

Final

Programmatic Environmental Impact Statement For Northern Border Activities

Section 9: Environmental Design and Planning Considerations



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9 ENVIRONMENTAL DESIGN AND PLANNING CONSIDERATIONS

9.1 INTRODUCTION

The National Environmental Policy Act (NEPA) Section 102(2)(A) requires that Federal agencies “utilize a systematic, interdisciplinary approach which will insure the integrated use of the natural and social sciences and the environmental design arts in planning and in decision making which may have an impact on man's environment.” One of the primary methods of applying this systematic approach is employing mitigation measures, or actions that reduce the severity of environmental impacts of Federal actions. The Department of Homeland Security (DHS) makes mitigation of the environmental impacts of its actions a primary consideration. DHS’s Management Directive 023.01 requires that stewardship of the air, land, water, and cultural resources be compatible with the planning and execution of the mission of DHS. Environmental stewardship must also be compatible with the planning and execution of the mission of DHS’s component agencies, including the U.S. Customs and Border Protection (CBP).

To meet its environmental stewardship responsibilities, CBP integrates environmental planning requirements into operational planning, program development, and management methodologies consistent with homeland security requirements, fiscal policies, and other considerations of national policy. CBP seeks to avoid, minimize, repair, and reduce the impacts of its actions on the human environment. It does so with a combination of best management practices, siting plans, design strategies, mitigation measures, and monitoring plans best suited to the scale and the location of the particular action. The agency recognizes that when environmental stewardship responsibilities are not managed effectively, there may be social, financial, and administrative costs, as well as the potential for lower quality mission outcomes.

In compliance with monitoring and mitigation requirements (40 CFR 1505.3), reasonable mitigation measures should be identified to address the impacts of a proposed action and alternatives. Any mitigation measures selected must be clearly outlined in the project’s Record of Decision (ROD). Mitigation measures must also be included in the proposed budget for the project or made part of the approved project application. Best management practices (BMPs) and existing environmental management systems (EMS) should be used to implement a project and to monitor the predicted environmental effects. Adaptive management techniques should be used to modify the implementation of a project as new information becomes available.

In conformance with 40 CFR 1507.2, CBP must provide adequate staff, funding, and time to integrate environmental planning into its missions and to perform appropriate NEPA analysis for programs; plans; policies; projects; regulations; orders; legislation; or applications for permits, grants, or licenses involved in the actions associated with the Northern Border Programmatic Environmental Impact Statement (PEIS). Should mitigation be necessary to reduce the environmental effects of a proposed action, CBP would be responsible for providing the costs of appropriate mitigation of such environmental impacts. Mitigation measures proposed for the actions discussed in the PEIS are outlined below for each environmental resource analyzed in the

document. In implementing its proposed action CBP could choose from among the following actions to avoid or minimize impacts to environmental resources.

9.2 AIR QUALITY

No mitigation measures would be required for air quality.

9.3 BIOLOGICAL RESOURCES

It is CBP's policy to reduce impacts to biological resources by implementing avoidance, minimization, mitigation, and compensation measures. Many standard mitigation measures have been incorporated as standard operating procedures by CBP on past projects. In some cases, mitigation solutions are required by law and for certain direct impacts. These measures would be negotiated and coordinated with applicable Federal, state, and local agencies.

9.3.1 MITIGATION FOR IMPACTS TO GENERAL WILDLIFE AND HABITAT

Ground-disturbing construction activities should not take place during wildlife migration or breeding periods without consultation with the U.S. Fish and Wildlife Service (USFWS) and applicable Federal, state, local, Tribal or private land managers and owners. If construction or demolition is scheduled to start during these periods, steps should be taken to prevent species from using areas of potential impact. Possible steps include:

- Covering equipment and structures;
- Surveying specific sites for nesting migratory birds prior to clearing them; and,
- Establishing buffers around known breeding and high-use areas.

Reducing vehicular use in sensitive areas helps to protect wildlife habitat. Vehicle barriers also discourage activity in sensitive areas. Routinely washing and inspecting vehicles for vegetation, seeds, and insects and animals would reduce the risk of transporting non-native/invasive species into off-road environments.

USFWS recommendations to communications companies and the Federal Communications Commission on tower height, lighting regimes, and placement (USDOJ, 2000) should help CBP avoid adverse impacts to wildlife.

CBP would implement BMPs to prevent soil erosion and sedimentation during construction.

Use of native vegetation as part of site landscaping could benefit some birds, small mammals, and insects by providing food and cover.

9.3.2 MITIGATION FOR IMPACTS TO WETLANDS AND AQUATIC RESOURCES

Consultation with USFWS will be needed if endangered or threatened species are found in affected wetlands.

Section 404 of the Clean Water Act requires that projects affecting wetlands follow the sequential process of avoiding adverse wetland and surface-water effects, then minimizing

impacts not practicably avoided, and compensating for impacts that cannot be further minimized through wetland mitigation and restoration.

Secondary impacts to wetlands would be mitigated through use of BMPs that reduce erosion and sedimentation during port of entry (POE) construction. These practices include minimizing the length of time that bare soil remains exposed, including timely reseeding and mulching. Construction and maintenance of potable water and long-term sediment and surface-water retention features could further reduce erosion and sedimentation. CBP may provide and implement an erosion and sediment control plan to protect wetlands and other waterways from additional storm water runoff. Landscaping near wetlands would include native species to avoid introducing invasive species. Invasive plant species management includes the cleaning of construction equipment prior to site entry.

Mitigation is required to compensate for unavoidable wetland loss. Depending on the state, mitigation could include purchase of credits from a wetland mitigation bank, monetary compensation for wetland loss, or wetland restoration or preservation.

CBP would provide and implement a long-term erosion and sediment control plan for storm water treatment structures. Secondary impacts from new lighting structures would be reviewed during the permitting process based on potentially affected wildlife (e.g., breeding amphibians). Landscaping near wetlands could include planting native species to avoid introducing invasive species. Invasive plant species management would also include cleaning construction equipment prior to site entry.

All disturbed areas should be mulched and re-vegetated with native woody and herbaceous species when feasible.

To protect fish spawning, no in-water work should occur during seasons designated by appropriate resource agencies for the potentially affected protected species, and similar time constraints may affect work scheduling if aquatic endangered species' breeding, nesting, or egg-laying activities take place.

CBP activities that may accidentally introduce invasive species should be monitored and introductions of harmful plants prevented, when possible. Vehicles and watercraft should be routinely inspected and washed off to remove non-native/invasive vegetation, seeds, insects, and marine animals to reduce the risk of transporting species into surface.

9.3.3 MITIGATION FOR IMPACTS TO PROTECTED SPECIES

Implementing avoidance and minimization efforts may reduce potential impacts to listed species. The potential effects by region are as follows. Species locations by county can be found in Appendix M.

- In the West of the Rockies (WOR) Region, for example, woodland caribou (*Rangifer tarandus caribou*), spotted owl (*Strix occidentalis*), and marbled murrelet (*Brachyramphus marmoratus*) have specific habitat requirements. Construction and disturbance in high-quality, intact habitat where these species occur should be avoided to the greatest extent practicable. In addition to avoiding construction disturbance in areas

of intact grizzly bear (*Ursus arctos horribilis*) habitat, minimization of new road construction and limiting road access by means including closing unneeded roads on Federal land can create roadless habitat for grizzlies and other threatened and endangered species. Such measures should be balanced to avoid creating national security vulnerabilities. CBP can minimize impacts to the leatherback turtle (*Dermochelys scoriacea*) by reducing use of nocturnal lighting around marine and coastal sites, which can disturb navigation, in areas of known turtle activity.

- In the East of the Rockies (EOR) Region, the same considerations as in the WOR Region apply for reducing impacts to grizzly bears. The black-footed ferret (*Mustela nigripes*) requires extensive grassland habitat, particularly in North Dakota. Construction and disturbance activities in high quality, intact habitat that this species inhabits should be avoided, as this is one of the most endangered mammals in the United States (USDOJ, 2008b). Impacts to migrating whooping cranes (*Grusa mericanus*) may be minimized by avoiding marshes and prairie potholes in the summer and known migratory pathways in the spring and fall.
- In the Great Lakes Region, the piping plover (*Charadrius melodus*) nests along the shoreline of lakes Superior, Michigan, Huron, Erie, and Ontario. Activities that disturb nest sites should be avoided to the greatest extent practicable. The Hine's emerald dragonfly (*Somatochlora hineana*) requires specific wetland habitat. Construction and disturbance activities in or near documented critical habitat should be avoided.
- In the New England Region, the roseate tern (*S. dougallii*) is a beach-nesting species with populations along the Atlantic Coast. Activities that disturb nest sites should be avoided to the greatest extent practicable. Atlantic salmon (*Salmo salar*) populations are in decline so construction and disturbance activities in or near designated critical habitat should be avoided.

9.4 GEOLOGY AND SOILS

Mitigation measures are particular to the specific action as well as the physical characteristics of the environment in which the action will take place. The range of mitigation requirements varies greatly along the northern border, especially regarding local and state regulations. As described in Chapter 4, geological and soil evaluations would be completed prior to the implementation of proposed actions. The following general mitigation measures and BMPs may be implemented in compliance with regulatory authorities:

- Potential impacts related to regional seismic hazards would be addressed in the design concept for projects with reinforced concrete and masonry used during construction if deemed necessary.
- Potential mass movement (landslide) hazards related to slope stability would be addressed by avoiding areas that may be prone to such hazards with protective barriers to reinforce areas of potential risk.
- Potential impacts related to soils would be addressed on a case-by-case basis. Soils that are highly erodible would be subject to erosion prevention and sediment control plans, depending on local regulations. A Federal National Pollutant Discharge Elimination System (NPDES) permit may also be required based on the proximity of the action to water bodies of concern. Dust control plans would also aid in reducing impacts. Soil

compaction would be controlled by reusing established access roads and trails instead of creating new pathways. Drainage along impermeable surfaces should reflect the specific hydrologic requirements of the area to be served. Re-vegetation would also improve soil conditions and reduce erosion potential. Spill Prevention Control and Countermeasures Plans may be a requirement for actions that may contribute hazardous materials to soil horizons.

9.5 WATER RESOURCES

The following BMPs would be employed to reduce the effects of CBP's activities on water resources:

- Silt fences for new construction;
- Diversion ditches for new construction;
- Reseeding and reestablishment of vegetation (using native vegetation where appropriate) on bare soil as soon as possible following construction;
- To offset potential impacts from soil compaction, highly compacted areas left after construction would be scarified and aerated;
- Mulching, straw berms, and temporary cover crops as appropriate;
- Construction, operation, and maintenance of portable and long-term sediment and surface water retention features;
- Appropriate erosion and sediment control would be in place and functional before earth-moving operations begin and would remain intact throughout the project. Disturbed areas would be planted as quickly as possible to prevent erosion;
- Design and construction measures would include development of surface-water control features to ensure that post-development runoff from construction sites does not exceed pre-development runoff;
- Construction of roads in waterways or riparian areas should be avoided to the extent possible;
- Areas around buildings and parking lots would be vegetated to minimize soil erosion. In addition, catch basins, diversion ditches, and pipe conveyances may be necessary to handle the additional storm water runoff;
- Design elements such as grass swales and landscaped features would be incorporated to help minimize runoff and soil erosion;
- Storm gutters and other storm drainage system improvements would be installed in conjunction with construction of the new facilities;
- Provide onsite detention or retention basins for developed sites to reduce the rate of runoff to historic natural levels;
- Provide drainage improvements, including storm water channels that intercept runoff directed toward areas that had not previously accepted runoff and divert it to natural receiving waters;

- Avoid building new infrastructure in 100-year floodplains. Follow local regulations that govern development of floodplains;
- Use accepted engineering design practice and/or established state or local standards to design the capacity of road drainageways, bridges, culverts, and low-water crossings in a manner that minimizes erosion and creation of sediment at the structure;
- Use accepted engineering practices to design water and waste systems that are properly sized for facility occupancy;
- Remove canine waste from kennel areas and properly dispose of in waste systems such as municipal sewers or septic systems;
- Ensure temporary or permanent water supply and waste disposal systems would be in place and operational when forward operating bases (FOB) are manned;
- Vehicles that regularly use low-water crossings should be washed frequently and made free of fluid leakage to prevent discharge of contaminants at low-water crossings;
- Provide training to watercraft operators in the safe operation of boats, including handling, storage, disposal, and use of fuels and lubricants; include training in safe interim storage of intercepted materials to prevent spillage or leakage;
- Implement a mandatory two-week (80 hour) ATV rider safety course, designed to educate riders in order to eliminate ATV-related accidents and agent injuries and to develop driving skills that minimize effects on the environment;
- Under conditions of unstable travel surfaces, drive ATVs at speeds that avoid rutting, if possible;
- Work within partnerships or initiate new ones to identify and make provisions for repair or maintenance of roads or trails that are easily rutted;
- Avoid placing horse stables in drainage swales and areas with poor soil drainage; try to grade area around stables to divert runoff away from structure, and avoid placing horse stables near ponds, streams, and wetlands (LSU, 2009);
- Install gutters, downspouts, and splash blocks on all horse-related structures; create a sacrifice area for horses, i.e., a small enclosure or paddock area that serves as a horse's outdoor living space when the soil is saturated or the pastures overgrazed (LSU, 2009).
- Maintain and manage pastures, including choosing appropriate vegetation species, in ways that reduce mud and soil erosion in order to maintain water quality (LSU, 2009); and,
- If a POE, or any other CBP facility is closed on a site that utilized onsite water wells or tank storage of fuels, oils, or other potential water resource contaminants, these physical systems must also be closed following procedures typically required by a state environmental protection agency.

9.6 NOISE

No mitigation measures would be required for noise.

9.7 CLIMATE CHANGE AND SUSTAINABILITY

Measures that may be implemented to reduce or eliminate potential adverse impacts on climate change and sustainability are as follows.

- Continue development of CBP's Environmental Management System (EMS).
- Review and revise CBP *Fleet Handbook* to incorporate meeting sustainability goals as an objective.
- Review and revise real property acquisition and development process maps to include a sustainability review of each project.
- Develop a process to monitor compliance with sustainability goals and targets.
- Identify facilities where installation of an alternative fuel tank would increase the use of alternative fuel.
- Conduct fleet optimization analysis (including right-sizing of fleet and right configuration for defined missions).
- Establish policy and procedures to ensure that E85 (ethanol) or biodiesel fuel tanks are installed at new CBP fueling centers.
- Continue deployment of flex fuel vehicles.
- Evaluate hybrid vehicles for administrative use.
- Develop policy for use of videoconferencing.
- Develop sustainable process for calculating employee commute emissions.
- Complete revised inventory of Scope 3 GHG emissions sources.
- Develop an integrated plan for how CBP will meet Scope 3 Greenhouse Gas (GHG) emissions reduction goals.
- All new construction as well as major renovation or repair and alteration of Federal buildings shall comply with "Guiding Principles for Federal Leadership in High Performance and Sustainable Buildings, December 1, 2008."
- New construction designs shall be at least 30 percent more energy-efficient than the applicable standard.
- Use cost-effective, innovative building strategies to minimize energy, water, and materials consumption in a manner that achieves a net reduction in department-deferred maintenance costs;
- Modify existing owned facilities and bring them into compliance.
- Complete evaluation of Laboratory Energy Audits and, as appropriate, add implementation of recommended energy savings initiatives into budget requests.
- Ensure that all Project Management Office project managers are trained in "Guiding Principles"/LEED® ("Guiding Principles for Sustainable New Construction and Major Renovations").

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- Review existing contracts to ensure sustainability requirements are included in scopes of work (SOW).
- Incorporate participation in regional transportation planning (recognition and use of existing community transportation infrastructure) into existing policy and guidance.
- Update policy and guidance to ensure that all environmental impact statements and environmental assessments required under NEPA for proposed new or expanded Federal facilities identify and analyze impacts associated with energy usage and alternative energy sources, and complete *NEPA Handbook*.
- Develop guidance for CBP's Service Providers (GSA and U.S. Army Corps of Engineers) for site selection criteria and prioritization based on the sustainability goals.
- Continue collocation studies with the U.S. Coast Guard.
- Reduce potable water use intensity by at least 26 percent by FY 2020.
- Reduce industrial, landscaping, and agricultural water use by at least 20 percent by FY 2020.
- Achieve objectives established by the U.S. Environmental Protection Agency (USEPA) in "Stormwater Guidance for Federal Facilities EISA Selection 438" (42 USC 17094).
- Develop CBP's Water Conservation Handbook.
- Complete CBP's Environmental Compliance Handbook.
- Increase source reduction of pollutants and waste.
- Divert at least 50 percent of nonhazardous solid waste by FY2015, excluding construction and demolition (C&D) debris.
- Divert at least 50 percent C&D materials and debris by FY2015.
- Reduce printing paper use.
- Reduce and minimize the acquisition, use, and disposal of hazardous chemicals and materials.
- Increase diversion of compostable and organic materials from the waste stream.
- Decrease use of chemicals to assist in achieving FY2020 GHG reduction targets.
- Complete CBP's Recycling and Reuse Handbook.
- Complete 300 Environmental Compliance Assessments (scope includes identification of quantities of hazardous waste disposed annually).
- Complete baseline assessment of waste management practices at all facilities.
- Ensure that 95 percent of new contract actions require the supply and use of products and services that are energy efficient (as designated by Energy Star or Federal Energy Management Program [FEMP]), water efficient, bio-based, environmentally preferable, and not ozone-depleting, and that they contain recycled content or are non-toxic or less toxic alternatives. (For construction contract actions, this could include provisions for diesel retrofits, the use of clean fuels, and anti-idling provisions to reduce vehicle emissions if feasible.)

- Complete CBP's *Green Procurement Handbook* and policy.
- Establish and implement policy and guidance to ensure use of power management, duplex printing, and other energy efficient or environmentally preferred options and features on all eligible CBP electronic products.
- Update CBP's policy to ensure implementation of BMPs for energy-efficient management of servers and Federal data centers.
- Add chapter on electronics stewardship to the current CBP *Electronics Security Handbook*.
- Conduct inventory of compliant and noncompliant equipment.

9.8 LAND USE

CBP could minimize potential impacts of new facilities construction by:

- Siting projects away from existing residential development or recreational areas;
- Siting projects on vacant or unproductive lands;
- Conducting construction activities during periods of relatively low recreation levels; and,
- Developing aesthetically pleasing sites, for example, through landscaping and proper siting of waste storage areas.

CBP could minimize the impacts on land use from activities that cause noise and light disturbance by:

- Utilizing sound-reducing equipment, where feasible;
- Siting projects away from existing residential development or recreational areas; and,
- Conducting patrols and surveillance activities during periods of relatively low recreation levels.

CBP could minimize the impacts of border fencing activities on land use activities by:

- Ensuring that the fencing project does not fracture a contiguous land parcel.

9.9 AESTHETIC AND VISUAL RESOURCES

Mitigation measures include preventing or reducing the impacts of light pollution on the "Natural Lightscape" or "Night Sky," wildlife, and people.

Mitigation measures for visual resources also include reducing visual contrast associated with implementation of project alternatives. Because visual contrast is most closely associated with the addition of structural elements and change to landform characteristics, the following mitigation measures are organized into those related to landform and those related to structures. Appendix G contains a more complete list compiled by the U. S. Bureau of Land Management (BLM), but some possible techniques to reduce impacts include the following:

- Structures:

- To the extent possible, use structures that are simple, slim, and low-profile with minimal bulk and horizontal emphasis, avoiding over-monumentation, reducing structure depth as compared to deck edge, and keeping structures proportional.
- To eliminate this potential for significant major adverse visual impacts, proposed towers and associated facilities should be situated at least 1.5 miles from areas designated for their visual sensitivity (e.g., scenic roads, rivers, national parks and monuments, scenic vistas within national and state forests, and open-space districts) whenever feasible.
- Design colors of structures to complement the natural landscape.
- Design tapered and rounded forms and edges where appropriate to soften appearance and reduce perceived bulk (for example, on bridge piers).
- Use repeating colors and textures to provide continuity with other structural features such as retaining walls.
- Use, after evaluation, full cut-off light fixtures where feasible and safe to decrease impacts to the night sky.
- Landforms:
 - Implement sensitive grading techniques that blend grading with the natural terrain;
 - Treat all disturbed slopes for erosion control; revegetate using native plant species as appropriate for adjacent land use and terrain;
 - Reduce color contrast through rock staining in areas of new rock cuts; and,
 - Selectively clear areas where alternatives encroach on forest edge.

Mitigation measures to minimize potential impacts from the monopole towers would include, but are not limited to, painting the proposed towers to blend into their background, using competing interest in visually sensitive areas, and the use of decorative tower perimeter fencing in residential areas. The color and construction material of poles can be chosen to blend with or complement the landscape around them. Lines constructed using H-frame poles or on wood rather than steel structures may blend in better with natural surroundings. Stronger conductors can minimize line sag.

Right-of-way (ROW) management can mitigate aesthetic impacts by planting vegetative screens to block views of the line, leaving the ROW in a natural state at road crossings, creating curved or wavy ROW boundaries, pruning trees to create a feathered effect, and screening and piling brush from the cleared ROW so that it provides wildlife habitat.

The mitigation measures outlined for security fencing includes using context-sensitive design of the fence, or design features to minimize the appearance of fencing, including using a black, visually permeable fencing.

Any infrastructure or action must be completed in accordance with existing regulations such as, but not limited to, the following:

- All POEs must be designed in accordance with the U.S. Land Port of Entry (LPOE) Design Guide (For Official Use Only).
- GSA-owned POEs must be designed in accordance with GSA P-100, Facilities Standards for the Public Buildings Service.
- Border Patrol stations must comply with the guidelines outlined in the 2003 U.S. Border Patrol Facilities Design Guide.

9.10 SOCIOECONOMIC RESOURCES

The three main strategies to minimize adverse social welfare and regional economic impacts of the above alternatives are as follows:

- Minimize some of the social welfare and regional economic impacts of decreased or degraded recreation by siting projects away from recreational areas, to the extent possible;
- Minimize impacts of noise disturbance from construction by undertaking construction activities during off-peak hours or seasons for recreational activities along with other noise reducing BMP's;
- Minimize impacts to land and property values by siting projects on: vacant Federal lands, abandoned Federal facilities, other vacant or unproductive land, or on land purchased or leased from willing sellers;
- Develop aesthetically pleasing landscapes;
- Minimize impacts of delay by engaging in construction activities during periods of relatively low traffic volumes to the extent it is practicable and feasible;
- Construct additional traffic lanes at busy POEs or checkpoints; and,
- Monitor how CBP processing procedures at border crossings affect wait times to determine whether the costs of additional wait times outweigh the benefits of implementing processing procedures.

9.11 CULTURAL AND PALEONTOLOGICAL RESOURCES

Federal consultation protocols established under the National Historic Preservation Act (NHPA) and the Paleontological Resources Preservation Act of 2009 (PRPA) rely extensively on consultation between Federal agencies and contracting parties to identify ways to avoid or minimize adverse impacts to cultural and paleontological resources. When CBP's mission, especially with regard to national security and law enforcement, may adversely affect cultural and paleontological resources, the agency is committed to seeking mitigation strategies that are acceptable to all interested stakeholders while being cost effective and practical. The specific types and degree of mitigation techniques vary considerably state-to-state and project-to-project across a broad spectrum of cultural and paleontological resources. However, the types of impacts to which these resources are subjected generally fall into the land use, aesthetic, and visual categories.

9.12 ENVIRONMENTAL JUSTICE/PROTECTION OF CHILDREN

Extensive mitigation measures would not be required under any alternative. To the extent that CBP employs BMPs in the construction of facilities and the modernization and management of existing facilities, potential adverse effects to individuals would be minimal for all populations and would not be disproportionately experienced by populations of concern for environmental justice. Potential risk to human health, especially for populations of children under the age of 18 would be minimized through adherence to all applicable Federal and state safety regulations. Where construction sites are located near population concentrations, site safety measures, including barriers and warning signs, would be posted around the site perimeter to deter unauthorized intrusion, especially by children. Vehicles and equipment would be secured when not in use or when the site is unattended. Continued participation with the general public by CBP in the implementation of its policies and programs would be expected to minimize any potential for impact to communities in the vicinity of CBP's operations.

When CBP introduces structures and physical barriers, such as towers, neighborhoods and communities immediately surrounding facilities in more urbanized areas are more likely to contain high concentrations of populations of concern, and mitigation measures may be required. Efforts to identify and consult with any affected individual property owners or the residents of affected communities would be a part of any mitigation strategy under this alternative. Extensive engagement with these populations in the planning and execution of physical barriers, and for the purpose of explaining their necessity, would be expected to minimize any potential for impact to communities in the vicinity of infrastructure projects. CBP would also ensure that any construction conforms to local planning and zoning ordinances.

9.13 HUMAN HEALTH AND SAFETY

CBP seeks to avoid, minimize, repair, and reduce the impacts of its actions on the human environment. It does so with a combination of BMPs, siting plans, design strategies, mitigation measures, and monitoring plans best suited to the scale and the location of the particular action. Towards that end, in implementing its proposed action, CBP could choose from among the following actions to avoid or minimize impacts to Human Health and Safety.

Health and safety BMPs for routine activities include but are not limited to:

- Develop and implement a health and safety plan to be followed throughout all phases of a project;
- Coordinate overflights with Federal land managers for aerial patrols over Federal land management units when practicable;
- Provide occupational health and safety orientation training to all employees, consisting of basic hazard awareness, site-specific hazards awareness, safe working practices, and emergency procedures;
- Consider public safety during helicopter flights (e.g., avoid populated areas, schools, and areas being crop dusted);
- Conduct daily safety assessment meetings to identify potential safety issues (e.g., site access, construction, work practices, security, transportation of heavy equipment, traffic

management, emergency procedures, wildlife encounters, and fire control and management) and measures to mitigate them;

- Provide fire suppression equipment in all vehicles; and,
- Use appropriate procedures for storage and transportation of blasting equipment and explosive materials, including appropriate signage indicating its location.

BMPs for radiological health and safety include but are not limited to:

- Incorporating safety warnings and precautions into technical manuals and operator manuals;
- Training operators and scanning operations supervisors in the hazards associated with radiation producing equipment;
- Incorporating emergency stop buttons on the equipment that allow the system, including X-ray production, to be quickly shut down if necessary;
- Training operators and scanning operations supervisors in the location and use of emergency stop buttons; and,
- Establishing radiation-controlled areas during scanning operations.

9.14 HAZARDOUS MATERIALS

CBP seeks to avoid, minimize, repair, and reduce the impacts of its actions on the human environment. It does so with a combination of BMPs, siting plans, design strategies, mitigation measures, and monitoring plans best suited to the scale and the location of the particular action. Towards that end, in implementing its proposed action CBP could choose from among the following actions to avoid or minimize impacts to hazardous or regulated materials.

Mitigations would be implemented as standard operating procedures during all construction activities, and would include proper handling, storage, or disposal of solid and hazardous or regulated materials.

To minimize potential impacts from hazardous and regulated materials, all fuels, waste oils, and solvents would be collected and stored in tanks or drums within a secondary containment system that consists of an impervious floor and bermed sidewalls capable of containing the volume of the largest container stored therein. The refueling of machinery would be completed in accordance with accepted industry and regulatory guidelines, and all vehicles would be required to have drip pans during storage to contain minor spills and drips. Although a major spill would be unlikely, any spill of reportable quantities would be contained immediately within an earthen dike, and the application of an absorbent (e.g., granular, pillow, sock, etc.) would be used to absorb and contain the spill.

Lead pipe or lead painted metal would be removed before renovation or demolition or separated from the demolition waste pile. It can also be recycled as scrap metal. Lead in batteries or fluorescent lamps that could be recycled or disposed as universal waste has less stringent management requirements than waste that can be disposed as dangerous waste. High-intensity

discharge lamps with regulated amounts of lead could not be disposed as universal wastes, but would be managed as dangerous wastes.

All waste oil and solvents would be recycled. All non-recyclable hazardous or regulated wastes would be collected, characterized, labeled, stored, transported, and disposed of in accordance with all Federal, state, and local regulations, including proper waste manifesting procedures.

To ensure prevention of oil pollution, a spill prevention, control, and countermeasures plan would be put in place prior to the start of construction activities, and all personnel would be briefed on the implementation and responsibilities of this plan as is typical in CBP projects. A spill of any petroleum liquids (e.g., fuel) or material listed in 40 CFR 302 Table 302.4 of a reportable quantity would be cleaned up and reported to the appropriate Federal and state agencies.

USEPA's mitigations for outdoor firing ranges call for reclaiming lead and recycling it into new shot and bullets. This would reduce the amount of virgin lead that would have to be mined. CBP would implement strategies to help prevent lead contamination. Probably the most promising pollution prevention strategy for both indoor and outdoor firing ranges is the development of the "green bullet."

The impacts of hazardous waste vary greatly with each CBP activity described in this analysis, but the overall impact can be expected to be short-term, adverse, and minor. This assumes that CBP would continue to follow the appropriate mitigation measures and BMPs to avoid accidental releases and spills of hazardous materials.

9.15 UTILITIES AND INFRASTRUCTURE

Although no significant adverse impacts were identified through the analysis of proposed utilities and infrastructure that would require mitigation measures to reduce impacts to non-significant levels, CBP could choose from among the following actions to avoid or minimize impacts on utilities and infrastructure:

- Employ strategies that in aggregate use a minimum of 20 percent less potable water than the indoor water use baseline calculated for the building, after meeting the Energy Policy Act of 1992 fixed performance requirements.
- Use water-efficient landscape and irrigation strategies, including water reuse and recycling, to reduce outdoor potable water consumption by a minimum of 50 percent over that consumed by conventional means.
- Maintain existing facilities and infrastructure, replacing those facilities and infrastructure as needed to sustain current operations in accordance with BMPs, working with Government agencies to comply with the respective regulations and avoid adverse impacts wherever possible. Wherever reasonable and possible to do so, lessen unavoidable adverse impacts through cooperative efforts with the appropriate agencies.
- When construct new, individual utilities like replacing a septic system, implement green building strategies to achieve a minimum "certified" rating under the LEED New Construction and Major Renovation Version 3.0 and comply with Federal Leadership in High Performance and Sustainable Buildings Memorandum of Understanding.

9.16 ROADWAYS AND TRAFFIC

The following steps could be taken to avoid or minimize the impacts of CBP's projects on transportation:

- Minimize construction vehicle movement during peak traffic hours;
- Place construction staging areas where they would least interfere with traffic;
- Equip construction vehicles with backing alarms, two-way radios, and "slow moving vehicle" signs when appropriate;
- Coordinate with local, state, and Federal transportation authorities when planning access or use of public roadways;
- Follow all local, state, and Federal planning guidelines and regulations when maintaining or upgrading roadway infrastructure; and,
- Comply with all traffic regulations when operating on-road, non-road, and off-road vehicles.

9.17 RECREATION

Adverse impacts of development, patrols, and other actions could be minimized by altering the current use patterns in the affected area upon consultation with appropriate land managers. The following issues should be considered when making decisions about border actions:

- Decisions about traffic routes and timing of construction should consider hiking trails, and camping and hunting areas, as well as current seasonal use patterns.
- Projects that require the acquisition of new land should take into account proximity to nearby recreation areas such as campgrounds, visitor centers, and horse stables.
- Minimizing the amount of development, traffic, and disruption in previously undisturbed areas is critical to minimizing recreation impacts. Other actions that result in construction, traffic, or noise should also be considered in planning to minimize the cumulative impacts on any one recreation area.
- Continued strengthening of partnerships, communication, and discussion with land managers of recreation areas can ensure that the placement of new infrastructure, patrol routes, and other actions would have a minimal impact.