

4. CUMULATIVE AND OTHER IMPACTS

CEQ defines cumulative impacts as the “impacts on the environment which result from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions” (40 CFR 1508.7). Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time by various agencies (Federal, state, and local) or individuals. Informed decisionmaking is served by consideration of cumulative impacts resulting from projects that are proposed, under construction, recently completed, or anticipated to be implemented in the reasonably foreseeable future.

This cumulative impacts analysis summarizes expected environmental effects from the combined impacts of past, current, and reasonably foreseeable future projects in accordance with CEQ regulations implementing NEPA and CEQ guidance on cumulative effects (CEQ 1997, 2005). The geographic scope of the analysis varies by resource area. For example, the geographic scope of cumulative impacts on resources such as noise, visual resources, soils, and vegetation is very narrow and focused on the location of the resource. The geographic scope of air quality, wildlife and sensitive species, and socioeconomics is much broader and considers more county- or regionwide activities. Projects that were considered for this analysis were identified by reviewing USBP documents, news releases, and published media reports, and through consultation with planning and engineering departments of local governments, and state and Federal agencies. Projects that do not occur in close proximity (i.e., within several miles) to the proposed fence would not contribute to a cumulative impact and are generally not evaluated further.

Cumulative Fencing, Southern Border. There are currently 62 miles of landing mat fence at various locations along the U.S./Mexico international border (CRS 2006); 14 miles of single, double, and triple fence in San Diego, California; 70 miles of new primary pedestrian fence approved and currently under construction at various locations along the U.S./Mexico international border; and fences at POE facilities throughout the southern border. In addition, 225 miles of fence are proposed (including the 44.6 miles proposed in the USBP El Centro Sector) are currently being studied for Texas, New Mexico, Arizona, and California.

Past Actions. Past actions are those within the cumulative effects analysis areas that have occurred prior to the development of this EA. The effects of these past actions are generally described in **Section 3**. For example, extensive OHV use in the Algodones Dunes has contributed to the existing environmental conditions of the area.

1 **Present Actions.** Present actions include current or funded construction
2 projects, USBP or other agency operations in close proximity to the proposed
3 fence locations, and current resource management programs and land use
4 activities within the cumulative effects analysis areas. Ongoing actions
5 considered in the cumulative effects analysis include the following:

- 6 • New Fence. In January 2004, USBP approved construction of
7 approximately 5 miles of primary pedestrian fence along the U.S./Mexico
8 international border starting approximately 2 miles west of the Calexico
9 POE (designated as Section B-3 in this EA). This fence is currently under
10 construction. In August 2007, USBP approved the installation of 7.62
11 miles of maintenance road and 2.62 miles of additional primary pedestrian
12 fence to extend the 5 miles of primary pedestrian fence previously
13 approved. Proposed fence section B-2 would be west of and connected to
14 the 2.62 miles of primary pedestrian fence approved in August 2007 (CBP
15 2007).
- 16 • New River Safety Barrier. USBP approved construction of a retractable
17 safety barrier/gate-style fence on the New River near the City of Calexico
18 (CBP 2005). This project also proposed installation of approximately 2
19 miles of permanent lighting near the City of Calexico.
- 20 • All-American Canal Relining Project (AACRP). In 1994, the Bureau of
21 Reclamation approved the AACRP and it is currently under construction
22 near proposed fence section B-5B. This project consists of constructing a
23 23-mile concrete lined canal parallel to the existing earthen canal, from 1
24 mile west of Pilot Knob to Drop 3. Construction is expected to continue
25 through Spring 2010 (USBR 1994).

26 **Reasonably Foreseeable Future Actions.** Reasonably foreseeable future
27 actions consist of activities that have been approved and can be evaluated with
28 respect to their effects. The following activities are reasonably foreseeable future
29 actions:

- 30 • SBI_{net} is a comprehensive program focused on transforming border
31 control through technology and infrastructure. The goal of the program is
32 to field the most effective proven technology, infrastructure, staffing, and
33 response platforms, and integrate them into a single comprehensive
34 border security suite for DHS. Potential future SBI_{net} projects include
35 deployment of sensor technology, communications equipment, command
36 and control equipment, fencing, barriers capable of stopping a vehicle,
37 and any required road or components such as lighting and all-weather
38 access roads (Boeing 2007). Within the next 2 years, 225 miles of
39 primary fence are proposed for construction (including the 25.2 miles
40 proposed in this EA). The first phase of construction would occur in areas
41 that have already been developed (e.g., currently contains permanent
42 vehicle barriers or temporary vehicle barriers) and, thus, little or no

1 additional environmental impacts would be expected. The second phase
2 of construction would generally occur in more remote areas.

- 3 • Construction of Primary Fence. The FY 2007 DHS Appropriations Act
4 provided \$1.2 billion for the installation of fencing, infrastructure, and
5 technology along the border (CRS 2006). CBP is proposing to construct
6 up to 225 miles of primary fence in Rio Grande Valley, Marfa, Del Rio, and
7 El Paso, Texas; Tucson and Yuma, Arizona; El Centro and San Diego,
8 California, sectors. Proposed fence section B-5B would be approximately
9 11 miles from an adjoining fence in the Yuma, Arizona, sector.

- 10 • Additional Tactical Infrastructure within El Centro Sector. USBP has
11 identified additional tactical infrastructure that might be required in the
12 future, including secondary pedestrian fences and all-weather patrol roads
13 in urban areas near POEs. While specific future operational requirements
14 are not currently known, have not been funded, and are not reasonably
15 certain to occur, additional tactical infrastructure can be identified for the
16 purposes of the cumulative effects analysis. Based on operational
17 requirements in urban areas in other sectors, the El Centro Sector can
18 reasonably foresee the need for approximately 5.9 miles of secondary
19 (double) fencing and an all-weather road in the urban area of Calexico;
20 approximately 2.4 miles of secondary fencing and an all-weather road
21 along fence section B-2; approximately 7.4 miles of secondary fencing and
22 an all-weather road along section B-3; and approximately 8.6 miles of
23 secondary fencing along section B-4. Lighting and sensors might be
24 needed in the distant future in Sections B-2, B-3, and B-4. The El Centro
25 Sector has also projected the need for a vehicle bridge with a gate
26 spanning the New River, fencing, an all-weather road, and lighting along
27 both sides of the river.

- 28 • BLM Eastern San Diego Draft Resource Management Plan. BLM has
29 prepared a Draft Resource Management Plan and EIS which will provide
30 future management guidance for use and protection of the resources on
31 approximately 100,000 acres of public lands managed by BLM's El Centro
32 Field Office in the eastern portion of San Diego County, California (BLM
33 2007b).

- 34 • City of Calexico. The City of Calexico is proposing to annex a 640-acre
35 parcel of land near the All-American Canal. The proposed annex is along
36 the eastern edge of the City of Calexico and will be developed as a
37 housing, commercial, and industrial area (CBP 2005).

- 38 • San Diego Gas & Electric (SDG&E) transmission line. SDG&E has
39 proposed to construct a new 150 mile transmission line between the Cities
40 of El Centro and San Diego. The stated purpose of the project is to bring
41 renewable energy sources into San Diego from Imperial County, reduce
42 energy costs, and improve electric reliability in the San Diego area.
43 SDG&E has filed an application with the California Public Utilities

1 Commission to construct the Sunrise Powerlink Project. A joint
2 EIS/Environmental Impact Report is being prepared (BLM 2007c).

- 3 • California Department of Transportation (Caltrans). Caltrans has several
4 road improvement projects scheduled for Imperial County in the next
5 5 years. However, the potential for adverse cumulative impacts would be
6 low as the majority of the construction would be within existing ROW.
7 These projects are in the planning stage and potential impacts are
8 unknown at this time: New Interstate 8 and Imperial Avenue interchange;
9 construction of 5.5 miles of four-lane divided highway with access control
10 from State Highway 98 to Interstate 8; upgrade existing State Route (SR)
11 111 between Ross Road and SR 78 in Imperial County; widen or realign
12 of SR 98 between SR 111 and SR 7 from four to six lanes (CBP 2007).
- 13 • Lower Colorado River Drop 2 Storage Reservoir. This project is
14 approximately 30 miles east of the city of El Centro, and might be near
15 proposed fence sections B-5A and B-5B. The plans call for a 450-acre
16 reservoir located on a 615-acre site. Administrative and office buildings as
17 well as mechanical equipment necessary for operations of the reservoir
18 would be located on the 615-acre site. In addition to the reservoir, this
19 project also includes 6.5 miles of new canal to connect the Coachella
20 Valley Canal to the reservoir and from the reservoir to the All-American
21 Canal. The total acreage expected to be impacted from this proposed
22 project is 967 acres (CBP 2007).

23 **Table 4.0-1** presents the cumulative effects that might occur from implementation
24 of the Proposed Action.

25 **4.1 LAND USE**

26 Construction of tactical infrastructure would result in minor changes to land use.
27 Recent activities that have most affected land use near the proposed tactical
28 infrastructure is the AACRP, construction of new energy and communications
29 infrastructure, and construction of other USBP tactical infrastructure. Moderate
30 cumulative impacts on land use are expected from the additive effects of the
31 past, present, and reasonably foreseeable future actions.

32 **4.2 GEOLOGY AND SOILS**

33 Additive effects include a minor increase in erosion. Construction of the tactical
34 infrastructure adjacent to the AACRP would have a minor cumulative effect on
35 soils due to construction.

36 **4.3 HYDROLOGY AND GROUNDWATER**

37 Minor adverse cumulative effects could occur on groundwater resources as a
38 groundwater use for dust suppression during various construction activities.
39

Table 4.0-1. Summary of Potential Cumulative Effects

Resource	Past Actions	Current Background Activities	Alternative 2	Known Future Actions	Cumulative Effects
Land Use	Commercial and residential development, infrastructure improvements on natural areas.	Commercial and residential development near Calexico and infrastructure improvements. BLM Eastern San Diego Draft RMP identifies management direction for lands.	CBP purchase of land or easements to construct tactical infrastructure. Natural areas developed for tactical infrastructure.	Commercial and residential development and infrastructure improvements permanently alter natural areas and agricultural lands.	Moderate adverse impacts on natural areas.
Geology and Soils	Installation of infrastructure, intrusions by cross-border violators have modified soils.	Installation of infrastructure; continued cross-border violators activities adversely affect soils.	Minor grading and recontouring would disturb soils.	Continued cross-border violators activities adversely affect soils. Installation of infrastructure.	Minor long-term impact from construction of additional infrastructure.
Hydrology and Groundwater	High dissolved solids concentrations, fluoride, and boron in two major aquifers.	Groundwater primarily used for industrial applications.	Short-term minor adverse effects from groundwater use for dust suppression during construction.	Long-term adverse effects on groundwater recharge from reservoir and canal relining projects.	Minor short-term impact from groundwater use during construction.
Surface Waters and Waters of the U.S.	Degradation of water resources due to pollution.	Surface water quality adversely impacted by development.	Soil disturbance, erosion during construction, impacts on wetlands.	Construction erosion and sediment runoff, potential oil spills and leaks.	Nonpoint discharges, construction erosion and sediment runoff, and potential oil spills and leaks.

Resource	Past Actions	Current Background Activities	Alternative 2	Known Future Actions	Cumulative Effects
Floodplains	Floodplain adversely impacted by development, decreased vegetation, increased impervious surfaces, and soil compaction.	Various storm water and floodplain management practices when activities are proposed in or near floodplains.	Short-term potential for minor impacts during construction. Only a small portion of Section B-4 is within 100-year floodplain.	Increased development activities and water reservoir and canal projects could change peak flow or floodplain capacity during high-volume storm events.	Proposed Action would not be expected to contribute to flood hazards.
Vegetation Resources	Degraded historic habitat of sensitive and common wildlife species.	Continued urbanization results in loss of native species.	Habitat fragmentation. Minor to moderate loss of native species and habitat.	Minor to moderate loss of native species and habitat.	Moderate adverse impacts on native habitats and vegetation.
Wildlife and Aquatic Resources	Loss of native habitat due to development; loss of wildlife corridors; impacted habitat and food sources.	Development continues to impact biological resources and wildlife habitat.	Minor to moderate loss of habitat, wildlife corridors, habitat fragmentation.	Minor to moderate loss of habitat and wildlife corridors.	Minor to moderate loss of habitat and wildlife corridors.
Threatened and Endangered Species	Degraded habitat impacted sensitive species.	Urbanization and agricultural development degraded habitat for sensitive species.	Minor to moderate loss of habitat, habitat fragmentation.	Loss of habitat for sensitive species.	Minor to moderate loss of habitat, habitat fragmentation.
Cultural, Historical, and Archeological Resources	Development and infrastructure improvements adversely affected cultural resources.	Development and infrastructure improvements adversely affect cultural resources; some preservation.	None.	Continued development and infrastructure improvements to adversely affect cultural resources; continued preservation efforts.	None.

Resource	Past Actions	Current Background Activities	Alternative 2	Known Future Actions	Cumulative Effects
Air Quality	State nonattainment for 8-hour O ₃ ; Federal moderate maintenance for CO; State nonattainment for PM ₁₀ and PM _{2.5} .	Existing emission sources continue to adversely affect regional air quality.	Construction activities would temporarily contribute to CO and PM emissions.	Existing emission sources continue to adversely affect regional air quality. No new major sources identified in El Centro	Construction activities would temporarily contribute to CO and PM emissions.
Noise	Commercial and residential development, vehicles dominate ambient noise near urban areas. Remote areas temporarily impacted by ORV recreational activities.	Commercial and residential development, vehicles dominate ambient noise near urban areas. Remote areas temporarily impacted by ORV recreational activities.	Short-term noise impacts from construction.	None.	Current activities would be the dominant noise source. Negligible cumulative impacts.
Visual Resources	Historical development of undeveloped lands.	Development of natural areas for community and industry infrastructure.	Constant static visual interruption at fixed points. Loss of recreational area.	Continued moderate to severe impacts to Class I and Class III Visual Resources.	Minor to moderate long-term impacts from permanent infrastructure.
Socioeconomics, Environmental Justice, and Protection of Children	Commercial and residential development around Calexico.	Commercial and residential development around Calexico.	Minor, temporary contribution to local construction industry.	Infrastructure development to support future commercial and residential development around Calexico.	Minor stimulation of local economies from construction activities. No adverse effects on environmental justice issues, children, or human health and safety.

Resource	Past Actions	Current Background Activities	Alternative 2	Known Future Actions	Cumulative Effects
Hazardous Materials and Wastes	Use of hazardous substances in vehicles. Possible illegal dumping.	Use of hazardous substances in vehicles. Possible illegal dumping.	Minor use of hazardous materials during construction.	Minor use of hazardous materials during construction.	None.

1 Potential cumulative adverse effects on Alamo River surface water flow volume,
2 duration, and water quality could result from the AACRP to the east that would
3 reduce canal seepage to the groundwater table in the Mexicali Valley by up to
4 68,000 acre-feet annually, potentially reducing the volume, duration, and quality
5 of irrigation return water into the Alamo River.

6 **4.4 SURFACE WATER AND WATERS OF THE U.S.**

7 Minor impacts on surface water and waters of the United States could occur from
8 impacts on wetlands. An unknown amount of wetlands could be permanently
9 impacted by construction of the tactical infrastructure. CBP would obtain CWA
10 Section 404 permits and mitigate the loss of wetlands. The cumulative impacts
11 on wetlands would be long-term and adverse.

12 Potential cumulative adverse effects on Alamo River surface water flow volume,
13 duration, and water quality could result from the AACRP to the east that would
14 reduce canal seepage to the groundwater table in the Mexicali Valley by up to
15 68,000 acre-feet annually, potentially reducing the volume, duration, and quality
16 of irrigation return water into the Alamo River.

17 **4.5 FLOODPLAINS**

18 Minor adverse effects from proposed construction adjacent to the 100-year
19 floodplain and from a small portion of Segment B-4 within the 100-year floodplain
20 could occur. Continued development, AACRP, and proposed Lower Colorado
21 River Storage Reservoir could affect flood dynamics, though it is assumed that
22 floodplain management would be incorporated as appropriate into all
23 development projects to reduce the potential for adverse effects on the 100-year
24 floodplain. Implementation of the Proposed Action would have a negligible long-
25 term effect on floodplain resources.

26 **4.6 VEGETATION RESOURCES**

27 Minor impacts on native species vegetation and habitat are expected from the
28 additive effects of past, present, and reasonably foreseeable future actions. As
29 discussed in **Section 3.6.2**, vegetation in the proposed construction corridor has
30 been highly disturbed by previous construction activities for the All-American
31 Canal, utility infrastructure, and USBP patrol roads. Cumulative impacts from the
32 Proposed Action would be long-term, adverse and moderate.

33 **4.7 WILDLIFE AND AQUATIC RESOURCES**

34 Minor impacts on wildlife and species are expected from the additive effects of
35 the past, present, and reasonably foreseeable future actions. Cumulative
36 impacts would mainly result from loss of habitat, habitat disturbance and
37 degradation, construction traffic, and the AACRP reducing groundwater
38 discharge to wetlands habitat. Displaced wildlife would move to adjacent habitat

1 if sufficient habitat exists. Wildlife could also be adversely impacted by noise
2 during construction, operational lighting, and loss of potential prey species.
3 Species would also be impacted by equipment spills and leaks. The permanent
4 lighting could have minor, adverse cumulative impacts on migration, dispersal,
5 and foraging activities of nocturnal species.

6 **4.8 THREATENED AND ENDANGERED SPECIES**

7 As discussed in **Section 3.8**, CBP has begun Section 7 preconsultation
8 coordination with the USFWS regarding potential impacts on listed species or
9 designated critical habitat. Potential effects of fence construction, operation, and
10 maintenance will be analyzed in both the Biological Assessment and Biological
11 Opinion. Minor adverse impacts are possible on the Algodones dunes sunflower,
12 Peirson's milkvetch, and FTHL due to loss of habitat. Special status species are
13 commonly protected because their historic range and habitat has been reduced
14 and will only support a small number of individuals. Construction, operation, and
15 maintenance of tactical infrastructure, when combined with past, present, and
16 future residential and commercial development, has the potential to result in
17 minor to major adverse cumulative impacts on these species.

18 **4.9 CULTURAL, HISTORIC, AND ARCHEOLOGICAL RESOURCES**

19 The proposed action would not result in significant impacts on cultural resources.
20 A cultural resources technical report has been submitted to the BLM for review.
21 Because there are no known cultural resources within the Proposed Action, there
22 no expected impacts on cultural resources and therefore would not contribute to
23 cumulative impacts. Recorded cultural resources are outside the immediate
24 Proposed Action and would not be directly or indirectly impacted.

25 **4.10 AIR QUALITY**

26 Minor, short-term adverse cumulative effects on air quality are expected from the
27 construction of proposed tactical infrastructure in combination with other
28 reasonably foreseeable future actions. Emissions from construction, operation,
29 and maintenance activities would not be expected to significantly affect local or
30 regional air quality.

31 **4.11 NOISE**

32 Negligible cumulative effects on ambient noise would be expected. The
33 Proposed Action would result in noise from construction, operation, and
34 maintenance of tactical infrastructure, but other known activities in the vicinity of
35 the Proposed Action would not be expected to contribute noticeably to the overall
36 noise environment.

1 **4.12 VISUAL RESOURCES**

2 Minor to moderate impacts on aesthetics and visual resources are expected from
3 the additive effects of past, present, and reasonably foreseeable future actions.
4 The presence of construction equipment would produce a short-term adverse
5 impact on visual resources. Once installed, the tactical infrastructure would
6 create a permanent and fixed visual interruption at fixed points. Adverse
7 cumulative effects could include temporary construction impacts and the
8 introduction of light poles and increased night illumination during construction.
9 Recreational activities such as star-gazing would be adversely affected by this
10 cumulative impact in night illumination.

11 **4.13 SOLID AND HAZARDOUS WASTES AND HAZARDOUS MATERIALS**

12 Construction, operation, and maintenance of tactical infrastructure would require
13 minimal quantities of hazardous materials and generate small quantities of
14 hazardous wastes. Therefore, minimal cumulative impacts on hazardous
15 materials and wastes would occur.

16 **4.14 SOCIOECONOMIS, ENVIRONMENTAL JUSTICE, AND PROTECTION**
17 **OF CHILDREN**

18 Short-term beneficial impacts on local and regional socioeconomic resources are
19 expected from the additive effects of past, present, and reasonably foreseeable
20 future actions. Economic benefits would be realized by construction companies;
21 their employers and suppliers; and by Imperial County through a minor increase
22 in tax receipts for the purchase of goods and services. Construction of tactical
23 infrastructure has the potential for minor beneficial effects from temporary
24 increases in construction jobs and the purchase of goods and services. Since
25 the construction jobs would be temporary, negligible cumulative effects on
26 population growth, income, or other services would be expected.

27 The cumulative impacts of USBP activities to reduce the flow of illegal drugs,
28 terrorists, and terrorist weapons into the United States and the concomitant
29 effects upon the Nation's health and economy, drug-related crimes, community
30 cohesion, property values, and traditional family values would be long-term and
31 beneficial, both nationally and locally. Residents of adjacent towns would benefit
32 from increased security, a reduction in illegal drug-smuggling activities and the
33 number of violent crimes, less damage to and loss of personal property, and less
34 financial burden for entitlement programs. This would be accompanied by the
35 concomitant benefits of reduced enforcement and insurance costs. There could
36 be an adverse cumulative effect on agriculture and other employers of low-
37 income workers if the labor pool of illegal aliens was substantially reduced.
38 Operation and maintenance of the tactical infrastructure has little potential for
39 cumulative impacts on socioeconomics.

4.15 IRREVERSIBLE AND IRRETRIEVABLE COMMITMENTS OF RESOURCES

An irreversible or irretrievable commitment of resources refers to impacts on or losses to resources that cannot be reversed or recovered, even after an activity has ended and facilities have been decommissioned. A commitment of resources is related to use or destruction of nonrenewable resources, and effects that loss will have on future generations. For example, if prime farmland is developed there would be a permanent loss of agricultural productivity. Construction, operation, and maintenance of tactical infrastructure involves the irreversible and irretrievable commitment of material resources and energy, land and wetland resources, biological resources, and human resources. The impacts on these resources would be permanent.

Material Resources. Material resources irretrievably utilized for the Proposed Action include steel, concrete, and other building materials (for construction of fence). Such materials are not in short supply, would not limit other unrelated construction activities, and their irretrievable use would not be considered significant.

Energy Resources. Energy resources utilized for the Proposed Action would be irretrievably lost. These include petroleum-based products (e.g., gasoline and diesel) and electricity. During construction, gasoline and diesel would be used for the operation of construction vehicles. USBP operations would not change and the amount of fuel used to operate government-owned vehicles might decrease slightly due to increased operational efficiencies. Consumption of these energy resources would not place a significant demand on their availability in the region. Therefore, no significant impacts would be expected.

Biological Resources. The Proposed Action would result in the irretrievable loss of vegetation and wildlife habitat. In the long term, construction of the tactical infrastructure would result in the loss of 324 acres of potential wildlife habitat, force the relocation of wildlife, and require the removal of natural vegetation. This result would be a permanent loss or conversion of decreasing open spaces. An unknown amount of wetlands could be permanently impacted by the Proposed Action. CBP would obtain CWA Section 404 permits and mitigate the loss of wetlands. The cumulative impacts on wetlands would be long-term and adverse.

Human Resources. The use of human resources for construction is considered an irretrievable loss, only in that it would preclude such personnel from engaging in other work activities. However, the use of human resources for the Proposed Action represents employment opportunities, and is considered beneficial.

1 **4.16 RELATIONSHIP BETWEEN THE SHORT-TERM USE OF THE**
2 **ENVIRONMENT AND LONG-TERM PRODUCTIVITY**

3 Short-term uses of the biophysical components of the human environment
4 include direct construction-related disturbances and direct impacts associated
5 with an increase in population and activity that occurs over a period of less than 5
6 years. Long-term uses of the human environment include those impacts that
7 occur over a period of more than 5 years, including permanent resource loss.
8 Activities that could result in short-term resource uses that compromise long-term
9 productivity include filling of wetlands and loss of habitat.

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