of a sensitive area such as a nonattainment, maintenance, or Class I areas does not
16 guarantee that it would be impacted by CBP's activities. Effects would be considered minor
17 unless they exceeded the applicability threshold for a Clean Air Act (CAA) nonattainment area
18 or contributed to a violation of any Federal, state, or local air regulation. While there are
19 scattered areas of air quality nonattainment in Montana and Idaho and in urban areas of the Great
20 Lakes and New England Regions, air quality over the majority of the Northern Border is in
21 attainment with the relevant air quality standards. All CBP actions would normally conform to
22 each State Implementation Plan (SIP).

23 **3.2.3 ACTIVITIES WITH ENVIRONMENTAL CONSEQUENCES TO AIR QUALITY**

24 Several CBP activities do not generate any direct or indirect emissions for which either CBP
25 maintains an ongoing program of control, or otherwise would have no effect or a beneficial
26 effect on air quality. These activities include nonmotorized ground operations, operation of
27 nonintrusive inspection systems, and operation of sensor and other technologies. These activities
28 have not been carried forward for detailed analysis. Additionally, some of CBP activities
29 analyzed for adverse impacts could have minor beneficial effects, in addition to those outlined in
30 the appropriate section, based on the site-specific context. For example, constructing new CBP
31 facilities closer to areas with housing occupied by CBP or available to CBP employees would
32 reduce their commute time and distance and the associated air emissions.

33 CBP-related activities that could affect air quality include:

- 34 • Large construction projects;
- 35 • Small construction projects;
- 36 • Motorized ground operations;
- 37 • Aircraft operations; and
- 38 • Vessel operations.

1 **3.3 BIOLOGICAL RESOURCES**

2 **3.3.1 CONTEXT FOR AFFECTED ENVIRONMENT**

3 The area of consideration for the Northern Border PEIS is vast and includes a variety of
4 ecosystems and habitats that may extend in parts beyond the 100 miles range south of Canada
5 and also in parts into Canada. Appendix L provides detailed narratives about the ecosystems
6 included in the Northern Border area, including additional information about habitat and species
7 varieties found within the ecosystems. To provide a useful context for identifying impacts of
8 CBP program alternatives and activities, the description of the affected environment focuses on
9 the following areas.

10 **3.3.1.1 Blocks of Regionally Significant Habitat**

11 Activities in relatively undisturbed habitat can have more far-reaching environmental impacts
12 than similar activities in already disturbed areas. The importance and sensitivity of such habitats
13 may vary based on the presence and variety of native species, the size and shape (and
14 connectivity) of habitat, and its contribution to ground and surface water supply and quality.
15 Habitat fragmentation (the breakup of intact habitat into increasingly smaller and more
16 segregated areas) can isolate wildlife populations; in turn, this isolation can lead to wildlife
17 population declines. Fragmentation is a growing and significant threat to species persistence
18 (Reed, 2004). Some of the areas addressed in this PEIS reach across the Northern Border into
19 Canada.

20 **3.3.1.2 Sensitive Habitats**

21 Delineation of sensitive habitats is important because disturbance of such areas can cause rapid
22 ecological change (Turner, 2010). These sensitive ecological communities are less able to
23 withstand the effects of human activities and disturbance than agricultural areas, deciduous
24 forests, or other more-resistant habitats.

25 **3.3.1.3 Threatened and Endangered Species**

26 Endangered species are those species of plants and animals determined to be in danger of
27 extinction throughout a significant portion of their natural range. Threatened species are those
28 that will imminently become endangered without intervention. The U.S. Endangered Species
29 Act (ESA) of 1973 provides for making Federal listings of threatened and endangered species
30 and protecting and recovering these imperiled species along with the habitat and ecosystems
31 upon which they depend. (Threatened and endangered species found within the area covered by
32 this PEIS are listed in Appendix M.) The U.S. Fish and Wildlife Service (USFWS) has primary
33 responsibility for terrestrial and freshwater organisms; the Commerce Department's National
34 Marine Fisheries Service (NMFS) mainly protects marine wildlife such as whales and
35 anadromous fish such as salmon. Canada's version of the ESA is the Species at Risk Act
36 (SARA) of 2002. Actions within the United States are not bound by the Canadian SARA.

37 **3.3.1.4 Wildlife**

38 Most of the species in this section are not threatened or endangered; however, land use changes
39 may disrupt movement of wildlife during migration or dispersal and affect breeding, nesting, and
40 other normal behaviors. Healthy ecosystems depend on diverse and balanced wildlife
41 populations. Removal of a wildlife population or its habitat, or alteration of its ability to use the

1 habitat to complete its life cycle successfully, could significantly alter ecosystem function. The
2 Migratory Bird Treaty Act (MBTA) protects migratory birds, their eggs, feathers, and nests from
3 “takes” resulting from human activities. “Take” is defined in the MBTA to include “by any
4 means or in any manner, any attempt at hunting, pursuing, wounding, killing, possessing or
5 transporting any migratory bird, nest, egg, or part thereof. The Bald and Golden Eagle
6 Protection Act affords additional protection to all bald and golden eagles.”¹ “The Marine
7 Mammal Protection Act (MMPA) prohibits, with certain exceptions, “take” of marine mammals
8 in U.S. waters and by U.S. citizens on the high seas, and the importation of marine mammals and
9 marine mammal products into the U.S.”² Wildlife species protected by the aforementioned
10 statutes may also be protected under the ESA.

11 **3.3.1.5 Vegetative Habitat**

12 Healthy ecosystems depend on robust vegetation and local plant communities. Removal of a
13 native vegetative population or its habitat could significantly alter ecosystem function. A
14 growing threat to healthy native plant communities is introduction of nonnative invasive species.
15 The negative effects of these introduced species contribute to habitat destruction. In fact,
16 introduced species pose a greater threat to native biodiversity within all ecoregions than the
17 threats from pollution, harvest, and disease combined (Simberloff, 2000).

18 **3.3.1.6 Wetlands and Waterways**

19 Wetlands are often ecologically important, very sensitive to disturbance, and have a greater
20 likelihood of slow recovery compared to adjacent uplands. Large-scale wetland disappearance
21 and disturbance represent the current status of wetlands across the Nation, with loss estimates of
22 one-half of the country’s original 221 million acres of these highly productive lands (Feierabend,
23 1992).

24 **3.3.1.7 Aquatic Resources**

25 The major types of aquatic habitats that CBP activities may affect along the Northern Border are
26 estuaries, streams, lakes, rivers, and wetlands. The West of the Rockies and New England
27 Regions also have ocean coastal areas. Aquatic organisms found in these habitats include fish
28 (marine and freshwater), amphibians, reptiles, marine mammals, and plants. Waterborne human
29 operations as well as runoff from human activities on the land have the potential to affect aquatic
30 resources.

31 **3.3.2 FRAMEWORK FOR CHARACTERIZING RESOURCE IMPACTS**

32 This PEIS evaluates the potential for CBP activities to have impacts within each biological
33 resource of consideration area discussed in section 3.3.1. In general, the potential for major
34 impacts occurs when any of the habitat or resources would be stressed beyond the ability to fully
35 recover once the impacting agent is removed, even with mitigations orchestrated. In particular,
36 any activity with the following results would have potentially major impacts:

¹ <http://www.fws.gov/pacific/migratorybirds/mbta.htm>

² <http://www.nmfs.noaa.gov/pr/laws/mmpa/>

- 1 • Takes (whether permitted or not) of species protected under the ESA, MBTA, or MMPA
2 through harassment, harming, pursuing, hunting, shooting, wounding, killing, trapping,
3 capturing, or collecting, or attempting any of the aforementioned (§ 1532 (19));
- 4 • Destruction of habitat (directly or indirectly) resulting in takes or otherwise past the point
5 of recovery;
- 6 • Diminishment of the quality of wetlands or waterways through pollution, destruction,
7 damage, or other impairment; or
- 8 • Introduction of nonnative (alien or invasive) species into an ecosystem.

9 The scale and intensity of impacts would have bearing on their “significance,” but any of the
10 above acts that resulted in regional or local extirpation of a protected species would be
11 significant.

12 Beneficial impacts would occur if any activity improved habitat stability, added to habitat size or
13 connectivity, or improved conditions for protected and native species in a sustainable manner.

14 **3.3.3 ACTIVITIES WITH ENVIRONMENTAL CONSEQUENCES TO BIOLOGICAL** 15 **RESOURCES**

16 Activities considered with the proposal and alternatives of this PEIS that could affect biological
17 resources are grouped into three general categories (construction, operation, and maintenance)
18 and may include, but are not limited to, the following activities:

- 19 • Construction of
 - 20 ○ pedestrian or vehicle fences or other physical barriers;
 - 21 ○ extensions, upgrades, or repairs of access roads, fences, drag roads, bridges, culverts,
22 and low-water crossings;
 - 23 ○ new Border Patrol Stations (BPS), forward operating bases (FOBs), communications
24 towers, air and marine operational facilities;
 - 25 ○ modifications/upgrades of existing POEs, BPSs, hangars, and other facilities in
26 support of CBP operations; and
 - 27 ○ construction/set-up of permanent traffic checkpoints.
- 28 • Operation activities including
 - 29 ○ ground surveillance/patrols and situational response activities (including motorized
30 and nonmotorized, on-road and off-road, snowmobiles, canine, and horseback
31 patrols);
 - 32 ○ set up/operation of mobile traffic checkpoints;
 - 33 ○ use of unattended ground sensors (UGS) and other technology;
 - 34 ○ aircraft surveillance/patrols and situational response activities (manned and
35 unmanned);
 - 36 ○ maritime surveillance/patrols and situational response activities; and

- 1 ○ Implementation and deployment of remote video surveillance systems (RVSS),
2 mobile surveillance systems (MSS), Customs Area Surveillance Centers (CASC), and
3 Operational Integration Centers (OIC).

- 4 • Operations at fixed facilities:
 - 5 ○ routine activities at POEs including agricultural inspections;
 - 6 ○ continued standardizing and modernizing Office of Air and Marine (OAM) fleet;
 - 7 ○ use of nonintrusive/nondestructive inspection and detection technologies;
 - 8 ○ operation of small-arms weapons training ranges; and
 - 9 ○ enforcement of I-68 Canadian Border Boat Landing Program for recreational boaters.

- 10 • Maintenance and repair of all of the above.

11 **3.4 GEOLOGY AND SOILS**

12 **3.4.1 CONTEXT FOR AFFECTED ENVIRONMENT**

13 Geology is the study of the earth’s history as recorded in rock formations. Often these rocks
14 serve as the parent rock for soils present at and below the surface. Geologic resources are the
15 subsurface and surficial materials of the earth. Within a specific physiographic province (area of
16 land formations), these resources can be described according to soils, minerals, or topography.
17 Soils analysis uses soil-order classifications, which group soil characteristics specific to location,
18 parent material, and other factors that influence formation.

19 The geologic aspects along the Northern Border PEIS area of consideration vary widely along
20 the entirety of the border and within the four geographic regions subdividing this PEIS. The
21 analysis here is based on the broad characterization of geologic formations and geographical
22 locations.

23 **3.4.1.1 Geologic Conditions**

24 **Regional Glaciation**

25 Changes to the land surface are caused over time by the action of glaciers forming and retreating
26 through time. Glaciers (“permanent” bodies of ice, including mountain glaciers, ice sheets, and
27 ice shelves) are responsible for both transporting and depositing sediment materials across
28 distances and eroding landforms at small (polishing rock formations) and large (creating or
29 expanding valley formations) scales.

30 **Seismicity and Tectonics**

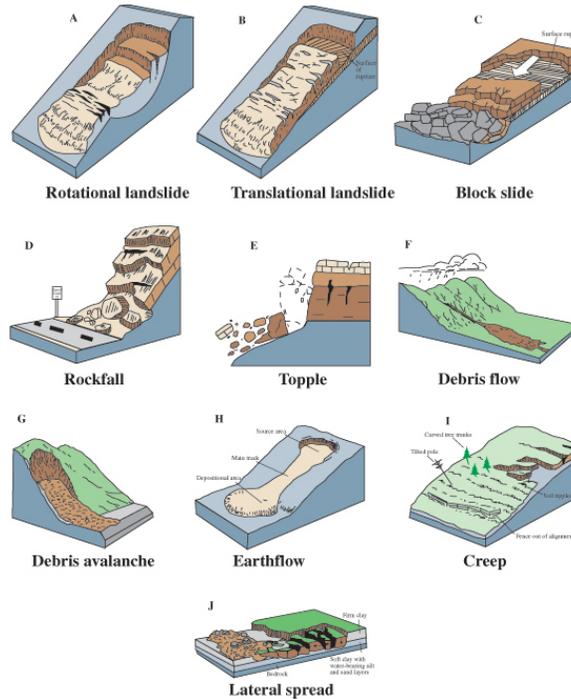
31 “Seismicity” refers to the geographic and historical distribution of earthquakes. “Tectonics”
32 refers to rock-deforming processes and resulting structures that occur over large sections of the
33 outer solid part of the earth, including the crust and uppermost mantle.

1 **Landslides**

2 A landslide is the downward movement of rock, soil, mud, and or other debris on a slope (Figure
3 3.4-1). The mass movement of earth materials can be either fairly slow or very sudden.
4 Landslide is a general term; there are many different types and causes of landslides. Along the
5 Northern Border, most landslides occur along the steep slopes of the many mountain ranges.
6 Landslides can be triggered by various mechanisms, including seismicity, rainfall, snowmelt,
7 volcanic events, and human activities (e.g., site development, mining, and deforestation). The
8 water content of the soil or rock in a sloped area is a major factor in an area’s risk for landslides
9 (Lane County, 2010).

10

Figure 3.4-1. Landslide Types



11
12

Source: USDOl, 2004a

13 **Karst Topography**

14 Karst topography is a landscape dominated by carbonate bedrock, including limestone, dolomite,
15 and marble. These formations are susceptible to dissolution by water, which can make an area
16 prone to land subsidence (Figure 3.4-2). Throughout the United States, subsidence occurs in at
17 least 45 states and affects approximately 17,000 square miles of land. National Park Service
18 (NPS) land requires special protections for karst terrain. Often the existence of karst topography
19 is related to aquifers. Along the Northern Border, karst landscapes occur from coast to coast.

1

Figure 3.4-2. Sink Hole in Karst Topography

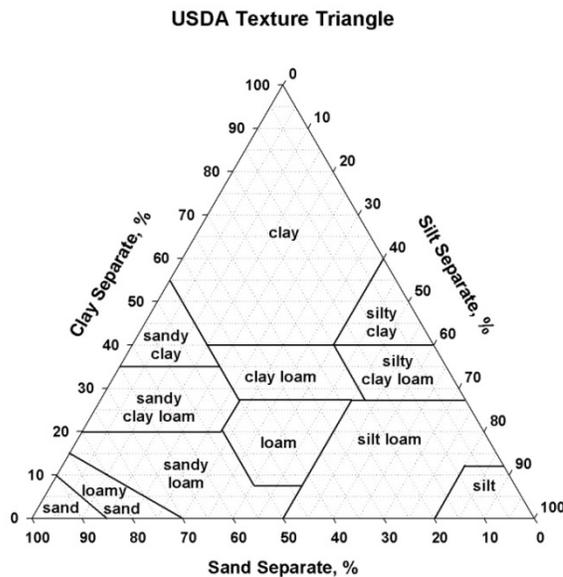


2

3 **Soils**

4 Soil taxonomy is the science of classifying soils based on physical qualities and characteristics
5 (Figure 3.4-3). Appendix N provides detailed descriptions of these soil orders.

6 **Figure 3.4-3. Soil Classification Based on the Fraction of Clay Sand and Silt in a Soil**



7 The erosion potential for various soil types can be determined by quantifying factors such as:

- 8 • Soil permeability;
- 9 • Slope gradient;
- 10 • Wind and water action; and
- 11 • Soil particle texture (Table 3.4-1).

1

Table 3.4-1. Soil Texture and Particle Size

Type of Material	Size (mm)
Sand	2.0 – 0.06
Silt	0.06 – 0.002
Clay	Under 0.002

2 Soils with low permeability (the ability to allow water or air move through its strata) have more
3 potential for erosion by both wind and water. Often these soils have small particle textures, thus
4 are less likely to allow water to infiltrate. Soils with high amounts of silt and fine sand are the
5 most susceptible to erosion by wind or water. The smallest particles, clays, usually have lower
6 erosion potential because the particles tend to bind to one another. Some clays are prone to
7 erosion due to expansion or swelling action when wet followed by desiccation or shrinking when
8 dried. The dry stage can lead to desiccation cracks, thus lessening particle binding and
9 increasing erosion potential. Though clays may not be as affected by water as silts and fine
10 sands, they can contribute to higher runoff due to their low permeability (NCSCC, 2006). Where
11 erosion ends, deposition begins. This is the point that the eroded particles drop from the medium
12 that carried them, and are deposited on surrounding areas of land or water.

13 Slope gradient is a major factor in erosion potential. Many of the soils on the Northern Border
14 fall into a high-gradient category. In areas of high relief, rain can cause erosion due to the
15 water’s downslope movement at high velocity. A soil’s susceptibility to erosion on a slope
16 depends upon the amount of vegetative cover as well as the soil texture. Vegetative cover is the
17 best method of reducing erosion on slopes, because it slows flow velocity and allows infiltration,
18 disperses flow, and protects the surface from the impact of falling rain (NCSCC, 2006).

19 Soil erosion also decreases soil productivity by removing and displacing topsoil. While erosion
20 is a normal and natural geologic process, manmade actions can increase its rate and impacts.

21 The Farmland Protection Policy Act (FPPA) was created to minimize impacts by the Federal
22 government on farmland by regulating the conversion of agricultural land to other uses. “Prime
23 and Unique Farmland” is a designation created by the U.S. Department of Agriculture Natural
24 Resources Conservation Service (NRCS) to identify lands with soils that are highly productive
25 and economically valuable to the country. To qualify as prime farmland, land must meet specific
26 criteria, including access to a dependable water supply, a sufficient growing season, adequate
27 amounts of acid or base in the soil, specific sodium content, and small particle size. Prime
28 farmland soils are typically well-drained and permeable (USDA, No Date). The NRCS has
29 developed a rating system through which farmland is scored; the score must sit within the
30 recommended allowable range. Form AD-1006 is used to complete the assessment and assign
31 the farmland conversion impact rating.

32 **3.4.2 FRAMEWORK FOR CHARACTERIZING RESOURCE IMPACTS**

33 This PEIS does not attempt categorize every potential geologic structure or soil type along the
34 entire Northern Border. It provides the analytical tools to conduct a specific impact assessment
35 for a given future site-specific project or activity, and offers examples of the types of geological
36 resource considerations along the border. It also analyzes how, in which settings, and to what

1 extent various CBP activities might create impacts and provides guidelines as necessary to
2 minimize, mitigate, or avoid such impacts. Relevant physical considerations for analyzing
3 impacts include factors such as:

- 4 • Erodibility;
- 5 • Permeability;
- 6 • Prime farmland status;
- 7 • Seismicity;
- 8 • Productivity; and
- 9 • Changes to the character of the landscape.

10 The following alterations could potentially have major adverse effects on geological aspects,
11 including soil performance characteristics:

- 12 • Substantial changes in soil stability, permeability, or productivity, such as the removal of
13 surface vegetative cover or an increase in impermeable surfaces, allowing increased
14 erosion of soil by wind and storm water runoff; and
- 15 • Substantial changes in risk to humans and property due to seismic events, such as the
16 construction of facilities that do not adhere to applicable building codes in areas of high
17 seismic risk.

18 CBP does not undertake any activities, such as subsurface injection of fluids or wastes
19 (excluding use of onsite septic systems at some facilities), that could substantially change the
20 physical characteristics of subsurface geological formations. Nor does CBP substantially alter
21 the physical character of natural landforms and surface features by cutting roads into hillsides or
22 participating in mining operations. However, subsurface work would be performed for
23 remediating (filling) tunnels used for cross-border smuggling. Also, CBP may need to put a
24 facility or a structure (tower) on a hillside requiring some alteration of slopes in the immediate
25 footprint of the construction. However, these would be exceptional activities along the Northern
26 Border that would require site-specific analysis to address the details of their implementation.

27 **3.4.3 CBP ACTIVITIES WITH ENVIRONMENTAL CONSEQUENCES TO** 28 **GEOLOGIC AND SOIL RESOURCES**

29 Activities considered within the proposal and alternatives of this PEIS that could affect
30 geological and soil resources fall into three general categories (construction, operation, and
31 maintenance) and may include, but are not limited to, the activities below:

- 32 • Construction of
 - 33 ○ pedestrian or vehicle fences or other physical barriers;
 - 34 ○ extensions, upgrades, or repairs of access roads, fences, drag roads, bridges, culverts,
35 and low-water crossings;
 - 36 ○ new BPSs, forward operating bases (FOBs), communications towers, air and marine
37 operational facilities;

- 1 ○ modifications/upgrades of existing POEs, BPSs, hangars, and other facilities in
- 2 support of CBP operations; and
- 3 ○ construction/set up of permanent traffic checkpoints.
- 4 • Operation activities including
- 5 ○ small-arms weapons training ranges; and
- 6 ○ ground surveillance/patrols and situational response activities (including motorized
- 7 and nonmotorized, on-road and off-road, snowmobiles, canine and horseback patrols,
- 8 set up/operation of mobile traffic checkpoints, use of unattended ground sensors
- 9 (UGS) and other technology).
- 10 • Maintenance and repair of all of the above.

11 **3.5 WATER RESOURCES**

12 **3.5.1 CONTEXT FOR AFFECTED ENVIRONMENT**

13 Due to the vast area considered in this document and the terrorism and criminal activity threat-
14 driven nature of CBP operations, site-specific characteristics of water resources are too
15 numerous to depict in detail and cannot be definitively aligned with changes in activity intensity
16 over the next five to seven years. Instead the affected environment is described using resources
17 categorized by the potential impact from a proponent’s typical actions and alternatives,
18 performing broad-based analyses, and developing best management practices and mitigations
19 that will prove useful to decision makers and for future site-specific assessments and other
20 environmental analyses. Following this principle, the resources in this section are characterized
21 in one of three categories as follows.

22 **3.5.1.1 Hydrology and Groundwater**

23 The hydrology and groundwater resources of a region refer to the quality and availability of a
24 safe water supply for drinking and other purposes for which an uncontaminated water source is
25 necessary. Groundwater is extracted for beneficial use from below the ground surface where it
26 rests in geologic storage reservoirs known as aquifers. Percolation of rainwater and other
27 precipitation through overlying layers of soil recharges the aquifers. Surface waters, such as a
28 river or stream, can also recharge an aquifer. Primary regulatory protection for hydrologic and
29 groundwater resources is provided by the Safe Drinking Water Act and its amendments, and by
30 waste regulations such as the Resource Conservation and Recovery Act and its amendments that
31 prevent entry of hazardous wastes into areas that will contaminate water sources.

32 **3.5.1.2 Surface Waters and Waters of the United States**

33 Section 404 of the Clean Water Act authorizes the U.S. Army Corps of Engineers and the U.S.
34 Environmental Protection Agency to regulate activities that affect U.S. waters; this section
35 defines those resources described as surface waters and waters of the United States. Although
36 section 404 specifically regulates wetlands, for the current analysis, surface waters and waters of
37 the United States refer to water bodies generally referred to as lakes, reservoirs, rivers, streams,
38 ponds, and creeks. Wetlands are addressed in the biological resources section (3.2) of this
39 chapter due to their unique value as a habitat and the particular qualities that define wetlands.

1 The quality and quantity of water in surface waters and waters of the United States are primarily
2 affected by precipitation and ensuing runoff, in addition to usage through activities such as
3 irrigation and industrial use.

4 **3.5.1.3 Floodplains**

5 Floodplains sit adjacent to surface waterways and store or hold floodwaters. These lands are
6 typically low, flat areas. Generally, they are identified and regulated as 100-year floodplains—
7 areas subject to a 1 percent chance of flooding in any given year. Preserving the area’s
8 functionality and minimizing the spread of floodwaters by regulating development that can occur
9 within the designated floodplain limits is desirable. Floodplain preservation and development
10 restrictions are managed in accordance with EO 11988, Floodplain Management. Federal
11 Emergency Management Agency (FEMA) flood insurance rate maps identifying land falling
12 within the 100-year floodplain boundaries can be obtained for most of the study area along the
13 Northern Border.

14 **3.5.2 FRAMEWORK FOR CHARACTERIZING RESOURCE IMPACTS**

15 This section provides the analytical tools to conduct a specific impact assessment for a future
16 site-specific project or activity. It also offers examples of the types of water resources that exist
17 along the border. It analyzes how, in which settings, and to what extent the various CBP
18 activities might affect water resources and provides guidelines, as necessary, to minimize,
19 mitigate, or avoid such impacts. It characterizes potential impacts as major (significant),
20 moderate, minor, or insignificant, using resource-specific criteria.

21 Activities that result in the following consequences can affect water resources:

- 22 • Fuel spills that make a groundwater aquifer unsuitable for withdrawing drinking water;
- 23 • High sediment loads in runoff from constructions site that harms aquatic organisms; and
- 24 • Substantial withdrawals from an aquifer that change the local water table and cause some
25 existing wells to dry up.

26 A proposed project or activity would potentially have a major impact on water resources under
27 these conditions:

- 28 • Substantial adverse changes in the quality of water supply sources due to contamination
29 from activities;
- 30 • Substantial adverse changes in the availability or quantity of a water supply source;
- 31 • Substantial adverse changes in surface water quality due to contamination from activities;
- 32 • Substantial adverse changes in streamflow patterns; and
- 33 • Substantial adverse changes in the capacity of watercourses to carry floodwaters.

34 **3.5.3 ACTIVITIES WITH ENVIRONMENTAL CONSEQUENCES TO WATER** 35 **RESOURCES**

36 Activities considered within the proposal and alternatives of this PEIS that could affect the
37 supply (availability) or quality of water resources are grouped into three general categories

1 (construction, operation, and maintenance) and may include, but are not limited to, the activities
2 below:

- 3 • Construction of
 - 4 ○ pedestrian or vehicle fences or other physical barriers;
 - 5 ○ extensions, upgrades, or repairs of access roads, fences, drag roads, bridges, culverts,
6 and low-water crossings;
 - 7 ○ new BPSs, forward operating bases (FOBs), communications towers, air and marine
8 operational facilities;
 - 9 ○ modifications/upgrades of existing POEs, BPSs, hangars, and other facilities in
10 support of CBP operations; and
 - 11 ○ construction/set up of permanent traffic checkpoints.
- 12 • Operation activities including
 - 13 ○ ground surveillance/patrols and situational response activities (including motorized
14 and nonmotorized, on-road and off-road, snowmobiles, canine and horseback patrols,
15 set up/operation of mobile traffic checkpoints, use of unattended ground sensors
16 (UGS) and other technology);
 - 17 ○ aircraft surveillance/patrols and situational response activities (manned and
18 unmanned);
 - 19 ○ maritime surveillance/patrols and situational response activities; and
 - 20 ○ implementation and deployment of RVSS, MSS, CASC, and OIC.
- 21 • Operations at fixed facilities:
 - 22 ○ continued standardizing and modernizing Office of Air and Marine (OAM) fleet;
 - 23 ○ operation of small-arms weapons training ranges; and
 - 24 ○ enforcement of I-68 Canadian Border Boat Landing Program for recreational boaters.
- 25 • Maintenance and repair of all of the above.

26 Although CBP does perform work in waters such as constructing low-water crossings in streams
27 and piers and boat slips in or around lakes, it does not engage in permanent construction within
28 floodways that could raise floodwater elevations thereby endangering people and property.

29 **3.6 NOISE**

30 **3.6.1 CONTEXT FOR AFFECTED ENVIRONMENT**

31 Sound is a physical phenomenon consisting of vibrations that travel through media such as air or
32 water and are sensed by the human ear. Noise is defined as any sound that is undesirable
33 because it interferes with communication, is intense enough to damage hearing, or is otherwise
34 intrusive. Human response to noise varies depending on the type and characteristics of the noise,
35 distance between the noise source and the receptor, receptor sensitivity, and time of day. Noise

1 is often generated by activities essential to a community’s quality of life, such as construction or
2 vehicular traffic.

3 Sound varies by both intensity and frequency. Sound pressure level, in decibels (dB), is used to
4 quantify sound intensity. The dB is a logarithmic unit that expresses the ratio of a sound
5 pressure level to a standard reference level. Because the human ear responds differently to
6 different frequencies, “A-weighting” was developed to approximate the frequency response of
7 the human ear. The A-weighting curve has been widely adopted for environmental noise
8 measurement and is standard in many sound level meters. The dBA levels of common sounds of
9 daily life are provided in Table 3.6-1.

10 The dBA noise metric describes steady noise levels, although, in fact, very few noises are
11 constant. Therefore, the measurement Day-Night Sound Level (DNL) has been developed.
12 DNL is defined as the average sound energy in a 24-hour period with a 10-dB penalty added to
13 the nighttime levels (10 p.m. to 7 a.m.). DNL is a useful descriptor for noise because: (1) it
14 averages ongoing yet intermittent noise and (2) it measures total sound energy over a 24-hour
15 period. In addition, Equivalent Sound Level (L_{eq}) is often used to describe the overall noise
16 environment. L_{eq} is the average sound level in dB.

17 **Table 3.6-1. Common Sound Levels**

Outdoor	Sound level (dBA)	Indoor
Snowmobile	100	Subway train
Tractor	90	Garbage disposal
Downtown (large city)	80	Ringling telephone
Freeway traffic	70	TV audio
Normal conversation	60	Sewing machine
Rainfall	50	Refrigerator
Quiet residential area	40	Library

18 Notes: dBA = A-weighted decibel. Sound level provided is as generally
19 perceived by an operator or a close observer of the equipment or situation
20 listed.

21 Source: (Harris, 1998).

22 The Northern Border study area contains many soundscapes and noise-sensitive receptors (such
23 as national parks, residences, or schools) that could be impacted by implementation of any of the
24 proposed alternatives. The mere presence of a noise-sensitive area, such as a national park,
25 residence, or school, does not guarantee that it would be significantly impacted by CBP activities
26 or that the overall impacts would be major under NEPA. For descriptions of the regional
27 affected environments for noise, see sections 4.6.2 (West of the Rockies), 5.6.2 (East of the
28 Rockies), 6.6.2 (Great Lakes), and 7.6.2 (New England).

1 **3.6.1.1 Regulations and Requirements for Noise Control**

2 The Noise Control Act of 1972 (PL 92-574) directs Federal agencies to comply with applicable
3 Federal, state, interstate, and local noise control regulations. In 1974, the EPA provided
4 information suggesting continuous and long-term noise levels in excess of DNL 65 dBA are
5 normally unacceptable for noise-sensitive land uses such as residences, schools, churches, and
6 hospitals.

7 State and local governments have the opportunity to regulate noise in their jurisdictions. These
8 regulations are typically guidelines for activities that generate noise and the hours that such
9 activities may be performed. A municipal noise ordinance might address the hours that heavy
10 equipment can be operated, the distance heavy equipment can be operated in proximity of noise-
11 sensitive receptors (i.e., schools, hospitals, churches, and residences), and the duration of
12 operation of a single noise source considered to be annoying to the public, such as a diesel-
13 powered generator. Some set specific not-to-exceed noise levels, and others are simple nuisance
14 noise ordinances.

15 A number of sources of noise may be addressed for rural areas, such as parades, vendors, social
16 engagements with music, and animal noises. Construction noise is typically exempt from noise
17 ordinances in rural areas. In addition, noise regulations in an urban setting take into account the
18 constant noise sources of urban living, such as large HVAC units, public transportation (trains
19 and buses), emergency vehicles, and heavy traffic. Because urban noise levels are already
20 relatively high, adding a source for an extended period can be highly annoying to some people,
21 thus hours of construction and operation of heavy equipment are often limited. A typical
22 ordinance in a major city will restrict construction related noise sources between the hours of
23 10:00 p.m. and 7:00 a.m.

24 **3.6.2 FRAMEWORK FOR CHARACTERIZING RESOURCE IMPACTS**

25 To analyze the potential for CBP activities to increase noise along the Northern Border, this
26 PEIS makes the following assessments.

- 27
- 28 • Characterizes the areas where CBP’s activities would be implemented as:
 - 29 ○ Very rural and remote;
 - 30 ○ Very quiet suburban and rural residential;
 - 31 ○ Quiet suburban residential;
 - 32 ○ Urban and noisy suburban residential; or
 - 33 ○ Areas of special interest such as national parks.
 - 34 • Characterizes the sources of noise as either:
 - 35 ○ Short-term sources (e.g., construction and infrastructure upgrades) or
 - 36 ○ Long-term sources (e.g., generators, automobiles, off-road vehicles, unmanned
37 aircraft systems, and truck traffic).
 - 38 • Compares noise associated with the activities to incompatibility and regulatory
thresholds, such as the 65 dBA DNL limit.

1 This PEIS uses a systematic process to evaluate the level of impact for noise. This process
2 compares predictions to significance criteria based on legal and regulatory constraints, along
3 with team members' professional technical judgment. Specifically, this approach assumes that a
4 project or activity has the potential to create a major adverse affect due to noise if it:

- 5 • Affects a substantial swath of land by generating long-term or permanent sound levels
6 greater than 65 dBA DNL (day-night sound level) in noise-sensitive areas;
 - 7 ○ Generates noise that is not manageable through scheduling, or uses engineering
8 controls that may violate Federal, state, or local noise regulations; or
- 9 • Generates noise in a national park that exceeds significant effects thresholds as outlined
10 by the National Park Service (NPS).

11 This PEIS provides a bounded analysis of CBP activities for which less-than-significant effects
12 are expected. It provides an analytical tool to assess activities that may cause significant adverse
13 impacts or specifies if the appropriate information is not currently available to determine the
14 level of impact. It characterizes potential impacts as negligible, minor, moderate, or major using
15 resource-specific criteria and outlines regulatory requirements, best management practices, and
16 possible ways to mitigate significant impacts.

17 The PEIS also includes planning guidelines for avoiding, managing, mitigating, or minimizing
18 these effects.

19 **3.6.3 ACTIVITIES WITH ENVIRONMENTAL CONSEQUENCES TO THE** 20 **ENVIRONMENT**

21 CBP activities considered within the proposal and alternatives of this PEIS that could affect the
22 noise environment include the following:

- 23 • Construction of
 - 24 ○ pedestrian or vehicle fences or other physical barriers;
 - 25 ○ extensions, upgrades, or repairs of access roads, fences, drag roads, bridges, culverts,
26 and low-water crossings;
 - 27 ○ new BPSs, forward operating bases (FOBs), communications towers, air and marine
28 operational facilities;
 - 29 ○ modifications/upgrades of existing POEs, BPSs, hangars, and other facilities in
30 support of CBP operations; and
 - 31 ○ construction/set up of permanent traffic checkpoints.
- 32 • Operation activities including
 - 33 ○ ground surveillance/patrols and situational response activities (including motorized
34 and nonmotorized, on-road and off-road, snowmobiles, canine and horseback patrols,
35 set up/operation of mobile traffic checkpoints, use of unattended ground sensors
36 (UGS) and other technology);

- 1 ○ aircraft surveillance/patrols and situational response activities (manned and
- 2 unmanned);
- 3 ○ maritime surveillance/patrols and situational response activities; and
- 4 ○ implementation and deployment of RVSS, MSS, CASC, and OIC.
- 5 • Operations at fixed facilities:
- 6 ○ continued standardizing and modernizing Office of Air and Marine (OAM) fleet;
- 7 ○ use of nonintrusive/nondestructive inspection and detection technologies;
- 8 ○ operation of small-arms weapons training ranges; and
- 9 ○ enforcement of I-68 Canadian Border Boat Landing Program for recreational boaters.
- 10 • Maintenance and repair of all of the above.

11 **3.7 CLIMATE CHANGE AND SUSTAINABILITY**

12 **3.7.1 CONTEXT FOR AFFECTED ENVIRONMENT**

13 **3.7.1.1 Global Climate Change**

14 Executive Order (EO) 13514, “Federal Leadership in Environmental, Energy, and Economic
15 Performance” (October 5, 2009), outlines policies intended to ensure that Federal agencies
16 evaluate climate change risks and vulnerabilities and manage the short- and long-term effects of
17 climate change on their operations and mission.

18 According to the U.N, climate change “refers to a change in the state of the climate that can be
19 identified (e.g., using statistical tests) by changes in the mean and/or the variability of its
20 properties, and that persists for an extended period, typically decades or longer. Climate change
21 may be due to natural internal processes or external forcings, or to persistent anthropogenic
22 changes in the composition of the atmosphere or land use.”

23 Climate change research reports from the United Nations Intergovernmental Panel on Climate
24 Change (IPCC), U.S. Climate Change Science Programs Science Synthesis and Assessment
25 Products, and the U.S. Global Change Research Program (USGCRP) conclude that the Earth’s
26 climate is already changing. The change is expected to accelerate (USDA, 2009). Some observed
27 changes include shrinking of glaciers, thawing of permafrost, later freezing and earlier break-up
28 of ice on rivers and lakes, lengthening of growing seasons, shifts in plant and animal ranges, and
29 earlier flowering of trees (IPCC, 2007).

30 Temperature increases may be associated with human-induced increases in greenhouse gas
31 (GHG) emissions released into the atmosphere as a result of combustion. Common GHGs such
32 as carbon dioxide, methane, and nitrous oxide trap radiant heat from the Earth, causing the
33 average temperature to rise. Federal agencies, states, and local communities address global
34 warming by preparing GHG inventories and adopting policies that will result in a decrease of
35 GHG emissions. EO 13514 specifically requires Federal agencies to measure, report, and reduce
36 GHG emissions from both their direct and their indirect activities. Direct activities include
37 actions related to sources the agencies own and control and the generation of electricity, heat, or

1 steam they purchase. Indirect activities include actions of vendor supply chains, delivery
2 services, and employee travel and commuting. “Instructions for Implementing Climate Change
3 Adaptation Planning in Accordance with Executive Order 13514” was also issued on March 4,
4 2011 to provide more guidance for Federal agencies.

5 The Council on Environmental Quality (CEQ) has issued draft guidance for considering global
6 climate change in documents prepared pursuant to the National Environmental Policy Act
7 (NEPA) (CEQ, 2010; USDA, 2009). The draft guidance identifies two aspects of global climate
8 change:

- 9 • The potential for Federal agencies to influence global climatic change (e.g., increased
10 emissions or sinks of GHG); and
- 11 • The potential for global climatic change to affect Federal actions (e.g., feasibility of
12 coastal projects in light of projected sea level rise).

13 **3.7.1.2 Sustainability**

14 Sustainability and smart growth work to meet the needs of the
15 present without compromising the ability of future generations
16 to meet their own needs. For CBP, the concepts of
17 sustainability and smart growth include the ability to adjust to
18 changing geopolitical realities while preserving the
19 environment and working to improve the quality of life for
20 American residents and visitors to the United States.



21 To reduce environmental impacts and address potential future
22 resource limitations, the DHS prepared a “Strategic Sustainability Performance Plan” to promote
23 sustainable planning, design, development, and operations. The guidelines work to decrease
24 energy use, minimize reliance on traditional fossil fuels, protect and conserve water, and reduce
25 the environmental impact of materials use and disposal. CBP’s overarching goal is size, plan,
26 and develop future facilities in a manner that is sustainable, aiding preservation and protection of
27 finite resources.

28 **Regulations and Requirements Related to Climate Change and Sustainability**

29 According to EO 13148, “Greening the Government,” all Federal agencies must take necessary
30 actions to integrate environmental accountability into day-to-day decision making and long-term
31 planning processes, across all agency missions, activities, and functions. Consequently,
32 environmental management considerations must be a fundamental and integral component of all
33 Federal agencies’ policies, operations, planning, and management. The following Federal
34 mandates and regulations shape CBP’s responsibilities related to climate change and
35 sustainability:

- 36 • The Energy Independence and Security Act of 2007;
- 37 • The Energy Policy Act of 2005;
- 38 • EO 12873, “Federal Acquisition, Recycling, and Waste Prevention”;
- 39 • EO 13031, “Federal Alternative Fuel Vehicle Leadership”;

- 1 • EO 13134, “Development and Promotion of Biobased Products and Bioenergy”;
- 2 • EO 13352. “Facilitation of Cooperative Conservation”;
- 3 • EO 13514, “Federal Leadership in Environmental, Energy, and Economic Performance”;
- 4 • EO 13423, “Strengthening Federal Environmental, Energy, and Transportation
- 5 Management”;
- 6 • The Federal Leadership in High Performance and Sustainable Building Memorandum of
- 7 Understanding (MOU) 2006;
- 8 • Energy Independence and Security Act of 2007;
- 9 • National Defense Authorization Act 2007; and
- 10 • Pollution Prevention Act, 42 USC §13101 *et seq.*

11 **Operational Sustainability Performance Plan**

12 To comply with EO 13514, “Federal Leadership in Environmental, Energy, and Economic
13 Performance,” the DHS must adhere to sustainable principles and implement sustainable
14 practices throughout the Agency. In keeping with this mandate, the DHS directed all of its
15 branches to complete tactical implementation plans known as Operational Sustainability
16 Performance Plans, or OSPPs. The purpose of an OSPP is to outline a series of milestones and
17 objectives that will accomplish the goals of EO 13514. CBP issued a nationwide draft OSPP in
18 October 2010, guided by CBP’s current environmental management policy (USDHS, 2010a).

19 CBP’s current environmental management policy does not meet the standard outlined by the
20 DHS in its guidance on the creation of OSPPs. CBP’s revised policy is currently being
21 developed. The CBP Office of Administration (OA), Facilities Management and Engineering
22 (FM&E), Environmental and Energy Division (EED) plans to issue the revised policy in the third
23 quarter of FY2011.

24 The OSPP lists 10 goals and outlines CBP’s strategy to achieve these goals. Numerous
25 accomplishments related to these goals have already been made. The goals are as follows:

- 26 • Goal 1: Scope 1 and 2 GHG Reduction
- 27 • Goal 2: Scope 3 GHG Reduction
- 28 • Goal 3: Develop and Maintain Component-Comprehensive GHG Inventory
- 29 • Goal 4: High-Performance Sustainable Building (HPSB) Design/Green Buildings
- 30 • Goal 5: Regional and Local Planning
- 31 • Goal 6: Water Use Efficiency and Management
- 32 • Goal 7: Pollution Prevention and Waste Limitation
- 33 • Goal 8: Sustainable Acquisition
- 34 • Goal 9: Electronic Stewardship Training
- 35 • Goal 10: Departmental Innovation

1 **3.7.2 FRAMEWORK FOR CHARACTERIZING RESOURCE IMPACTS**

2 An impact on climate or resource sustainability occurs when an activity:

- 3 • Contributes cumulatively to change in regional climate along the Northern Border;
- 4 • Causes substantial emissions of GHG;
- 5 • Uses a substantial amount of non-renewable resources; or
- 6 • Is inconsistent with existing climate authority, guidelines, or management plans.

7 Consideration of whether a CBP activity could have a major adverse impact on climate or
8 resource sustainability would largely be based on determinations made in other resource areas
9 such as emissions of greenhouse gases, impacts to utility systems, or large-scale failure to meet
10 goals in executive orders or DHS sustainability initiatives.

11 **3.7.3 ACTIVITIES WITH ENVIRONMENTAL CONSEQUENCES TO CLIMATE** 12 **CHANGE AND SUSTAINABILITY**

13 This PEIS characterizes climate and resource use across the Northern Border at a general level. It
14 also analyzes the potential of CBP's proposed actions to contribute to climate change precursors
15 and otherwise impact resource sustainability.

16 The study area includes portions of the United States within 100 miles of the border and land in
17 Canada within two miles of the border. Due to the nature of climate change, direct climate
18 impacts from CBP activities cannot be measured, would not necessarily occur proximate to the
19 border (on either side), and would by their very nature be combined with other factors and
20 sources. For example, construction projects near the border that cause increased greenhouse gas
21 (GHG) emissions could potentially contribute to climatic alterations locally, regionally,
22 nationally, or globally.

23 Activities included within CBP's proposals and alternatives that could contribute to climate
24 change precursors or decreased sustainability of resources include:

- 25 • Construction or expansion of facilities, towers, and associated infrastructure;
- 26 • Increases in various patrol types that emit GHGs; and
- 27 • Construction of access roads.

28 **3.8 LAND USE**

29 **3.8.1 CONTEXT FOR AFFECTED ENVIRONMENT**

30 The study area for land use includes areas in the United States within 100 miles of the border and
31 within 2 miles of the border in Canada. Land cover and land use classifications are defined by
32 the U.S. Geological Survey (USGS) and Natural Resources Canada (NRC).

33 Land use classifications reflect a spectrum of levels of more natural preservation versus more
34 human development or resource use-related activities at a given location. The spectrum of
35 undeveloped to more developed uses roughly progresses as undeveloped land and water areas
36 (conservation areas, wild lands, parks); military and defense (training areas); resource production

1 and extraction (forestry, mining, or agriculture); culture and recreation; commercial trade and
2 services; transportation and utilities; industrial/manufacturing; and residential. Management
3 plans, policies, and regulations specify the type and extent of land use allowable in specific
4 areas, as well as the protection designated for environmentally sensitive areas.

5 **3.8.1.1 Land Use Management**

6 Some categories of land use impacts to discussed in chapter 8, Environmental Consequences—
7 particularly impacts that could reduce the suitability of land to support its current or planned
8 use—are as likely to occur on the Canadian side of the border as on the U.S. side. For example,
9 construction projects along the border that introduce noise and light pollution as well as
10 checkpoints that stop traffic may affect land use activities on both sides of the border. On the
11 other hand, some types of impact, such as direct removal of land from existing uses for CBP-
12 related infrastructure construction, would not be relevant on the Canadian side. The analysis for
13 this PEIS evaluates impacts in Canada within a decreased area (2 miles from the border) to
14 account for only those land uses closest to border activities that may be affected by the CBP
15 activities covered here.

16 The land use analysis discusses the types of impacts that specific actions within the Proposed
17 Action and alternatives could cause. It analyzes the potential extent of such impacts given the
18 existing context for the action at the program level, which includes adjacent land use, zoning,
19 regulatory compliance, and extent of physical impacts, among others. It also includes planning
20 guidelines for avoiding, managing, mitigating, or minimizing these impacts.

21 **3.8.1.2 Recreation and Conservation Resource Areas**

22 The nature of CBP operational activities make consideration of impacts to recreational and
23 conservation areas an important part of this analysis.

24 To identify the lands most likely used for recreation in the U.S., this analysis combines the
25 following land designations, with government landowner in parentheses:

- 26 • City or county park;
- 27 • City recreation area;
- 28 • Military recreation area (U.S. Department of Defense [DOD]);
- 29 • National historical park (part of the National Park Service [NPS]);
- 30 • National park (NPS);
- 31 • National parkway (NPS);
- 32 • National recreation area (DOD, NPS, or U.S. Forest Service [USFS]);
- 33 • National trail (NPS);
- 34 • Other state parks and recreation land;
- 35 • Park;
- 36 • Recreation area (USFS);
- 37 • Recreation trail;

- 1 • Recreation trail (USFS);
- 2 • Scenic area;
- 3 • Scenic area (USFS);
- 4 • State historical park;
- 5 • State park;
- 6 • State recreation area; and
- 7 • Wild, scenic, and recreational rivers (Bureau of Land Management [BLM] or USFS.)

8 To identify the lands most likely used for recreation in Canada, this analysis considers the
9 following land owners and designations:

- 10 • Game preserve;
- 11 • National park, national park of Canada, national park and historic site, or national park
12 and reserve;
- 13 • Natural environment park;
- 14 • Nature park;
- 15 • Park;
- 16 • Provincial camping park;
- 17 • Provincial park;
- 18 • Provincial recreation area;
- 19 • Recreation area;
- 20 • Recreation site;
- 21 • Territorial park; and
- 22 • Wilderness park.

23 Together, these land types form the category of recreational land for the land use analysis. The
24 category includes more land than that referenced in section 3.17 (Recreation), which focuses
25 specifically on major Federal recreation sites.

26 Recreation also occurs on other land not specifically designated for the activity. For example,
27 wildlife viewing or hiking may be permitted on some conservation or natural areas in the study
28 area. In addition, hunting and snowmobiling may occur on public or private forested land areas.
29 Absent information on the specific distribution of recreational activities across the landscape,
30 this analysis relies on the above categories of land as a low-end estimate of the area in which
31 recreation is likely taking place.

32 To identify the lands most likely used for conservation in the U.S., this analysis combines the
33 following land designations (government landowner in parentheses, when applicable):

- 34 • City conservation easement, preserve, or natural area;

- 1 • Conservation easement (USFWS, NPS, or USFS);
- 2 • Conservation/natural area;
- 3 • County conservation easement or preserve;
- 4 • County wildlife refuge or wildlife management area;
- 5 • Ecological preserve or natural area;
- 6 • Ecological reserve (DOD);
- 7 • Habitat protection area (USFS);
- 8 • International historic site (NPS);
- 9 • Local land trust easement or land trust preserve;
- 10 • National outstanding natural area (BLM);
- 11 • National preserve or natural reserve (NPS);
- 12 • National wildlife refuge (USFWS);
- 13 • Natural area (USFS);
- 14 • Natural resource management area;
- 15 • Nature Conservancy cooperative managed property;
- 16 • Nature Conservancy fee land;
- 17 • Other NPS protected areas (NPS);
- 18 • Private conservation easement/conservation deed restriction;
- 19 • Private institution—managed for biodiversity;
- 20 • Research natural area (BLM, USFWS, or USFS);
- 21 • Research or demonstration area (USFS);
- 22 • State conservation land;
- 23 • State ecological reserve;
- 24 • State habitat area;
- 25 • State managed conservation easements;
- 26 • State natural reserve or preserve;
- 27 • State trust land;
- 28 • State wetland conservation area;
- 29 • State wilderness area;
- 30 • State wildlife management area;
- 31 • University research and demonstration land;
- 32 • Waterfowl production area (USFWS);
- 33 • Watershed conservancy land;

- 1 • Wilderness area (USFWS, NPS, or USFS);
- 2 • Wilderness study area (BLM);
- 3 • Wildlife management area (USFWS); and
- 4 • Wildlife protection area (USACE/DOD).
- 5 • To identify the lands most likely used for conservation in Canada, this analysis considers
- 6 the following landowners and designations:
- 7 • Biodiversity reserve;
- 8 • Community pasture;
- 9 • Conservancy;
- 10 • Conservancy protected area;
- 11 • Conservation area or conservation reserve;
- 12 • Ecological reserve;
- 13 • Exceptional forest ecosystem;
- 14 • Fish and Wildlife development fund lands;
- 15 • Game sanctuary;
- 16 • Grizzly bear sanctuary;
- 17 • Habitat of a threatened or vulnerable plant or wildlife species;
- 18 • Habitat protection act lands;
- 19 • Habitat protection area;
- 20 • Heritage area, heritage rangeland, or heritage rangeland natural area;
- 21 • Inlet marine, marine park, marine protected area, or national marine park of Canada;
- 22 • Migratory bird sanctuary;
- 23 • National park reserve;
- 24 • National wildlife area;
- 25 • Natural area;
- 26 • Park reserve;
- 27 • Proposed aquatic reserve;
- 28 • Proposed biodiversity reserve;
- 29 • Protected area;
- 30 • Provincial parks of historical, natural environment, nature reserve, waterway, or
- 31 wilderness class designations;
- 32 • Public reserve;
- 33 • Special management area;

- 1 • Watershed authority lands
- 2 • Waterfowl gathering area;
- 3 • Wilderness area, preserve, or reserve;
- 4 • Wildlife management area, refuge, preserve, or reserve; and
- 5 • White-tailed deer yard.

6 **3.8.1.3 CBP Responsibilities on Federal Lands**

7 When operating on Federal lands, CBP has responsibilities under several Federal land
8 management laws, including the National Environmental Policy Act, National Historic
9 Preservation Act, Wilderness Act, and Endangered Species Act. In particular, USBP must obtain
10 permission or a permit from Federal land management agencies before CBP can maintain roads
11 and install surveillance equipment on these lands. Because land management agencies are also
12 responsible for ensuring compliance with land management laws, CBP generally coordinates its
13 responsibilities under these laws with land management agencies through national and local
14 interagency agreements. The most comprehensive agreement is a 2006 Memorandum
15 Understanding (MOU) intended to guide USBP activities on Federal lands (USDHS, 2006).
16 This MOU affirmed CBP’s commitment to coordinate efforts in several key areas, including:

- 17 • Sharing information regarding border security threats on Federal lands;
- 18 • Sharing budget requests, deployment plans, and maintenance plans for infrastructure and
19 technology for use on Federal lands;
- 20 • Sharing operational plans, including deployment of staff and resources, changes in
21 staffing levels, and patrol methods that best align with Federal laws to protect the
22 environment and endangered species; and
- 23 • Allowing USBP access to Federal lands and waterways to conduct border security
24 operations, such as tracking and interdicting individuals and installing remote-detection
25 systems, consistent with applicable Federal laws.

26 In addition, the MOU states, “DHS, DOI and USDA recognize that Border Patrol access to
27 Federal lands can facilitate the rescue of cross-border violators, protect these lands from
28 environmental damage, and have a role in protecting wilderness and wildlife resources.” It
29 includes provisions that detail the conditions and process by which CBP is authorized to conduct
30 surveillance, pursuit, and apprehension using motorized vehicles in areas not previously
31 authorized for such use (wilderness areas, areas recommended for wilderness designation, or
32 wilderness study areas).

33 For projects on non-Federal lands, CBP will comply with state or local land use regulations
34 where applicable or where not specifically preempted from doing so, as long as such compliance
35 does not impede execution of its congressionally mandated mission.

36 **3.8.1.4 Consistency with Enforceable Policies of the Coastal Zone Management Act**

37 The National Oceanic and Atmospheric Administration (NOAA) Office of Ocean and Coastal
38 Resource Management administers the Coastal Zone Management Act (CZMA) of 1972, 16
39 U.S.C. §1451 et seq. with the goal of providing management of the Nation’s coastal resources,

1 including the Great Lakes, and balancing economic development with environmental
2 conservation. The CZMA outlines two national programs: the National Coastal Zone
3 Management Program (CZMP) and the National Estuarine Research Reserve System. State
4 coastal programs balance competing land and water issues in the coastal zone, while estuarine
5 reserves serve as field laboratories to provide a greater understanding of estuaries and human
6 impact on them. The CZMP does not create any new Federal regulatory authority, nor does it
7 mandate the adoption of any additional state regulations. The overall program objectives, as
8 expressed in Section 303 of the Act (16 U.S.C. § 1452), are to “preserve, protect, develop, and
9 where possible, to restore or enhance the resources of the nation’s coastal zone.”

10 Section 307 of the Act (16 U.S.C. §1456) requires that Federal agency activities be consistent to
11 the maximum extent practicable with the enforceable policies of an approved management
12 program. The consistency requirement is an important mechanism to address coastal effects,
13 ensure Federal consideration of state management programs, and avoid conflicts between states
14 and Federal agencies by fostering early consultation and coordination. The Federal regulations
15 implementing section 307 are found in 15 C.F.R. Part 930.

16 A Federal activity is any development or function performed by or for a Federal agency, and
17 requires a “Federal consistency determination.” The determination describes the activity and
18 whether that activity affects coastal resources. If the activity does affect coastal resources, a
19 statement must be provided that the activity is consistent, to the maximum extent practicable,
20 with the enforceable policies in the relevant state laws.

21 **3.8.2 FRAMEWORK FOR CHARACTERIZING RESOURCE IMPACTS**

22 This PEIS characterizes land uses across the Northern Border at a general level and analyzes
23 potential land use impacts by integrating the following land cover and land ownership
24 classifications:

- 25 • Land cover (developed, cultivated crops, forested, pasture/hay, barren, snow/ice, open
26 water);
- 27 • Public land ownership (by Federal agency, Canadian National Parks and Indian
28 Reservations, and state); and
- 29 • Designations of CBP facilities and identification of cities with populations in excess of
30 250,000 residents.

31 There is the potential for a land use impact occurs when an activity:

- 32 • Disrupts an existing or planned land use;
- 33 • Reduces the land’s suitability to support its current or planned use;
- 34 • Constitutes a fundamental change in land use;
- 35 • Is inconsistent with existing land use authority, guidelines, or management plans; and
- 36 • Is incompatible with plans and management objectives of adjacent areas under the control
37 of other entities.

3.8.3 ACTIVITIES WITH ENVIRONMENTAL CONSEQUENCES TO LAND USE

Activities considered with the proposal and alternatives of this PEIS that could affect land use are grouped into three general categories (construction, operation, and maintenance) and may include, but are not limited to, the activities below.

- Construction of
 - extensions, upgrades, or repairs of access roads, fences, drag roads, bridges, culverts, and low-water crossings;
 - new BPSs, forward operating bases (FOBs), communications towers, air and marine operational facilities;
 - Installation of communications or surveillance towers and associated infrastructure;
 - modifications/upgrades of existing POEs, BPSs, hangars, and other facilities in support of CBP operations; and
 - construction/set up of permanent traffic checkpoints.
- Operation activities including
 - increases in various patrol types when they compete with recreational value for existing use; and
 - ground surveillance/patrols and situational response activities (including motorized and nonmotorized, on-road and off-road, snowmobiles, canine and horseback patrols,
 - set up/operation of mobile traffic checkpoints,
 - use of unattended ground sensors (UGS) and other technology);
 - aircraft surveillance/patrols and situational response activities (manned and unmanned);
 - maritime surveillance/patrols and situational response activities.
 - implementation and deployment of RVSS, MSS, CASC, and OIC;
- Operations at fixed facilities:
 - routine activities at POEs including agricultural inspections;
 - continued standardizing and modernizing of Office of Air and Marine (OAM) fleet;
 - use of nonintrusive/nondestructive inspection and detection technologies;
 - operation of small-arms weapons training ranges; and
 - enforcement of I-68 Canadian Border Boat Landing Program for recreational boaters.
- Maintenance and repair of all of the above.

Land use analysis in areas proposed for site-specific projects would be carried out at a narrowly defined geospatial level, providing information on specific types of human activities (mining, silviculture, zoning-level uses) within the broad categories considered.

1 **3.9 AESTHETIC AND VISUAL RESOURCES**

2 **3.9.1 CONTEXT FOR AFFECTED ENVIRONMENT**

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
6 because of their unique qualities and the responses they inspire in humans. This section provides
7 the analytical tools to conduct a precise visual impact assessment for future site-specific projects
8 or activities; it also offers examples of the types of landscapes that exist along the border. It does
9 not characterize every potential vista or visual landscape along the entire Northern Border, but
10 provides guidelines for minimizing, mitigating, or avoiding such impacts. This section:

- 11 • Characterizes the visual landscape types that could be affected by CBP's No Action
12 Alternative and action alternatives;
- 13 • Describes the types of landscapes most sensitive to visual impacts (wilderness areas,
14 recreation areas, etc.); and
- 15 • Characterizes various viewer/user groups based on the context in which they could
16 experience visual impacts.

17 **3.9.1.1 Affected Landscapes**

18 Four broadly defined landscapes occur within the potential settings of the proposed project:
19 natural, rural, urban, and industrial (USDOT, 1999), which are briefly described below.

20 **Natural Landscapes**

21 Natural landscapes are those in which natural landforms and vegetation predominate, and signs
22 of human activity are not apparent (USDOT, 1999). Coastlines, water bodies, mountains, and
23 areas of varied relief are the most striking and tend to be the most conspicuous. Some natural
24 landscapes are designated specifically for outdoor recreation. The Bureau of Land Management
25 (BLM), U.S. Forest Service (USFS), U.S. Fish and Wildlife (USFWS), National Park Service
26 (NPS), and state and local parks own most of these recreational lands.

27 **Rural Landscapes**

28 Rural landscapes include features such as croplands, orchards, fields, fences, and farm-related
29 structures (USDOT, 1999). While border POEs and BP stations along the Northern Border tend
30 to be in rural, less densely populated areas well outside of major cities, the majority of the
31 population in the study area lives in denser larger population centers. Agricultural areas are
32 predominantly flat or gently rolling hills; these landscapes tend to be restricted to valleys and
33 lowlands and are not typically found at higher elevations or in areas with complex topography.
34 Native vegetation is often found in confined areas where land is steep or soils are unproductive.
35 Views may extend for some distance, with vertical elements typically consisting of relatively low
36 farm buildings, silos, water towers, utility poles, fencing, and trees. Distinct geometric patterns,
37 such as rectangular or circular fields and property boundaries divided by section lines, may
38 characterize the landscape. Towns are small and have relatively low skylines. In general, the
39 few structures in such areas can be of aesthetic interest. Agriculture greatly influences the
40 landscape. Land use groups can sometimes categorize different agriculture practices. Other

1 rural areas include forests or desert, which are influenced by roadways, the presence of small
2 towns, and land-clearing activities, such as timber harvesting, strip mining, ski areas, and large
3 reservoirs.

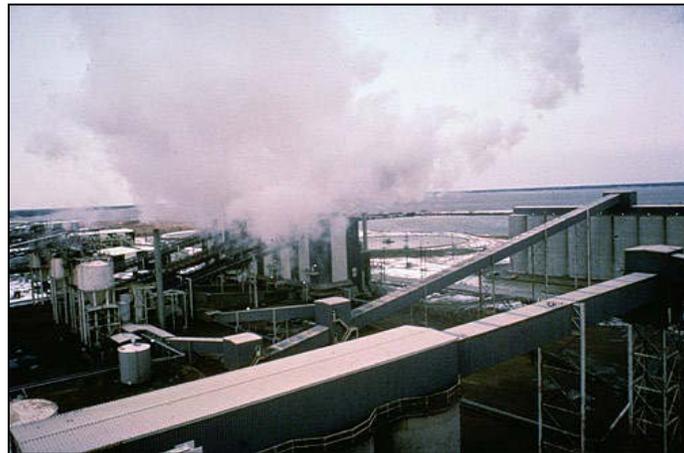
4 **Urban Landscapes**

5 Urban landscapes represent only a fraction of the Nation’s entire land area, but are the dominant
6 visual environment of roughly three-quarters of the American population (USDOT, 1999).
7 Residential and suburban areas represent much of the urban landscape, with centralized primary
8 commercial centers and business districts defining the most dominant visual characteristics. The
9 scale of development in major urban areas is large and dominated by structures, highways,
10 infrastructure, and trees. Urban landscapes can absorb a great degree of visual change because
11 they already contain commanding visual features. Most urban landscapes are clustered around
12 areas of usable natural resources, such as waterways.

13 **Industrial Landscapes**

14 Heavy and light industrial landscapes tend to be scattered, situated in specific zones or districts
15 such as along roads and waterfronts or near airports. The relative presence of industrial
16 landscapes varies among the regions and states along the Northern Border. Such landscapes can
17 absorb the greatest degree of visual change, because their existing dominant visual features give
18 them a generally low visual quality (“C” category). These landscapes are usually classified as
19 Visual Resource Class IV in which major changes to the visual environment can occur without
20 major impacts to the visual environment or viewer groups.

21 **Industrial Plant on River**



22 Source: (USDOI, 2008).
23

24 **3.9.1.2 Areas with High Visual Sensitivity**

25 Visual sensitivity refers to the level of viewer awareness and the value placed on a particular
26 scene. Some areas have a high degree of visual sensitivity, usually due to their unique visual
27 features or their use by recreational users. The BLM considers these areas as Visual Resource
28 Class I in terms of scenic quality. Typically, highly sensitive areas are significant to the general
29 public. In these areas, most modifications to the visual environment would result in a major
30 significantly adverse impact and any visual impact should be avoided or mitigated if possible.
31 Natural areas with Federal or state protection often fall into this category. Recreational users of

1 public lands have expressed concern about visual impacts stemming from CBP activities
2 (USDHS, 2010a). Among the Northern Border regions, the West of the Rockies Region has a
3 greater amount of public land sensitive to visual impacts than do the other regions.

4 The following is a list of managed land types with high visual sensitivity:

- 5 • National Landscape Conservation System lands;
- 6 • Threatened and endangered species designated critical habitat;
- 7 • Areas of critical environmental concern;
- 8 • Wildlife refuges;
- 9 • Wild and scenic rivers;
- 10 • Wilderness areas;
- 11 • Wildlife management areas;
- 12 • Special recreation management areas;
- 13 • Areas allocated in existing land use plans to maintain wilderness characteristics or to
14 have right-of-way avoidance or exclusion;
- 15 • Wildlife movement corridors;
- 16 • Areas for which an agency or organization is committed to take certain actions with
17 respect to sensitive species habitat;
- 18 • Backcountry byways;
- 19 • Areas of known tribal concerns; and
- 20 • Areas with a known high density of cultural sites.

21 **3.9.1.3 Affected User Groups**

22 Specific viewer groups within the study area can gauge viewer sensitivity and assure the
23 selection of appropriate representative viewpoints during the visual impact evaluation. While
24 POEs and BP stations along the American-Canadian border are generally in rural, less densely
25 populated areas outside of major metropolitan areas, most of the population in the study area
26 lives in larger population centers. The following four categories of viewer/user groups were
27 identified within the study area: commuters and through travelers, local residents, business
28 employees, and recreational users.

29 **Commuters and Through Travelers**

30 These viewers pass through the study area on a regular basis in automobiles on their way to work
31 or other destinations. On most roads within the study area, the views are from street level.
32 Typically, drivers have limited views of CBP infrastructure and activity, except at locations
33 where CBP actions cross the road. Commuters and through travelers are typically moving, have
34 a relatively narrow visual field due to roadside vegetation or structures, and generally are
35 preoccupied with traffic and navigating the roadways. For these reasons, commuters and
36 through travelers' perception of (and sensitivity to) visual quality and changes in the visual

1 environment are likely to remain relatively low. Passengers in moving vehicles, however, have
2 greater opportunities for off-road views of a project than do drivers.

3 **Local Residents**

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

11 **Business Employees**

12 These individuals work at local businesses, primarily in the commercial portions of the study
13 area. Business employees will generally experience limited views of the actions being
14 considered in the alternatives, except at road crossings while driving to work or where CBP
15 infrastructure and activity occurs near their place of employment. Most business employees
16 work in one- or two-story structures that may or may not have outside views. Those with views
17 often look out on numerous, often varied, built features, and the employees within are focused on
18 their jobs. For these reasons, business employees are not likely to be sensitive to landscape
19 changes.

20 **Recreational Users**

21 This group generally includes local residents and tourists involved in outdoor recreation at local
22 parks, recreational facilities, and natural areas: hikers, bicyclists, joggers, and those involved in
23 more passive activities (e.g., picnicking, walking, and nature observation). Scenery and visual
24 quality may or may not be an important part of the recreational experience for these viewers. In
25 general, recreational enjoyment is almost always enhanced by a setting that has not been visually
26 degraded. For some recreational users, scenery may constitute a very important part of their
27 experience, and their activities may afford continuous views of landscape features over relatively
28 long periods of time. Such viewers are likely to have a high appreciation for visual quality and
29 high sensitivity to visual change.

30 **3.9.2 FRAMEWORK FOR CHARACTERIZING RESOURCE IMPACTS**

31 **3.9.2.1 Analysis Methodology**

32 Aesthetic judgment, especially related to landscape views, is often subjective. The U.S. Bureau
33 of Land Management (BLM) has developed, refined, and implemented visual analysis and
34 management systems that provide tools for assessing aesthetic qualities of the landscape in
35 objective terms. The Visual Resource Management (VRM) system developed by BLM over 30
36 years ago defines the visual sensitivity of an area and the potential effect on a visual resource
37 (See Appendix G for more detailed information). Visual assessment of landscape settings using
38 these tools establishes identifiable, consistent qualities that can be described and measured. A
39 summary of the steps in the BLM VRM system that inventories scenic values follows:

- 1 • Step 1—Determine the scenic quality, sensitivity level, and distance zone delineation for
2 the project site;
- 3 • Step 2—Assign the project site a visual resource class (I – IV) based on the attributes
4 determined in step 1, which are—
 - 5 ○ Class I: Class I is assigned to all special areas where the current management
6 situations require maintenance of a natural environment that is essentially unaltered
7 by man.
 - 8 ○ Classes II, III, and IV: These classes are assigned based on combinations of scenic
9 quality, sensitivity levels, and distance zones.
- 10 • Step 3—Determine the type of impact (beneficial or adverse) and its magnitude
11 (resource-specific impact assessments).

12 **3.9.2.2 Impact Definition**

13 Aesthetic impact occurs when there is a detrimental effect on the perceived character of a place
14 or structure. A major aesthetic impact is one that may diminish public enjoyment and
15 appreciation of an inventoried resource or that impairs the character or quality of such a place.
16 Using the concepts noted, this analytic approach assumes that a project or activity would create
17 an adverse visual impact if it:

- 18 • Has a substantial adverse effect on a scenic vista (example: constructing towers in a
19 wilderness viewshed);
- 20 • Substantially damages scenic resources, including, but not limited to, trees, rock
21 outcroppings, and historic buildings (e.g., creating cleared right-of-way in scenic areas);
- 22 • Substantially degrades the existing visual character or quality of the site and its
23 surroundings (e.g., constructing a FOB in a protected forest);
- 24 • Creates a new source of substantial light or glare (e.g., locating new or substantially
25 upgraded facilities in an area that previously did not have a significant amount of light or
26 glare).

27 Impacts of project activities will be based on their:

- 28 • Effects on scenic resources;
- 29 • Effects on views;
- 30 • Modifications of the visual setting;
- 31 • Level of contrast of the project to the setting and the dominance of change within the
32 setting; and
- 33 • Consistency with Federal and state land management standards and guidelines.

34 **3.9.2.3 Visual Feature Considerations**

35 Certain characteristics of both a feature and the surrounding area can affect the visual impact of
36 the feature. The characteristics evaluated here are magnitude, distance, and competing interests,
37 and their definitions and impacts are as follows:

- 1 • The magnitude of a visual impact results from the dominance of a feature and its
2 interpretation by the viewer, or how much attention the feature attracts. The landscape
3 type and scenic quality, viewer group, and distance between potential viewers and the
4 feature or action jointly determine the impact level.
- 5 • Distance affects the degree of contrast an object has with the surrounding landscape. An
6 object loses much of its identity with greater distance. Irregular skylines are more
7 complex and tend to mask the appearance of an added element, such as a tower.
- 8 • A competing interest exists when a feature of strong visual interest is included within the
9 view of a proposed action. Such features commonly include farm buildings, dominant
10 mountain crests, and lakes. Competing interests are not necessarily directly adjacent to
11 visual features but depend on the viewer's angle. The visual impact of any single feature
12 or action declines if the landscape contains many competing interests or irregular
13 skylines, such as urban, industrial, or mountainous natural landscapes.

14 **These photos provide a general illustration of how competing interest and structure can**
15 **decrease the visual impact of a tower (left) or increase the visual impact by drawing**
16 **attention (right)**



17
18 Source: (Arizona Republic, 2007; Rapp News, 2010).

19 **3.9.3 ACTIVITIES WITH ENVIRONMENTAL CONSEQUENCES TO AESTHETIC** 20 **AND VISUAL RESOURCES**

21 Examples of activities that could create visual impacts include:

- 22 • Constructing, upgrading, renovating, or relocating facilities that would degrade a
23 wilderness viewshed or introduce new sources of light and glare;
- 24 • Creating cleared rights-of-way (ROW) in scenic areas for creation or expansion of
25 infrastructure; and
- 26 • Constructing or installing technology or infrastructure that would degrade protected
27 forested cover within a viewshed.

1 **3.10 SOCIOECONOMIC RESOURCES**

2 **3.10.1 CONTEXT FOR AFFECTED ENVIRONMENT**

3 The study area includes areas in the United States and Canada within 100 miles of the
4 border. Some socioeconomic impacts are as likely on the Canadian side of the border as on the
5 U.S. side. For example, time delays at border crossings may affect populations and businesses
6 on both sides of the line. In addition, much of the economic activity in U.S. border regions
7 involves cross-border movement of people and goods; therefore, the PEIS considers the impacts
8 of CBP activities on Canadian socioeconomic resources as well as on those of the United
9 States. The impacts of CBP actions on communities and regional economies in Canada are most
10 likely felt closest to the border. However, since it is not possible to delineate precisely how far
11 beyond the border an impact may extend, this report provides information on the area up to 100
12 miles north of the border, mirroring the study area in the United States. This definition of the
13 study area does not suggest that impacts are equivalent in Canada and the United States.

14 Two approaches characterize the relevant socioeconomic resources across each border region:

- 15 • A series of tables and maps with accompanying text describing relevant statistics from
16 the U.S. and Canadian censuses and publicly available information on regional
17 economies with the following data for each border region:
 - 18 ○ Population level and distribution;
 - 19 ○ Recent population growth or decline;
 - 20 ○ POEs and BP stations within population centers (defined as metropolitan statistical
21 areas (MSAs) in the U.S. and census metropolitan areas in Canada);
 - 22 ○ Median household income;
 - 23 ○ Poverty rates;
 - 24 ○ Unemployment; and
 - 25 ○ Median property values.

26 The tables and accompanying text present these data for areas (i.e., census tracts or counties) that
27 fall within the border region as well as the broader state/province and nation for comparison.

28 Demographic and economic profiles of a subset of POEs within each region. These sites include
29 the major POEs (“major” is defined by annual vehicle crossings), as well as POEs with
30 distinctive characteristics (e.g., sites that include ferry crossings or represent a significant level of
31 trade value). These profiles mix qualitative and quantitative information, including:

- 32 • Total border crossings;
- 33 • Trade value of imports and exports;
- 34 • Key industries operating within the POE counties; and
- 35 • Key activities constituting POE traffic.

1 **3.10.2 FRAMEWORK FOR CHARACTERIZING RESOURCES IMPACTS**

2 A socioeconomic impact may be caused by an activity that:

- 3 • Disrupts the flow of goods, services, and people across the border;
- 4 • Disrupts the social fabric of border communities;
- 5 • Changes regional income or employment levels, directly or indirectly;
- 6 • Affects population levels or population distribution;
- 7 • Changes a population’s demographics;
- 8 • Limits the level or quality of regional economic activity, for example, by reducing the
- 9 opportunity for regional development or degrading land used for recreation; or
- 10 • Reduces property values or otherwise affects housing markets.

11 **3.10.3 ACTIVITIES WITH ENVIRONMENTAL CONSEQUENCES TO**
12 **SOCIOECONOMIC RESOURCES**

13 CBP activities that could result in one or more types of socioeconomic impact include:

- 14 • Construction or expansion of facilities (POEs, BP stations, etc.);
- 15 • Installation of communication or surveillance towers and associated infrastructure;
- 16 • Construction of new traffic checkpoints;
- 17 • Installation of pedestrian or vehicle fences or barriers;
- 18 • Construction of access roads through undisturbed areas; and
- 19 • Increases in various patrol types.

20 **3.11 CULTURAL AND PALEONTOLOGICAL RESOURCES**

21 **3.11.1 CONTEXT FOR AFFECTED ENVIRONMENT**

22 For each state along the Northern Border, a document and literature search was conducted to
23 develop prehistoric (precontact) and historic contexts. Notable resources within the 100-mile
24 corridor are presented on the macro-level without enumerating specific resources, sites, or listed
25 properties. Information about the potential location of Native American cultural resources,
26 sacred sites, and traditional cultural properties (TCP) is based on the geographic location of
27 Native American groups, both historically and in the present, and an overview of the current
28 understanding of paleontological site probability in the West of the Rockies (WOR) Region.
29 Appendix H provides information on the cultural context and history of CBP’s operational area
30 along the Northern Border, which offers a basis for the relevant sections that follow.

31 **3.11.2 FRAMEWORK FOR CHARACTERIZING RESOURCE IMPACTS**

32 Impacts to cultural and paleontological resources include demolition of structures listed on or
33 eligible for listing on the National Register of Historic Places, introduction of visual intrusions to
34 historic landscapes, and complete or partial destruction of archaeological sites, TCPs, or
35 paleontological deposits. Impacts to historic buildings, structures, objects, or collections of

1 above-ground resources can range from negligible to major, depending on whether the proposed
2 design affects the historical integrity or setting of the historic property. This analysis defines
3 impacts as negligible, minor adverse, moderate adverse, major or beneficial.

4 Impacts on cultural resources could be significant if a proposed undertaking directly (physically)
5 affects properties listed, or eligible for listing, in the National Register of Historic Places. The
6 level of impact could range from negligible to major depending on the type of resource
7 identified. Impacts on above-ground resources could also range from negligible to major
8 depending on whether a proposed undertaking affects the visual setting or view shed of a historic
9 property.

10 **3.11.3 ACTIVITIES WITH ENVIRONMENTAL CONSEQUENCES TO CULTURAL** 11 **AND PALEONTOLOGICAL RESOURCES**

12 CBP actions that could potentially affect cultural or paleontological resources include facility
13 expansion, new construction, installation of detection and communication towers, as well as
14 destructive activities such as tunnel demolition. The specific components of the action
15 alternatives with the greatest potential for impacts on cultural and paleontological resources that
16 could range from minor to major adverse in some cases or beneficial in others include:

17 Construction, modification, or repair of POEs, USBP stations, OAM bases, training facilities, or
18 permanent traffic checkpoint facilities;

- 19 • Construction of roads, fences, barriers, and related infrastructure;
- 20 • Installation of remote video surveillance systems (RVSS);
- 21 • Installation of detection and communication towers;
- 22 • Remediation of illegal tunnels; and
- 23 • Installation of unattended ground sensors.

24 In general, CBP's day-to-day operations do not have a direct physical impact on cultural or
25 paleontological resources or produce a permanent visual change in the view shed of cultural
26 resources. CBP's day-to-day operations activities include but are not limited to processing of
27 visitors, cargo inspection, canine enforcement teams, fraud prevention, aerial surveillance, line-
28 watch operations, ground patrols, and aircraft, watercraft and vehicle maintenance.

29 **3.12 ENVIRONMENTAL JUSTICE AND PROTECTION OF CHILDREN**

30 **3.12.1 CONTEXT FOR AFFECTED ENVIRONMENT**

31 **3.12.1.1 Definitions of Affected Populations**

32 For this assessment, the following definitions apply to the relevant environmental justice
33 populations:

- 34 • **Minority Populations:** To assess environmental justice under NEPA, the CEQ defines a
35 minority population as one in which the percentage of minorities exceeds 50 percent or is
36 meaningfully greater than the minority population percentage in the general population

1 (or some other appropriate unit of geographic analysis) (CEQ, 1997). Individuals are
2 categorized as minority if they identify themselves as belonging to any of the following
3 protected groups: Hispanic (may include individuals of any other category); Black or
4 African American (not of Hispanic origin); American Indian or Alaska Native; Asian,
5 Native Hawaiian, or Other Pacific Islander. If individuals select multiple categories to
6 reflect their ethnic or racial origins, they are considered minority if any one of the
7 categories is among the recognized minority groups. For the Canadian portions of the
8 study area, Aboriginal Peoples are also included in the minority category. Recognized by
9 the Canadian Constitution, Aboriginal Peoples are descendants of the original inhabitants
10 of North America and include Indians (commonly designated First Nations), Métis, and
11 Inuit populations. According to the 2006 Census of Canada, more than one million
12 people identify themselves as Aboriginal Peoples (INAC, 2010).

- 13 • **Low-income Populations:** Identification of low-income populations in an affected area
14 is based on the statistical poverty thresholds established by the U.S. Bureau of the Census
15 population reports on income and poverty. According to the CEQ (1997), a community
16 is either a group of individuals living near one another, or a set of individuals (such as
17 migrant workers or Native Americans) irrespective of geographic proximity; either group
18 may experience common conditions of environmental exposure or effect. For the
19 Canadian portions of the study area, a comparable rate for the poverty threshold is
20 defined on the basis of the percentage of “low-income” persons in a geographically
21 defined area or a set of individuals.

22 The Census determination of the poverty threshold is based on a comparison of the
23 person’s total family income with the poverty threshold appropriate for that person’s
24 family size and composition. If the total family income is less than the appropriate
25 threshold, then the individual and all family members are considered below the poverty
26 line. For individuals who do not live with family members, their personal income is
27 compared with the appropriate threshold (USDOD, 2003).

- 28 • **Children:** As defined by the U.S. Census Bureau, children are unmarried individuals
29 under the age of 18 years (USDOD, 2003). This category may be further subdivided to
30 include especially susceptible populations, including children under 5 years of age and
31 children 5 to 14 years of age.

32 **3.12.1.2 Study Area and Analysis Methods**

33 The study area for evaluating environmental justice effects and environmental health and safety
34 risks to children includes those border communities in or overlapping the geographic area within
35 100 miles of the U.S.-Canada border. The administrative boundaries of U.S. counties define the
36 border communities. For the study area in Canada, Canadian census divisions define the border
37 communities. For this assessment, the study area for environmental justice impacts includes the
38 entire set of border communities on either side of the international line. The study area is further
39 subdivided into four separate regions, with each described separately.

40 Analysis of environmental justice impacts begins with identification of minority and low-income
41 populations as a percentage of the general populations for the study areas in each border state.
42 The description of the affected environment is presented as a series of comparison tables
43 showing relevant minority and income statistics for these areas. Age distributions for the general

1 population of each study area and its respective state are presented in detail for the entire study
2 area for persons under 18 years of age in the United States and for persons under 20 years of age
3 in Canada. Specific areas where minority or low-income populations represent a high percentage
4 of the affected population are noted.

5 The analysis then considers potential impacts to all resource areas associated with the specific
6 actions proposed under all alternatives. Environmental justice effects would occur if a given
7 activity results in potentially high and adverse impacts on the natural or human environment that
8 disproportionately affect minority communities (including Native Americans or Aboriginal
9 Peoples in Canada) and low-income populations or if it created a disproportionately high and
10 adverse risk to human health or safety for children in the resident populations.

11 **3.12.2 FRAMEWORK FOR CHARACTERIZING RESOURCE IMPACTS**

12 Examining potential consequences of the proposed action for environmental justice requires
13 three main components:

- 14 • A demographic assessment of the affected community to identify the presence of
15 minority or low-income populations potentially affected;
- 16 • An assessment of all identified potential impacts to determine if any cause significant
17 adverse impact to the affected environment; and
- 18 • An integrated assessment to determine whether any disproportionately high and adverse
19 impacts exist for minority and low-income groups in the study area.

20 For an environmental justice impact to occur, the human health or environmental consequences
21 must be adverse, high, and disproportionate. The Council on Environmental Quality (CEQ)
22 (CEQ, 1997) guidance for establishing disproportionately high and adverse effects includes the
23 following criteria:

- 24 • For human health effects, assessing whether:
 - 25 ○ The effects—including bodily impairment, infirmity, illness, or death—are significant
26 or above generally accepted norms;
 - 27 ○ The risk or rate of hazard exposure by a minority population, low-income population,
28 or Native American tribe to an environmental hazard is significant and appreciably
29 exceeds, or is likely to appreciably exceed, the risk or rate to the general population
30 or another appropriate comparison group; and
 - 31 ○ The effects occur in a minority population, low-income population, or Native
32 American tribe affected by cumulative or multiple adverse exposures to
33 environmental hazards.
- 34 • For environmental effects, assessing whether:
 - 35 ○ There is or will be an impact on the natural or physical environment—ecological,
36 cultural, human health, economic, or social—that significantly and adversely affects a
37 minority population, low-income population, or Native American tribe when that
38 impact worsens the effects on the natural or physical environment;

- 1 ○ The environmental effects are significant and are, or may be, having an adverse
2 impact on minority populations, low-income populations, or Native American tribes
3 that appreciably exceeds, or is likely to appreciably exceed, those on the general
4 population or another appropriate comparison group; and
- 5 ○ The environmental effects occur, or would occur, in a minority population, low-
6 income population, or Native American tribe affected by cumulative or multiple
7 adverse exposures to environmental hazards.

8 If a particular action is not expected to affect the general population at all, or its potential effects
9 are considered low for all populations, it is eliminated from further consideration as a part of this
10 analysis. If high and adverse impacts to the general population are identified for a particular
11 resource area, or if a given resource area is likely to have a disproportionately high potential to
12 affect minority or low-income communities despite minor impacts on the larger population, the
13 potential for impact is based on the proximity of the minority or low-income community to the
14 impact source.

15 This analysis does not attempt to predict environmental justice impacts for a given CBP activity
16 or for the program as a whole. Rather, it addresses the types of impacts that relevant actions
17 could produce on minority and low-income communities. It addresses the potential severity of
18 these impacts in the context of site-specific circumstances. Environmental justice analysis for
19 actions included here is necessarily site-specific; that is, the direct impacts of these actions affect
20 resident populations at the specific locations where the actions occur and not at the larger
21 regional or national level. As a result, evaluating individual actions on a site-specific basis
22 through tiered EIS and EA processes proves more effective.

23 Major issues related to the actions proposed under the alternatives in this PEIS include those that
24 might differentially affect minority and low-income populations or children, including potential
25 risks to human health or safety near the proposed action. Effects from any of the alternatives
26 may also include the potential for these populations to become displaced, suffer a loss of
27 employment or income, or otherwise experience adverse social effects.

28 **3.12.3 ACTIVITIES WITH ENVIRONMENTAL CONSEQUENCES TO** 29 **ENVIRONMENTAL JUSTICE AND PROTECTION OF CHILDREN**

- 30 • Types of CBP actions that could produce environmental justice impacts include:
 - 31 17. Expansion of POEs, USBP stations, OAM bases, and training facilities;
 - 32 18. Construction of new POEs, BP stations, aircraft operations, or other facilities in or close
33 to minority or low-income communities or tribal lands;
 - 34 19. Upgrades, expansions, or renovations of existing facilities in minority or low-income
35 communities;
 - 36 20. Installation of communications or surveillance towers and associated infrastructure; and
 - 37 21. Construction of infrastructure in or passing through minority or low-income
38 communities.

1 **3.13 HUMAN HEALTH AND SAFETY**

2 **3.13.1 CONTEXT FOR AFFECTED ENVIRONMENT**

3 The analysis of the affected environment includes a broad overview of all CBP activities that
4 could impact human health and safety. Information is provided on the types of training for all
5 CBP agents, covering land and water patrols, interdictions, inspections, weapons handling,
6 contraband seizures, and emergency preparedness. The analysis also includes safety and
7 environmental compliance measures used by CBP firing ranges. It considers CBP techniques
8 and safety procedures regarding canine and horse training, the use of radiation technologies by
9 CBP, and operation of EMF-emitting communications facilities and NII technology relating to
10 human health and safety. Regulatory requirements related to human health and safety (such as
11 adherence to OSHA standards) are also covered.

12 The PEIS assesses potential impacts to human health and safety from ongoing and future CBP
13 activities. At the programmatic level, the discussion is necessarily broad, with impacts based on
14 where specific activities take place and which technologies are used. Both beneficial and
15 adverse impacts are discussed (e.g., prevention of terrorist attacks from CBP patrol/interdiction
16 would obviously be a significant beneficial impact).

17 **3.13.2 FRAMEWORK FOR CHARACTERIZING RESOURCE IMPACTS**

18 The types of adverse impacts to human health and safety from CBP activities are:

- 19 • Death;
- 20 • Injury;
- 21 • Illness;
- 22 • Disability;
- 23 • Increased risk of exposure to a source of illness; and
- 24 • Increased risk of exposure to unknown health risk factors.

25 Health and safety impacts from activities may be:

- 26 • Long-term and chronic;
- 27 • Acute and severe;
- 28 • Unforeseen or unknown; and/or
- 29 • Unable to be avoided, remedied, cured, or alleviated to the point of manageability.

30 **3.13.3 ACTIVITIES WITH ENVIRONMENTAL CONSEQUENCES TO HUMAN**
31 **HEALTH AND SAFETY**

32 The description of human health and safety risks and impacts along the Northern Border is
33 driven by the types of impacts CBP's actions have produced in the past and have the potential to
34 produce in the future. The significance of an impact to human health and safety depends on the
35 type of and frequency of an activity along with the incidence of accidents or exposures
36 occurring. Information is limited to the previous ten years for all CBP activities. This

1 information is used to extrapolate the frequency and types of accident and exposure incidence
2 that could occur from ongoing and future CBP activities. The use of weaponry, vehicles,
3 checkpoints, horses, radiation technologies, construction of EMF-emitting communications
4 infrastructure, and other pursuits present different types of human health and safety
5 considerations and different levels of risks to CBP agents and officers versus those to the general
6 public.

7 **3.14 HAZARDOUS AND OTHER** 8 **REGULATED MATERIALS**

9 **3.14.1 CONTEXT FOR AFFECTED** 10 **ENVIRONMENT**

11 Hazardous materials are materials that are capable of
12 posing an unreasonable risk to health, safety, and
13 prosperity. Hazardous materials can be classified into
14 roughly three categories:

- 15 • Hazardous or regulated substances (HRS);
- 16 • Hazardous or regulated waste (HRW); and
- 17 • Special hazards.

18 The resources described in this section are categorized as follows:

- 19 • Hazardous materials include cleaners and solvents; petroleum, oils, and lubricants; fuels;
20 and other hazardous materials; and,
- 21 • Hazardous wastes include used cleaners and solvents; used petroleum, oils, and
22 lubricants; fuel wastes; and other hazardous wastes.

23 This section does not characterize every potential hazardous material or hazardous waste within
24 the entire Northern Border. It provides the analytical tools to conduct a specific impact
25 assessment for future site-specific projects or activities, and gives examples of the types of
26 hazardous materials and hazardous wastes that exist along the border. It analyzes how, in which
27 settings, and to what extent the various CBP alternative actions might create impacts related to
28 hazardous materials and hazardous wastes, and provides guidelines, as necessary, for
29 minimizing, mitigating, or avoiding such impacts.

30 **3.14.1.1 Hazardous Substances**

31 Any substances that are considered severely harmful to human health or the environment may be
32 classified as “hazardous.” Hazardous substances take many forms. Many are commonly used
33 substances that are harmless in their normal uses but are quite dangerous when released. They
34 are defined in terms of those substances either specifically designated as hazardous under the
35 Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA),
36 commonly known as the Superfund Law, or those substances identified under other laws
37 (USEPA, 2011a). A great deal is known about hazardous substances and their effects. This

Code of Federal Regulation Hazardous Materials Definition

Hazardous materials are defined by 49 CFR 171.8 as “hazardous substances, hazardous wastes, marine pollutants, elevated temperature materials, materials designated as hazardous in 49 CFR 172.101 Hazardous Materials Table, and materials that meet the defining criteria for hazard classes and divisions in 49 CFR 173.”

1 information helps responders act quickly and safely to reduce the risks from emergency
2 situations (USEPA, 2011b).

3 Hazardous substances considered in this study fall in the categories: cleaning solvents;
4 petroleum, fuel, oils, and lubricants; munitions, munitions constituents, and explosive materials;
5 and other hazardous substances.

6 **Cleaning Solvents**

7 Cleaning solvents are fabricated chemicals used in cleaning products, primarily for the industrial
8 community. Cleaning solvents can be found in degreasers, carpet-cleaning solutions, dry-
9 cleaning products, soaps, polishes, and lubricants.

10 **Petroleum, Fuel, Oils, and Lubricants**

11 Petroleum products are used throughout the study area for various functions, including aircraft
12 maintenance and aircraft ground equipment maintenance. Fuels (e.g., jet fuel, diesel, and
13 gasoline) are stored in large storage tanks. Oil and fuel spills can result from leaking vehicles,
14 aircraft, or storage tanks (USDHS, 2008a).

15 Motor oil contains inherent toxic chemical and additive properties that are hazardous to humans,
16 plants, and animals. In addition, used motor oil picks up additional toxic elements from vehicle
17 engines. Prompt attention is given by CBP to vehicle oil leaks as a means of preventing
18 environmental motor oil contamination. If a leak or spill occurs, it is cleaned up prior to a rain
19 event to avoid dispersion. Spills of hazardous wastes or materials, including any affected soil or
20 water, should be stored as hazardous waste and disposed of properly.

21 **Munitions, Munitions Constituents and Explosive Materials**

22 As a law enforcement component, CBP agents and officers use and train with a variety of small-
23 caliber weapons and ammunition. During the course of daily inspection and interdiction
24 activities, caches of ammunition and explosive materials are identified, confiscated, and
25 destroyed or stored as evidence. The type of material encountered may be likened to munitions
26 and explosives of concern (MEC) classified in the military as discarded military munitions
27 (DMM), unexploded ordnances (UXO), or munitions constituents (MC). This includes
28 ammunition products and components such as confined gas, liquid, and solid propellants;
29 explosives; pyrotechnics; chemical and riot control agents; smokes and incendiaries; bulk
30 explosives; rockets; bombs; warheads; mortar rounds; and a variety of other military grade
31 munitions, demolition charges, and devices and components thereof.

32 **Other Hazardous Substances**

33 A number of common construction materials are considered to be hazardous substances when
34 spilled or leaked. These materials include concrete curing compounds, asphalt products, paints,
35 stains, wood preservatives, roofing tar, and palliatives.

36 **3.14.1.2 Hazardous Waste**

37 Hazardous wastes are defined by the Resource Conservation and Recovery Act (RCRA) as a
38 solid waste, or combination of solid wastes, that because of its quantity, concentration, or
39 physical, chemical, or infectious characteristics may:

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

5 Hazardous wastes fall into two categories: characteristic wastes and listed wastes. Characteristic
6 hazardous wastes are materials that are known or tested to exhibit a hazardous trait such as
7 ignitability (i.e., flammable), reactivity, corrosiveness, and toxicity. Listed hazardous wastes are
8 materials specifically listed by the EPA or a state regulation as a hazardous waste. Hazardous
9 wastes listed by EPA also fall into two categories:

- 10 • Process wastes from general activities (F-listed) and from specific industrial processes
11 (K-listed) and
- 12 • Unused or off-specification chemicals, container residues, and spill cleanup residues of
13 acute hazardous waste chemicals (P-listed) and other chemicals (U-listed).

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

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

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

28 **Used Cleaners and Solvents**

29 Unless testing proves that it can be handled otherwise, spent solvents are managed as a
30 hazardous waste. The waste solvents are stored in containers that are in good condition and are
31 made of or lined with materials that are compatible with the stored wastes. The container must
32 be closed during storage, except when it is necessary to add or remove wastes. The container
33 also cannot be opened, handled, or stored in a manner that may cause it to rupture or leak.
34 Containers holding hazardous waste must be clearly marked with the words "hazardous waste"
35 and the date on which accumulation of the waste began (ARA, 2010).

36 **Used Petroleum, Fuel, Oils, and Lubricants**

37 Petroleum waste-generating operations include aircraft maintenance, vehicle maintenance, and
38 civil engineering. These hazardous wastes include varying quantities of spent solvents, fuels,
39 stripping chemicals, paint, oils, and batteries. These wastes are tracked to ensure proper

1 identification, storage, transportation, and disposal, as well as implementation of waste
2 minimization programs (USDHS, 2008a).

3 **3.14.1.3 Special Hazards**

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

12 **Asbestos-Containing Material (ACM)**

13 Due to the age of some of the Border Patrol stations located within the study area, the potential
14 for the facilities to contain asbestos exists. Asbestos is typically found in wall and ceiling
15 coverings, floor tiles, exterior siding, and thermal system insulation. At one time, asbestos was
16 added to paint to provide decorative texture (ECY, 2010).

17 **Polychlorinated Biphenyls (PCBs)**

18 PCBs were domestically manufactured from 1929 until their manufacture was banned in 1979.
19 PCBs have a range of toxicity and vary in consistency from thin, light-colored liquids to yellow
20 or black waxy solids. Due to their non-flammability, chemical stability, high boiling point, and
21 electrical insulating properties; PCBs were used in hundreds of industrial and commercial
22 applications including electrical, heat transfer, and hydraulic equipment; as plasticizers in paints,
23 plastics, and rubber products; in pigments, dyes, and carbonless copy paper; and in many other
24 industrial applications (USEPA, 2010a).

25 Other products that may contain PCBs include:

- 26 • Transformers and capacitors;
- 27 • Other electrical equipment including voltage regulators, switches, reclosers, bushings,
28 and electromagnets;
- 29 • Oil used in motors and hydraulic systems;
- 30 • Old electrical devices or appliances containing PCB capacitors;
- 31 • Fluorescent light ballasts;
- 32 • Cable insulation;
- 33 • Thermal insulation material, including fiberglass, felt, foam, and cork;
- 34 • Adhesives and tapes;
- 35 • Oil-based paint;
- 36 • Caulking;
- 37 • Plastics;

- 1 • Carbonless copy paper; and
- 2 • Floor finishes.

3 **Lead-Based Paint (LBP)**

4 Lead is a naturally occurring bluish-gray metal used for many household and industrial items.
 5 Lead found in structures is usually in the form of compounds of refined metallic lead and other
 6 chemicals. Lead cannot be broken down, and it cannot deteriorate into less toxic substances.
 7 Metallic or elemental lead is a heavy, dull, and gray metal. Compounds of lead were used in
 8 older paints, pipes, and plumbing fixtures and are still used in construction products (ECY,
 9 2010).

10 Lead dust or fumes are created when LBP is dry-scraped, dry-sanded, or heated during
 11 renovation or maintenance. Dust also forms when painted surfaces bump or rub together through
 12 normal use. Lead chips and dust can get on surfaces and objects that people touch. Settled dust
 13 can re-enter the air when people vacuum, sweep, or walk through it (ECY, 2010).

14 Due to the age of some of the facilities construction, the potential for lead-based paint in Border
 15 Patrol stations exists. From 1920 through 1978 lead was used in paint and plumbing. All
 16 buildings constructed before 1980 are considered to contain some lead-based paint. Paint with
 17 regulated dangerous waste components may also cover asbestos-containing building materials
 18 such as pipe-wrapping or siding.

19 The EPA, along with other state and Federal agencies and programs, regulates lead and lead-
 20 contaminated debris from renovation and demolition work when it is disposed of or recycled as a
 21 waste under EPA’s Dangerous Waste Regulations (USEPA, 2010b).

22 Table 3.14-1 shows the location of hazardous materials typically found in buildings.

23 **Table 3.14-1. Building Components in Which Hazardous Materials Are Found**

Substance	Building Components and Materials
Asbestos	<ul style="list-style-type: none"> • Roofs and tiles • Glue • Sound insulation • Fire-resistant sealing • Wall plaster
PVC	<ul style="list-style-type: none"> • Gutters and pipes • Roofs and tiles • Electrical cable
Lead	<ul style="list-style-type: none"> • Roofs and tiles • Electrical cables

Substance	Building Components and Materials
Cadmium	<ul style="list-style-type: none"> • Plastic (cable, pipes and plates) • Occurring with zinc • Occurring with concrete
Mercury	<ul style="list-style-type: none"> • Fluorescent tubes • Switches and relays (electrical installations) • Other (concrete)
Nickel	<ul style="list-style-type: none"> • Stainless steel • Surface treatment
Chromium	<ul style="list-style-type: none"> • Stainless steel • Other (painted surfaces)
Copper	<ul style="list-style-type: none"> • Cables and wires • Permanent installations; and, • Temporary installations. • Roofs, pipes • Screws, locks
Zinc	<ul style="list-style-type: none"> • Gutters/pipes and galvanized products • Plastic (especially gutters and pipes)
PCB	<ul style="list-style-type: none"> • Small capacitors and electrical installations • Double-glazed windows (glue) • Sealant (softener) • Paint (pigments) • Fire-resistant additive (paint, glue/binder)
Chlorinated paraffin	<ul style="list-style-type: none"> • Plastic (in general) • Sealant (softener) • Others (glue)
CFCs	<ul style="list-style-type: none"> • Thermal insulation—polyurethane foam • Other insulation materials
HCFCs and HCTs	<ul style="list-style-type: none"> • Thermal insulation—polyurethane foam • Foam for joints

Substance	Building Components and Materials
Sulphur hexafluoride	<ul style="list-style-type: none"> • Soundproof windows

1 Source: (Strufe, 2004).

2 3.14.1.4 Hazardous Materials Regulatory Requirements

3 **Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) 42** 4 **USC § 9601 et seq.**

5 CERCLA provides Federal authority over releases or threatened releases of hazardous
6 substances that may endanger public health or the environment, establishes requirements for
7 closed and abandoned hazardous waste sites, and provides for the liability of persons responsible
8 for the release of hazardous substances. Site contamination at CBP facilities could trigger these
9 requirements but would more likely have to comply with Brownfield requirements designed to
10 allow redevelopment of contaminated sites with provisions to protect the public and the
11 environment.

12 **Community Environmental Response Facilitation Act (CERFA), 42 USC §9620(h).**

13 CERFA amends CERCLA to require the Federal government, before termination of Federal
14 activities on any real property owned by the government, to identify real property where no
15 hazardous substance was stored, released, or disposed of. This Act requires CBP to perform
16 environmental site assessments to identify land free of hazardous substances in land transfers
17 when it terminates operations at a location and transfers the property to a third party. CBP is
18 responsible for any cleanup costs required after the transfer.

19 3.14.2 FRAMEWORK FOR CHARACTERIZING RESOURCE IMPACTS

20 A proposed project or activity would potentially have major impacts related to hazardous
21 materials or other regulated materials under the following conditions:

- 22 • Substantial adverse changes in the procedures for procuring, storing, handling, or
23 disposing of hazardous materials that may violate Federal, state, or local laws and
24 regulations;
- 25 • Substantial adverse changes in the procedures for generating, storing, handling, or
26 disposing of hazardous wastes that may violate Federal, state, or local laws and
27 regulations; or
- 28 • Substantial increases in the volume of hazardous waste generated if methods for reducing
29 the volume are available, such as the use of a hazardous solvent when a non-hazardous
30 cleaner is available and achieves the same or a similar purpose.

31 3.14.3 ACTIVITIES WITH HAZARDOUS AND OTHER REGULATED MATERIALS 32 ENVIRONMENTAL CONSEQUENCES

33 **Construction Activities**

- 34 • Construction of or modification of fixed-point facilities:

- 1 ○ New BPSs, forward operating bases (FOBs), communications towers, air and marine
2 operational facilities;
- 3 ○ Modification/upgrade of existing POEs, BPSs, hangars, and other facilities in support
4 of CBP operations; and
- 5 ○ Set up of permanent traffic checkpoints.

- 6 • Construction of linear facilities:
 - 7 ○ New or extended tactical security physical barriers such as point-specific pedestrian
8 or vehicle fences or other physical barriers; and
 - 9 ○ New or extended access roads, drag roads, bridges, culverts, and low-water crossings.

- 10 • Operations at fixed facilities:
 - 11 ○ Routine activities at POEs including agricultural inspections;
 - 12 ○ Continue standardizing and modernizing Office of Air and Marine (OAM) fleet;
 - 13 ○ Use of nonintrusive/nondestructive inspection and detection technologies;
 - 14 ○ Implementation and deployment of RVSS, MSS, CASC, and OIC;
 - 15 ○ Operation of small-arms weapons training ranges; and
 - 16 ○ Enforce I-68 Canadian Border Boat Landing Program for recreational boaters.
 - 17 ○ Maintenance and repair of all of the above.

18 **Operations Activities**

- 19 • Field surveillance operations:
 - 20 ○ Unmanned aircraft systems (UAS) missions and manned aerial surveillance patrols;
 - 21 ○ Waterborne patrols;
 - 22 ○ Off-road-vehicle (ORV) and all-terrain-vehicle (ATV) patrols;
 - 23 ○ Snowmobile patrols;
 - 24 ○ On-road vehicle patrols;
 - 25 ○ Canine patrols;
 - 26 ○ Horse patrols;
 - 27 ○ Set up mobile traffic checkpoints; and
 - 28 ○ Install and maintain unattended ground sensors (UGS).

29 **3.15 UTILITIES AND INFRASTRUCTURE**

30 **3.15.1 CONTEXT FOR AFFECTED ENVIRONMENT**

31 Utilities and infrastructure refer to the system of public works, utilities, and transportation
32 networks that provide the basic framework for a community. Utilities include water, power

1 supply, and waste management. Section 3.16 Roadways/Traffic addresses transportation
2 networks.

3 The “affected environment” sections for each region describe the types and ranges of utility
4 systems and infrastructure in the CBP facilities portfolio for that region. These include:

- 5 • Water supply (municipal or on-site water supply);
- 6 • Electrical generator or grid;
- 7 • Fuel supply (heat, ventilation, and air conditioning) including grid pipelines, on-site
8 storage tanks; and
- 9 • Wastewater management (sewer connection or septic system).

10 This section describes ranges of use for each utility resource based on recent CBP site-specific
11 analyses of protection, relocation, construction, and operation of U.S. Border Patrol (BP)
12 stations, and construction, modernization, and operation of POEs. This section then describes
13 the utility resources of most CBP facilities: BP stations, POEs, forward operating bases (FOBs),
14 traffic checkpoints, and communication towers.

15 CBP’s initiatives and ongoing operations are analyzed to determine its compliance with relevant
16 Federal regulations and utility capacity. This information is used to predict CBP’s continued
17 compliance with relevant Federal regulations and various utility systems’ capacities. According
18 to Executive Order 13148, “Greening the Government,” all Federal agencies must take necessary
19 actions to integrate environmental accountability into day-to-day decision-making and long-term
20 planning across all agency missions, activities, and functions. Consequently, environmental
21 management must become a fundamental and integral component of all Federal agencies’
22 policies, operations, planning, and management.

23 **3.15.2 FRAMEWORK FOR CHARACTERIZING RESOURCE IMPACTS**

24 Utility analysis in the NEPA context is necessarily site-specific. Programmatic analysis
25 discusses the potential impacts of relevant actions on the four utility categories by region,
26 focusing on the most prevalent systems within each category (depending on available data). This
27 analysis assesses the potential severity of these impacts given site-specific circumstances and
28 characterizes potential impacts as major (significant), moderate, minor, or negligible using
29 resource-specific criteria. Exceeding any of the three utility capacities or violation of wastewater
30 treatment or discharge standards constitutes a major impact.

31 Utility system elements have fixed maximum supply and treatment capacities, above which
32 system performance can become negatively affected. CBP activities would have adverse
33 impacts to utilities and infrastructure if they cause a demand or condition that:

- 34 • Exceeds existing wastewater treatment capacity serving the project site;
- 35 • Exceeds permitted potable water supply capacity serving the project site;
- 36 • Exceeds existing energy supply capacity serving the project site; or
- 37 • Violates wastewater treatment or discharge standards.

1 **3.15.3 ACTIVITIES WITH ENVIRONMENTAL CONSEQUENCES TO UTILITIES**
2 **AND INFRASTRUCTURE**

3 The following activities are expected to have environmental consequences to utilities and
4 infrastructure:

- 5 • Modification to POEs;
- 6 • Repairs and maintenance of existing POEs;
- 7 • Construction or modification of existing UPBP stations;
- 8 • Construction of communication towers;
- 9 • Small additions to OAM facilities;
- 10 • Construction of new FOBs;
- 11 • Trade and travel processing at POEs;
- 12 • Use of NII systems; and
- 13 • Use of other detection systems.

14 **3.16 ROADWAYS AND TRAFFIC**

15 **3.16.1 CONTEXT FOR AFFECTED ENVIRONMENT**

16 Impact analysis includes discussion of the types of potential impacts, the potential severity based
17 on specific context, and mitigation. The analysis is broken down by both alternative and
18 geographic region. Specifically, this section provides a bounded analysis for CBP activities for
19 which less-than-significant effects are expected. It also offers guidelines to determine if
20 transportation and traffic as a resource area can be eliminated from tiered NEPA documentation
21 for specific activities. Finally, it supplies an analytical tool to evaluate activities that either have
22 the potential to cause significant adverse effects or for which information is not available to
23 determine impact levels. The analysis characterizes potential effects as major (significant),
24 moderate, minor, or negligible using resource-specific criteria. It outlines regulatory
25 requirements, best management practices, and possible ways to mitigate significant impacts.

26 **3.16.2 FRAMEWORK FOR CHARACTERIZING RESOURCE IMPACTS**

27 To analyze the potential for CBP activities to cause transportation traffic impacts along the
28 Northern Border, this PEIS:

- 29 • Characterizes the areas (remote, rural, suburban, and urban) and critical infrastructure
30 where CBP’s proposed action and alternatives would be implemented.
- 31 • Characterizes both CBP and non-CBP infrastructure within the study area that may affect
32 transportation resources.
- 33 • Characterizes temporary and permanent changes to different modes of transportation,
34 including vehicle traffic, roadway infrastructure, off-road activities, public transit, and air
35 traffic.
- 36 • Compares the changes in transportation volumes and modes to traditional activity levels
37 in each area.

- 1 • Reviews each activity for its potential to affect critical infrastructure.

2 This PEIS uses a systematic process to evaluate the level of impact for roadways and traffic.
3 This process compares the predictions to the significance criteria based on legal and regulatory
4 constraints and on team members’ professional technical judgment. Specifically, this approach
5 assumes that a project or activity has the potential to create an adverse effect on transportation if:

- 6 • Increased permanent roadway traffic (i.e., on-road automobile and truck traffic) would
7 likely reduce service at nearby intersections or roadways to unacceptable levels.
8 • The project cannot comply fully with local, state, and Federal laws and design guidelines.
9 • The project would interfere considerably with public transit, rail, air, or pedestrian travel.

10 The degree to which an impact might be major depends upon how much loss of functionality
11 affected communities would suffer from changes to roadway access or increases in traffic due to
12 rerouting or slowing movement of traffic through the border.

13 **3.16.3 ACTIVITIES WITH ENVIRONMENTAL CONSEQUENCES TO** 14 **TRANSPORTATION RESOURCES**

15 Activities that could affect transportation resources include:

- 16 • Construction projects;
17 • New trade and travel processing operations;
18 • Motorized ground operations;
19 • Aircraft operations; and
20 • Vessel operations.

21 **3.17 RECREATION**

22 **3.17.1 CONTEXT FOR AFFECTED ENVIRONMENT**

23 There is a wide variety of recreation areas along the Northern Border on both the United States
24 and Canadian sides. On the U.S. side these recreation areas include National Parks (NP),
25 National Recreation Areas (NRA), national forests (NF), National Wildlife Refuges (NWR), and
26 Designated Wilderness Areas. On the Canadian side they include National Park Reserves,
27 Provincial Parks, Protected Areas, and Natural Areas. U.S. recreation categories are described
28 briefly below, since the type of designation bears on the nature of activities that can be
29 conducted there.

30 **3.17.1.1 Definitions**

31 National Parks are managed by the National Park Service to “preserve unimpaired the natural
32 and cultural resources and values of the national park system for the enjoyment, education, and
33 inspiration of this and future generations” (USDOJ, No Date). The emphasis placed on
34 wilderness preservation and recreation varies from park to park, as do the types of recreation
35 activities permitted.

1 National forests are managed by the U.S. Forest Service “to restore and enhance landscapes,
2 protect and enhance water resources, develop climate change resiliency and help create jobs that
3 will sustain communities” (USDA, 2011). As with the national parks, the value of recreation,
4 preserving the wilderness, forestry and other economic activities vary considerably between
5 national forests.

6 National Recreation Areas and Lakeshores can be managed by either the National Park Service
7 or the U.S. Forest Service. These areas are managed primarily to preserve recreational use.

8 National Wildlife Refuges are managed by the U.S. Fish and Wildlife Service. The mission of
9 the National Wildlife Refuge system is “to administer a national network of lands and waters for
10 the conservation, management, and where appropriate, restoration of the fish, wildlife, and plant
11 resources and their habitats within the United States for the benefit of present and future
12 generations of Americans” (USDOJ, 2009a).

13 Rivers in the WOR Region may be designated as National Wild and Scenic Rivers. The Wild
14 and Scenic Rivers Act of 1968 establishes that certain rivers which “possess outstandingly
15 remarkable scenic, recreational, geologic, fish and wildlife, historic, cultural or other similar
16 values, shall be preserved in free-flowing condition” (16 U.S.C. 1271) While individual river
17 designations focus on specific attributes to be preserved, designation does not necessarily restrict
18 all development; it does, however, prohibit Federal support for any action that may harm the
19 river’s free-flowing condition, water quality or outstanding resource values, such as construction
20 of a dam (National Wild and Scenic River System, 2010). Designated Wild and Scenic Rivers
21 are identified in the recreation profiles within the larger property in which they are located.

22 **3.17.1.2 Analysis Methods**

23 The analysis of recreational impacts in the NEPA context is site-specific. This analysis discusses
24 the effects of various activities on recreational values. The discussion also provides some
25 examples of where these recreational values or pursuits exist in each region along the border.
26 These recreational values include:

- 27 • Hiking (including backcountry and wilderness);
- 28 • Scenic quality;
- 29 • Sport hunting and fishing;
- 30 • Boating, swimming, and other water sports;
- 31 • Skiing, snowshoeing, and other winter sports;
- 32 • Camping (at developed sites and backcountry);
- 33 • Eco-tourism;
- 34 • Wildlife viewing; and
- 35 • Use of motorized vehicles (as allowed).

36 Due to the wide range of recreational uses along the Northern Border, categorizing recreational
37 areas by the type and intensity of use can prove useful. Federal land agencies employ various
38 recreation categorization approaches in their land-management planning. For example, the

1 Bureau of Land Management uses a recreation opportunity spectrum (ROS), which identifies six
2 categories of recreational areas (USDOJ, 2007) to use as in-depth land use descriptions in
3 resource management plans and site-specific environmental impact statements.

4 These classes categorize land in greater detail by recreational use, amount and types of
5 development existing on the land, visual quality, and visitor expectations. In the least-developed
6 class, designated as primitive, visitors expect physical challenges and little to no evidence of
7 other people. The classification gradient then moves to semi-primitive, nonmotorized land;
8 semi-primitive, motorized land; roaded natural areas; roaded modified areas; rural areas; and
9 urban land, which includes high levels of human activity and development.

10 For programmatic analysis, we use a simplified approach, employing three “impact use”
11 categories. A given national park or national forest may contain use areas of many types. These
12 categories are:

13 **Low-impact Use Areas:** These areas are managed to protect their wilderness character and may
14 include designated wilderness areas. Minimal, rustic, or primitive developments exist in these
15 areas. Typical recreation may include backcountry camping, snowshoeing, cross-country skiing,
16 and hiking, alone or in small groups. These activities have a relatively low physical and human
17 impact on the area and priority values are solitude, privacy, and observation of nature. Carefully
18 regulated hunting and fishing may be allowed in certain areas. Visitors should encounter very
19 few other people and minimal infrastructure. These areas include most of the national wildlife
20 refuges, as well as some national parks and national forests. An entity may be included in this
21 category even if it has non-wilderness, more-developed areas.

22 **Medium-impact Use Areas:** These areas include the majority of national parks, national
23 forests, national wilderness areas, and national wildlife recreation areas. They may include some
24 wilderness sections, but also have small to medium zones developed for recreational use. The
25 management of these areas strikes a balance between solitary wilderness experiences for a small
26 number of visitors and low to medium-impact recreation for a larger number of visitors. These
27 areas are usually not developed for high-impact recreation, such as motorized vehicle use,
28 snowmobile use, downhill skiing, or intensive water sports, although one of these activities may
29 occasionally be permitted. Some developed lodging may exist in addition to opportunities for
30 wilderness experiences. Typical recreation activities may include camping, backcountry
31 camping, vehicle camping, hunting, fishing, swimming, cross-country skiing, and hiking.

32 **High-impact Use Areas:** These high-impact areas are the most developed and are managed for
33 tourism or local recreational use. While there may be some low-impact use in these areas, a
34 significant portion has extensive infrastructure to facilitate use. High and medium-impact uses
35 are usually permitted in many areas of the park. They contain developed lodging and well-
36 maintained trails, along with boat launches and marinas, where appropriate. Typical recreation
37 activities may include RV and car camping, cabin lodging, off-road vehicle use, snowmobile use,
38 downhill skiing, motor boating, guided tours, and activities. While some visitors may seek
39 solitary wilderness experiences, most expect to see other people and infrastructure.

40 These use categories relate to the recreation opportunity spectrum in the following way:

- 1 • High-impact use areas include land categorized as urban, rural as well as most roaded,
2 modified areas;
- 3 • Medium-impact use areas would generally include some roaded, modified areas, most
4 roaded natural areas, and most semi-primitive motorized areas; and
- 5 • Low-impact use areas would include semi-primitive, nonmotorized areas and primitive
6 areas.

7 Table 3.17-1 summarizes the recreational values and activities associated with each site category.

8 **Table 3.17-1. Federal Recreation Areas along the Northern Border by Intensity of Use**

Area Use Type	Recreational Values Emphasized	Typical Recreation Activities
Low-impact use areas	Hiking Scenic quality Camping Wildlife viewing Low-impact water and winter sports	Backcountry camping Snowshoeing Cross-country skiing Hiking Photography Limited hunting and fishing
Medium-impact use areas	Hiking Scenic quality Sport hunting and fishing Water sports (nonmotorized) Winter sports Camping Eco-tourism Wildlife viewing	Backcountry camping Vehicle campground camping Cross-country skiing Hiking Hunting Fishing Scenic driving along roads Boating (nonmotorized)
High-impact use areas	Scenic quality Sport hunting and fishing Water sports Winter sports Ecotourism Motorized vehicle use	RV and vehicle campground camping Cabin lodgings Off-road vehicle riding Snowmobile riding Downhill skiing Motor boating and other water sports Guided tours and activities Scenic driving along roads Day hiking

9 Most national parks, national forests, national wilderness areas, and national wildlife recreation
10 areas include some elements of all of the categories in the table. These broad categories are,
11 therefore, imperfect and decisions about developments in any protected area require a more in-
12 depth understanding. To analyze programmatic impacts for a variety of actions, however, these
13 categories should prove helpful.

14 **3.17.2 FRAMEWORK FOR CHARACTERIZING RESOURCE IMPACTS**

15 Impacts on recreation would occur if an activity:

- 1 • Eliminates areas of important or unique recreational opportunities or facilities (such as
2 constructing facilities on a relatively undisturbed recreational site, or positioning a
3 facility so close that it destroys the recreational value);
- 4 • Degrades the quality of the recreational experience (such as altering the vista,
5 soundscape, lightscape, terrain, frequency of interactions with other people, or other
6 wilderness value); or
- 7 • Limits access to recreational areas by physical or administrative restrictions (such as
8 constructing physical barriers or instituting closures).

9 The degree to which an impact to recreation would be major is dependent upon the permanence
10 or degradation of access to or quality of a recreation resource and the particular sensitivity of a
11 recreational area based on its impact use category. Low-impact use areas would more easily
12 suffer major impacts than high-impact use areas.

13 **3.17.3 ACTIVITIES WITH ENVIRONMENTAL CONSEQUENCES TO RECREATION** 14 **RESOURCES**

15 The types of CBP actions that could produce recreation impacts include:

- 16 • Construction of new CBP facilities, such as BP stations, FOBs, or other facilities in, or
17 close to, areas used for the recreational values identified above;
- 18 • Upgrades, expansions, or renovations of existing facilities on or near recreational sites;
- 19 • Occurrence of increased pedestrian, vehicle, marine, canine, horse, or aerial-patrol traffic
20 that degrade recreational values by altering the soundscape, lightscape, scenic value, or
21 terrain; and
- 22 • Construction of infrastructure on or through recreational areas (transmission lines,
23 pipelines, wastewater treatment, etc.).

24