



## **SECTION 4**

### Environmental Consequences



## 4. ENVIRONMENTAL CONSEQUENCES

### 4.1 INTRODUCTION

This section presents an analysis of the potential direct and indirect impacts each alternative would have on the affected environment as characterized in **Section 3** and by the data in the technical appendices. Each alternative was evaluated for its potential to affect physical, biological, and socioeconomic resources.

The following discussion elaborates on the nature of the characteristics that might relate to various impacts:

- *Short-term or long-term.* These characteristics are determined on a case-by-case basis and do not refer to any rigid time period. In general, short-term impacts are those that would occur only with respect to a particular activity or for a finite period or only during the time required for construction or installation activities. Long-term impacts are those that are more likely to be persistent and chronic.
- *Direct or indirect.* A direct impact is caused by an alternative and occurs contemporaneously at or near the location of the action. An indirect impact is caused by an alternative and might occur later in time or be farther removed in distance but still be a reasonably foreseeable outcome of the action. For example, a direct impact of erosion on a stream might include sediment-laden waters in the vicinity of the action, whereas an indirect impact of the same erosion might lead to lack of spawning and result in lowered reproduction rates of indigenous fish downstream.
- *Negligible, minor, moderate, or major.* These relative terms are used to characterize the magnitude or intensity of an impact. Negligible impacts are generally those that might be perceptible but are at the lower level of detection. A minor impact is slight, but detectable. A moderate impact is readily apparent. A major impact is one that is severely adverse or exceptionally beneficial.
- *Significance.* Significant impacts are those that, in their context and due to their intensity (severity), meet the thresholds for significance set forth in CEQ regulations (40 CFR 1508.27). This EIS meets the agencies' requirements to prepare a detailed statement on major Federal actions significantly affecting the quality of the human environment (42 U.S.C. 102.2(c)).
- *Adverse or beneficial.* An adverse impact is one having adverse, unfavorable, or undesirable outcomes on the man-made or natural environment. A beneficial impact is one having positive outcomes on the man-made or natural environment. A single act might result in adverse impacts on one environmental resource and beneficial impacts on another resource.

- 1 • *Context.* The context of an impact can be localized or more widespread  
2 (e.g., regional).
- 3 • *Intensity.* The intensity of an impact is determined through consideration  
4 of several factors, including whether an alternative might have an adverse  
5 impact on the unique characteristics of an area (e.g., historical resources,  
6 ecologically critical areas), public health or safety, or endangered or  
7 threatened species or designated critical habitat. Impacts are also  
8 considered in terms of their potential for violation of Federal, state, or local  
9 environmental law; their controversial nature; the degree of uncertainty or  
10 unknown impacts, or unique or unknown risks; if there are precedent-  
11 setting impacts; and their cumulative impact (see **Section 5**).

## 12 4.2 AIR QUALITY

13 Environmental consequences on local and regional air quality conditions near a  
14 proposed Federal action are determined based upon the increases in regulated  
15 pollutant emissions compared to existing conditions and ambient air quality.  
16 Specifically, the impact in NAAQS “attainment” areas would be considered  
17 significant if the net increases in pollutant emissions from the Federal action  
18 would result in any one of the following scenarios:

- 19 • Cause or contribute to a violation of any national or state ambient air  
20 quality standard
- 21 • Expose sensitive receptors to substantially increased pollutant  
22 concentrations
- 23 • Represent an increase of 10 percent or more in an affected AQCR  
24 emissions inventory
- 25 • Exceed any Evaluation Criteria established by a SIP.

### 26 4.2.1 Alternative 1: No Action Alternative

27 Under the No Action Alternative, USBP would not construct or maintain new  
28 tactical infrastructure along the 21 sections in the USBP Rio Grande Valley  
29 Sector and operational activities would remain unchanged. Therefore, the No  
30 Action Alternative would not create any additional impacts on air quality beyond  
31 those that are already occurring, as described in **Section 3.2**.

### 32 4.2.2 Alternative 2: Routes A and B

#### 33 Route A

34 Regulated pollutant emissions associated with Route A would not contribute to or  
35 affect local or regional attainment status with the NAAQS. Route A activities  
36 would generate air pollutant emissions from the proposed construction projects,

1 maintenance activities, and the operation of generators to supply power to  
2 construction equipment. BMPs would include a Dust Control Plan.

3 **Proposed Construction Projects.** Minor, short-term, adverse impacts would be  
4 expected from construction emissions and land disturbance associated with  
5 Route A. The proposed project would result in impacts on regional air quality  
6 during construction activities, primarily from site-disturbing activities and  
7 operation of construction equipment.

8 The construction projects would generate total suspended particulate and PM<sub>10</sub>  
9 emissions as fugitive dust from ground-disturbing activities (e.g., grading,  
10 trenching, soil piles) and from combustion of fuels in construction equipment.  
11 Fugitive dust emissions would be greatest during the initial site preparation  
12 activities and would vary from day to day depending on the construction phase,  
13 level of activity, and prevailing weather conditions. The quantity of uncontrolled  
14 fugitive dust emissions from a construction site is proportional to the area of land  
15 being worked and the level of construction activity.

16 Construction operations would also result in emissions of criteria pollutants as  
17 combustion products from construction equipment. These emissions would be of  
18 a temporary nature. The NAAQS emissions factors and estimates were  
19 generated based on guidance provided in USEPA AP-42, Volume II, *Mobile*  
20 *Sources*. Fugitive dust emissions for various construction activities were  
21 calculated using emissions factors and assumptions published in USEPA's AP-  
22 42 Section 11.9. The emissions for CO<sub>2</sub> were calculated using emission  
23 coefficients reported by the Energy Information Administration (EIA 2007).

24 For purposes of this analysis, the project duration and affected project site area  
25 that would be disturbed (presented in **Section 2**) were used to estimate fugitive  
26 dust and all other pollutant emissions. The construction emissions presented in  
27 **Table 4.2-1** include the estimated annual construction PM<sub>10</sub> emissions  
28 associated with Route A. These emissions would produce slightly elevated  
29 short-term PM<sub>10</sub> ambient air concentrations. However, the impacts would be  
30 temporary, and would fall off rapidly with distance from the proposed construction  
31 sites. As seen in **Table 4.2-1**, the emissions of NAAQS pollutant is high and  
32 could contribute to the deterioration of the air quality in the region. However, the  
33 impact of this alternative on air quality does not exceed 10 percent of the regional  
34 values.

35 The construction emissions presented in **Table 4.2-1** include the estimated  
36 annual emissions from construction equipment exhaust associated with Route A  
37 in Calendar Year (CY) 2008 and operation of agricultural mowers and diesel-  
38 powered generators. Early phases of construction projects involve heavier diesel  
39 equipment and earthmoving, resulting in higher NO<sub>x</sub> and PM<sub>10</sub> emissions. Later  
40 phases of construction projects involve more light gasoline equipment and  
41 surface coating, resulting in more CO and VOC emissions. However, the  
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**Table 4.2-1. Estimates of Total Proposed Construction Emissions from Route A in Tons Per Year**

Description	NO <sub>x</sub>	VOC	CO	CO <sub>2</sub>	SO <sub>x</sub>	PM <sub>10</sub>
Construction Emissions	470.443	70.127	549.588	55.00	9.409	662.118
Maintenance Emissions	0.042	0.005	0.021	0.20	0.010	0.005
Generator Emissions	22.777	1.859	4.907	100.0	1.498	1.601
<b>Total Alternative 2 Route A Emissions</b>	<b>493.263</b>	<b>71.992</b>	<b>554.516</b>	<b>155.200</b>	<b>10.917</b>	<b>663.724</b>
Federal <i>de minimis</i> Threshold	NA	NA	NA	NA	NA	NA
BLIAQCR Regional Emissions	44,137	73,577	317,422	995,000	2,940	132,788
<b>Percent of BLIAQCR Regional Emissions</b>	<b>1.118</b>	<b>0.098</b>	<b>0.175</b>	<b>0.016</b>	<b>0.369</b>	<b>.499</b>

3 Source: USEPA 2007b

4 impacts would be temporary, fall off rapidly with distance from the proposed  
5 construction site, and would not result in any long-term impacts.

6 **Maintenance Activities.** The pedestrian fence and patrol road would require  
7 mowing approximately two times per year to maintain vegetation height and allow  
8 enhanced visibility and security. It was assumed that two 40-horsepower (hp)  
9 agricultural mowers would mow the vegetation in the project area approximately  
10 14 days per year. No adverse impacts on local or regional air quality are  
11 anticipated from these future maintenance activities.

12 **Generators.** Route A activities would require six diesel-powered generators to  
13 power construction equipment. It is assumed that these generators would be  
14 approximately 75 hp and operate approximately 8 hours per day for 190 working  
15 days. The emissions factors and estimates were generated based on guidance  
16 provided in USEPA AP-42, Volume I, *Stationary Internal Combustion Sources*.  
17 According to TAC Title 30, internal combustion engines greater than 500 brake  
18 horsepower require an operating permit (TAC 2007). Therefore, the generators  
19 that would be associated with Route A activities are exempt from requiring an  
20 operating permit from the TCEQ.

21 **Greenhouse Gases.** USEPA has estimated that the total greenhouse emissions  
22 for Texas was 189 million metric tons of carbon equivalent (MMTCE) in 1999. Of  
23 this, of this an estimated 995,000 tons of CO<sub>2</sub> are associated with the BLIAQCR  
24 regions. Therefore construction emissions of CO<sub>2</sub> represent less than 10 percent  
25 of the regional emissions (USEPA 2007c).

1 After construction is completed, normal border patrol schedules would continue.  
2 The vehicles used for surveillance of the existing border area are generating CO<sub>2</sub>  
3 that is accounted for in the Texas greenhouse gas inventory. No new sources of  
4 CO<sub>2</sub> would result from Route A. Therefore, no net increase of greenhouse  
5 emissions would be expected. Emissions factors, calculations, and estimates of  
6 emissions are shown in detail in **Appendix K**.

7 **Summary.** **Table 4.2-1** illustrates that the emissions from Route A would be  
8 much less than 10 percent of the emissions inventory for BLIAQCR (USEPA  
9 2007b). The estimated annual CO<sub>2</sub> emissions of power plants within the  
10 BLIAQCR is 775,000 tons while vehicles add another estimated 220,000 tons.  
11 Therefore, no adverse impacts on regional or local air quality are anticipated from  
12 implementation of Route A.

13 According to 40 CFR Part 81, there are no Class I areas in the vicinity of the  
14 Route A. Therefore, Federal PSD regulations would not apply.

15 In summary, no significant adverse impacts on regional or local air quality are  
16 anticipated from implementation of Route A. A conformity determination in  
17 accordance with 40 CFR 93-153(1) is not required, as the total of direct and  
18 indirect emissions from Route A would not be regionally significant (e.g., the  
19 emissions are not greater than 10 percent of the BLIAQCR emissions inventory).  
20 Emissions factors, calculations, and estimates of emissions for Alternative 2  
21 Route A are shown in detail in **Appendix K**.

## 22 Route B

23 The air quality impacts associated with Route B would be expected to be the  
24 same as those depicted for Route A. This is because the overall length of the  
25 proposed project corridors and construction emissions for Route A and Route B  
26 would be similar. Therefore, the analysis presented for Route A is applicable to  
27 Route B. **Table 4.2-2** illustrates that the emissions from Route B would be less  
28 than 10 percent of the BLIAQCR inventory (USEPA 2007b). Emissions factors,  
29 calculations, and estimates of emissions for Alternative 2 Route B are shown in  
30 detail in **Appendix K**.

### 31 4.2.3 Alternative 3: Secure Fence Act Alignment Alternative

32 Alternative 3 would generate air pollutant emissions from the proposed  
33 construction projects, maintenance activities, and the operation of generators to  
34 supply power to construction equipment.

35 **Proposed Construction Projects.** Major short-term adverse impacts would be  
36 expected from construction emissions and land disturbance as a result of  
37 implementing Alternative 3. The proposed project would result in impacts on  
38 regional air quality during construction activities, primarily from site-disturbing  
39 activities and operation of construction equipment.

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**Table 4.2-2. Estimates of Total Proposed Construction Emissions from Route B in Tons Per Year**

Description	NO <sub>x</sub>	VOC	CO	CO <sub>2</sub>	SO <sub>x</sub>	PM <sub>10</sub>
Construction Emissions	470.443	70.127	549.588	55.00	9.409	662.118
Maintenance Emissions	0.042	0.005	0.021	0.20	0.010	0.005
Generator Emissions	22.777	1.859	4.907	100.0	1.498	1.601
<b>Total Alternative 2 Route B Emissions</b>	<b>493.263</b>	<b>71.992</b>	<b>554.516</b>	<b>155.200</b>	<b>10.917</b>	<b>663.724</b>
Federal <i>de minimis</i> Threshold	NA	NA	NA	NA	NA	NA
BLIAQCR Regional Emissions	44,137	73,577	317,422	995,000	2,940	132,788
<b>Percent of BLIAQCR Regional Emissions</b>	<b>1.118</b>	<b>0.098</b>	<b>0.175</b>	<b>0.016</b>	<b>0.369</b>	<b>0.499</b>

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Source: USEPA 2007b

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The construction projects would generate total suspended particulate and PM<sub>10</sub> emissions as fugitive dust from ground-disturbing activities (e.g., grading, trenching, soil piles) and from combustion of fuels in construction equipment. Fugitive dust emissions would be greatest during the initial site preparation activities and would vary from day to day depending on the construction phase, level of activity, and prevailing weather conditions. The quantity of uncontrolled fugitive dust emissions from a construction site is proportional to the area of land being worked and the level of construction activity.

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Construction operations would also result in emissions of criteria pollutants as combustion products from construction equipment. These emissions would be of a temporary nature. The emissions factors and estimates were generated based on guidance provided in USEPA AP-42, Volume II, *Mobile Sources*. Fugitive dust emissions for various construction activities were calculated using emissions factors and assumptions published in USEPA's AP-42 Section 11.9.

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For purposes of this analysis, the project duration and affected project site area that would be disturbed (presented in **Section 2**) was used to estimate fugitive dust and all other criteria pollutant emissions. The construction emissions presented in **Table 4.2-3** include the estimated annual construction PM<sub>10</sub> emissions associated with Alternative 3. These emissions would produce slightly elevated short-term PM<sub>10</sub> ambient air concentrations. However, the impacts would be temporary, and would fall off rapidly with distance from the proposed construction sites.

1 **Table 4.2-3. Estimates of Total Proposed Construction Emissions**  
 2 **from Alternative 3 in Tons Per Year**

Description	NO <sub>x</sub>	VOC	CO	CO <sub>2</sub>	SO <sub>x</sub>	PM <sub>10</sub>
Construction Emissions	2,927.48	436.388	3,419.94	137.50	58.550	1,713.357
Maintenance Emissions	0.127	0.015	0.064	2.0	0.030	0.015
Generator Emissions	22.777	1.859	4.907	100.0	1.498	1.601
<b>Total Alternative 3 Emissions</b>	<b>2,950.39</b>	<b>438.26</b>	<b>3,424.958</b>	<b>239.50</b>	<b>60.078</b>	<b>1,714.973</b>
Federal <i>de minimis</i> Threshold	NA	NA	NA	NA	NA	NA
BLIAQCR Regional Emissions	44,137	73,577	317,422	995,000	2,940	132,788
<b>Percent of BLIAQCR Regional Emissions</b>	<b>6.68</b>	<b>0.596</b>	<b>1.079</b>	<b>0.024</b>	<b>2.04</b>	<b>1.292</b>

3 Source: USEPA 2007b

4 Specific information describing the types of construction equipment required for a  
 5 specific task, the hours the equipment is operated, and the operating conditions  
 6 vary widely from project to project. For the purposes of this analysis, these  
 7 parameters were estimated using established methodologies for construction and  
 8 experience with similar types of construction projects. Combustion by-product  
 9 emissions from construction equipment exhausts were estimated using USEPA's  
 10 AP-42 emissions factors for heavy-duty, diesel-powered construction equipment.

11 The construction emissions presented in **Table 4.2-3** include the estimated  
 12 annual emissions from construction equipment exhaust associated with  
 13 Alternative 3 in CY 2008 and operation of agricultural mowers and diesel-  
 14 powered generators. As with fugitive dust emissions, combustion emissions  
 15 would produce slightly elevated air pollutant concentrations. Early phases of  
 16 construction projects involve heavier diesel equipment and earthmoving,  
 17 resulting in higher NO<sub>x</sub> and PM<sub>10</sub> emissions. Later phases of construction  
 18 projects involve more light gasoline equipment and surface coating, resulting in  
 19 more CO and VOC emissions. However, the impacts would be temporary, fall off  
 20 rapidly with distance from the proposed construction site, and would not result in  
 21 any long-term impacts.

22 **Maintenance Activities.** The pedestrian fence and patrol road would require  
 23 mowing approximately two times per year to maintain vegetation height and allow  
 24 enhanced visibility and security. It was assumed that six 40-hp agricultural  
 25 mowers would mow the vegetation in the project area approximately 14 days per  
 26 year. Emissions from these agricultural mowers would be minimal. No adverse

1 impacts on local or regional air quality are anticipated from these future  
2 maintenance activities.

3 **Generators.** Alternative 3 would require six diesel powered generators to power  
4 construction equipment. It is assumed that these generators would be  
5 approximately 75 hp and operate approximately 8 hours per day for 190 working  
6 days. Emissions from these diesel generators would be minimal. Operational  
7 emissions associated with Alternative 3 would not result in an adverse impact on  
8 air quality. The emissions factors and estimates were generated based on  
9 guidance provided in USEPA AP-42, Volume I, *Stationary Internal Combustion*  
10 *Sources*. According to TAC Title 30, internal combustion engines greater than  
11 500 brake horsepower require an operating permit (TAC 2007). Therefore, the  
12 generators under Alternative 3 are exempt from requiring an operating permit  
13 from the TCEQ.

14 **Summary.** Since the BLIAQCR is within an area classified as being in  
15 attainment for all NAAQS criteria pollutants, General Conformity Rule  
16 requirements are not applicable to Alternative 3. **Table 4.2-3** illustrates that the  
17 emissions from Alternative 3 would be less than 10 percent of the BLIAQCR  
18 inventory (USEPA 2002b). **Table 4.2-3** illustrates that the emissions from Route  
19 B would be less than 10 percent of the BLIAQCR inventory (USEPA 2007b).

20 According to 40 CFR Part 81, there are no Class I areas in the vicinity of  
21 Alternative 3. Therefore, Federal PSD regulations would not apply.

22 **Greenhouse Gases.** USEPA has estimated that the total greenhouse emissions  
23 for Texas was 189 million metric tons of carbon equivalent (MMTCE) in 1999. Of  
24 this, of this an estimated 995,000 tons of CO<sub>2</sub> are associated with the BLIAQCR  
25 regions. Therefore construction emissions of CO<sub>2</sub> represent less than 10 percent  
26 of the regional emissions (USEPA 2007c).

27 After construction is completed, normal border patrol schedules would continue.  
28 The vehicles used for surveillance of the existing border area are generating CO<sub>2</sub>  
29 that is accounted for in the Texas greenhouse gas inventory. No new sources of  
30 CO<sub>2</sub> would result from Alternatives 3. Therefore, no net increase of greenhouse  
31 emissions would be expected. Emissions factors, calculations, and estimates of  
32 emissions are shown in detail in **Appendix K**.

### 33 4.3 NOISE

#### 34 4.3.1 Alternative 1: No Action Alternative

35 Under the No Action Alternative, current activities as described in **Section 3.3**  
36 would be the dominant source of noise and there would be no short- or long-term  
37 changes to the noise environment.

## 1 4.3.2 Alternative 2: Routes A and B

### 2 Route A

3 Short-term moderate adverse impacts would be associated with Route A.  
4 Sources of noise from the implementation of Route A would include blasting,  
5 operation of construction equipment, and noise from construction vehicles.  
6 Noise from construction activities and vehicle traffic can impact wildlife as well as  
7 humans. Impacts on nesting, feeding, and migration could all occur on various  
8 species due to construction noise. For specific information regarding impacts on  
9 wildlife from noise, see **Section 4.8.2**.

10 **Construction Noise.** The construction of the fence sections and related tactical  
11 infrastructure, such as the patrol and access roads and construction staging  
12 areas, would result in noise impacts on populations in the vicinity of the proposed  
13 sites. Construction of the fence sections and the patrol roads adjacent to the  
14 fence would result in grading and construction noise. Populations that could be  
15 impacted by construction noise include adjacent residents, personnel visiting one  
16 of the wildlife refuges or recreation areas, or employees in nearby office or retail  
17 buildings. Noise levels for the construction of Route A were calculated using  
18 equipment typical of construction projects. Noise from construction assumes  
19 several different pieces of construction equipment operating simultaneously (see  
20 **Table 3.3-1**). Because noise attenuates over distance, a gradual decrease in  
21 noise level occurs the further a receptor is away from the source of noise.  
22 Construction noise levels would decrease as the distance increases from the  
23 source. At 50 feet the noise level would be 85 dBA, at 300 feet the noise level  
24 would be 70 dBA, and at 5,280 feet (i.e., 1 mile) the noise level would be 45 dBA.

25 Implementation of Route A would have temporary impacts on the noise  
26 environment from the use of heavy equipment during construction activities.  
27 However, noise generation would last only for the duration of construction  
28 activities and would be isolated to normal working hours (i.e., between 7:00 a.m.  
29 and 5:00 p.m.). Therefore, it is anticipated that implementation of Route A would  
30 have negligible impacts as a result of the construction activities.

31 Route A would impact residential areas as well as recreational facilities and  
32 wilderness areas. In general, users of recreational facilities and sites anticipate a  
33 quiet environment. Noise from construction would impact the ambient acoustical  
34 environment around these sites. While construction would be a temporary  
35 source of noise, and no significant impacts would be anticipated at recreational  
36 sites or wilderness areas, noise from construction would reach areas that are  
37 anticipated to have low levels of ambient noise.

38 **Vehicular Noise.** Noise impacts from increased construction traffic would be  
39 temporary in nature. These impacts would most likely be confined to normal  
40 working hours (i.e., between 7:00 a.m. and 5:00 p.m.) and would last only as long  
41 as the construction activities were ongoing. Most of the major roadways in the

1 vicinity pass by residential areas. Therefore, it is anticipated that Route A would  
2 have short-term minor adverse noise impacts as a result of the increase in traffic,  
3 most notably in the areas around Brownsville, McAllen, Progreso, Santa Maria,  
4 and Relampago.

#### 5 Route B

6 The noise impacts associated with Route B would be expected to be the same as  
7 those described above for Route A because the overall length of the proposed  
8 project corridor and duration of construction activities for Route A and Route B  
9 would be similar.

### 10 4.3.3 Alternative 3: Secure Fence Act Alignment Alternative

11 Short-term moderate adverse impacts would be expected under Alternative 3.  
12 Under Alternative 3, primary and secondary fences would be constructed 130  
13 feet apart along the same route as Alternative 2, Route B. Noise impacts from  
14 Alternative 3 would be slightly greater than those discussed under Alternative 2.  
15 Residences would be closer to the secondary fence; therefore, noise impacts  
16 from construction equipment would be slightly higher than under Alternative 2.

## 17 4.4 LAND USE

### 18 4.4.1 Alternative 1: No Action Alternative

19 In some locations, land values and land uses (including potential development)  
20 are currently adversely affected by illegal border crossings. Under the No Action  
21 Alternative, land uses and values as described in **Section 3.4** may continue to be  
22 adversely affected and degradation could increase.

### 23 4.4.2 Alternative 2: Routes A and B

#### 24 Route A

25 Constructing the proposed tactical infrastructure would result in long-term minor  
26 adverse impacts on land use. The severity of the impact would vary depending  
27 on the need for rezoning to accommodate the fence sections, and patrol roads.  
28 USBP might be required to obtain a permit or zoning variance based on local  
29 restrictions and ordinances. Short-term minor adverse impacts would occur from  
30 construction. Impacts on land use would vary depending on potential changes in  
31 land use and the land use of adjacent properties.

32 For the purposes of this EIS, a land use analysis was conducted using the  
33 National Land Cover Dataset. The National Land Cover Dataset is the first land  
34 cover mapping project with a national (conterminous) scope. It is likely the most  
35 widely used land cover dataset in the United States and no other national land  
36 cover mapping program had ever been undertaken. The National Land Cover

1 Dataset provides 21 different land cover classes for the lower 48 states. The 21  
 2 different land cover classes were generalized into the following 4 categories:  
 3 agricultural, developed, parks and refuges, and undeveloped. The proposed  
 4 project corridor is classified by approximately 22 percent agricultural, 47 percent  
 5 developed, 10 percent parks and refuges, and 21 percent undeveloped land.

6 **Table 4.4-1** outlines the proposed tactical infrastructure section by the existing  
 7 communities within or adjacent to Route A that would potentially be affected by  
 8 the proposed tactical infrastructure.

9 **Table 4.4-1. Communities Potentially Affected by Route A**

Proposed Tactical Infrastructure Section Number	Community Affected
O-1	Roma
O-2	Rio Grande City
O-3	Los Ebanos
O-4	Peñitas
O-5	Granjeno
O-6	Hidalgo
O-7	Agriculture south of Donna
O-8	Agriculture south of Donna
O-9	Progreso Lakes Community
O-10	Progreso
O-11	Agriculture south of Santa Maria
O-12	Los Indios
O-13	Los Indios
O-14	Los Indios
O-15	La Paloma
O-16	Encatada-Ranchito El Calaboz
O-17	San Pedro/River Bend Community
O-18	Brownsville
O-19	Brownsville
O-20	Brownsville
O-21	Brownsville

10 Construction of the proposed tactical infrastructure sections would require the  
 11 government to acquire various interests in land. Under current law, the Secretary  
 12 of Homeland Security has the authority to contract for or buy an interest in land

1 that is adjacent to or in the vicinity of the international land border when the  
2 Secretary deems the land essential to control and guard the boundaries and  
3 borders of the United States (8 U.S.C. 1103(b)).

4 Because the proposed tactical infrastructure sections would traverse both public  
5 and private lands, various methods could be used to acquire the necessary  
6 interests in land. These methods include, among other things, acquiring  
7 permanent easements, ROW, or outright purchase.

8 For those proposed tactical infrastructure sections that are on Federal lands, the  
9 most likely means of acquisition would be an ROW obtained from the relevant  
10 Federal land manager. On private land, the government would likely purchase  
11 the land or some interest in land from the relevant land owner. Acquisition from  
12 private landowners is a negotiable process that is carried out between the  
13 government and the landowner on a case-by-case basis. The government also  
14 has the statutory authority to acquire such interests through eminent domain.

15 Agricultural lands within the 60-foot proposed project corridor would not be  
16 available for future crop production. In addition, residential, industrial,  
17 commercial, and undeveloped lands within proposed project corridor would not  
18 be available for future development.

19 Landowners whose properties would be affected could receive a gate within the  
20 fence that would allow them to access other portions of their property to reduce  
21 potential inconvenience.

22 Short-term minor indirect adverse impacts on recreation would be expected  
23 during the construction activities associated with Route A. However, impacts  
24 would be localized and short-term. Long-term minor adverse impacts on  
25 recreation would be expected after construction because access to recreational  
26 areas along the proposed tactical infrastructure sections could be limited or  
27 restricted to potential users. Long-term indirect beneficial impacts on  
28 recreational areas could occur as a result of decreased cross border violators  
29 coming into these recreational areas. In addition, by reducing the amount of  
30 illegal traffic within and adjacent to the project area, disturbance to lands on the  
31 U.S. side of the proposed fence would be reduced.

32 Land use in the areas between the 21 proposed fence sections could be  
33 adversely impacted by the deterrent impacts the fence sections would have by  
34 the funneling of illegal cross border activities into those areas. Since the  
35 locations of the proposed tactical infrastructure sections are based on USBP  
36 operational requirements including the ability to make apprehensions, adverse  
37 impacts would be expected to be minor.

1 Route B

2 Similar impacts to those described above for Route A would be expected. The  
3 figures in **Appendix F** show the locations of the proposed tactical infrastructure  
4 sections and the proximity of adjacent and intersecting land. For the purposes of  
5 this EIS, a land use analysis was conducted using the National Land Cover  
6 Dataset. The proposed project corridor is classified by approximately 22 percent  
7 agricultural, 46 percent developed (1 percent less than Route A), 9 percent parks  
8 and refuges (1 percent less than Route A), and 23 percent undeveloped land (2  
9 percent more than Route A).

10 4.4.3 Alternative 3: Secure Fence Act Alignment Alternative

11 Alternative 3 would have similar impacts to Alternative 2. The figures in  
12 **Appendix F** show the location of the proposed tactical infrastructure sections  
13 and the proximity of adjacent and intersecting land. For the purposes of this EIS,  
14 a land use analysis was conducted using the National Land Cover Dataset. The  
15 proposed project corridor is classified by approximately 28 percent agricultural,  
16 41 percent developed, 9 percent parks and refuges, and 22 percent undeveloped  
17 land.

18 4.5 GEOLOGY AND SOILS

19 4.5.1 Alternative 1: No Action Alternative

20 The No Action Alternative would result in continuation of the existing condition of  
21 geologic resources, as discussed in **Section 3.5.1**. No impacts on geologic  
22 resources would occur as a result of the construction, operation, or maintenance  
23 of proposed tactical infrastructure. In the areas of the proposed tactical  
24 infrastructure sections, cross border violators tend to trample footpaths, leading  
25 to a minor long-term adverse impact on soils due to compaction. This condition  
26 would continue under the No Action Alternative.

27 4.5.2 Alternative 2: Routes A and B

28 Route A

29 **Physiography and Topography.** Short- and long-term minor adverse impacts  
30 on the natural topography would be expected. Grading, contouring, and  
31 trenching associated with the installation of the proposed tactical infrastructure  
32 sections would impact approximately 508 acres, which would alter the existing  
33 topography. However, the existing topography of much of the proposed project  
34 corridor was previously altered to construct the levees, provide access roads,  
35 and to level agricultural fields for irrigation.

36 **Geology.** Short- and long-term negligible to minor adverse impacts on geologic  
37 resources could occur at locations if bedrock is at the surface and blasting would

1 be necessary to grade for fence placement or patrol road development. Geologic  
2 resources could affect the placement of the fence or patrol roads due to the  
3 occurrence of bedrock at the surface, or as a result of structural instability. Site-  
4 specific geotechnical surveys would be conducted prior to construction to  
5 determine depth to bedrock. In most cases, it is expected that project design and  
6 engineering practices could be implemented to mitigate geologic limitations to  
7 site development.

8 **Soils.** Short-term minor direct adverse impacts on soils would be expected. Soil  
9 disturbance and compaction due to grading, contouring, and trenching  
10 associated with the installation of the proposed tactical infrastructure sections  
11 would impact approximately 508 acres.

12 The proposed construction activities would be expected to result in an increase in  
13 soil erosion, especially in the western portion of the proposed project corridor  
14 associated with Route A (in Sections O-1, O-2, and O-3). This area is  
15 characterized by low ridges with moderately steep-sided bluffs with narrow  
16 arroyos. Soil disturbance on steep slopes has the potential to result in excessive  
17 erosion due to instability of the disturbed soils and high runoff energy and  
18 velocity. Sediments washed from construction sites would be carried to and  
19 deposited in the Rio Grande. In addition, wind erosion has the potential to  
20 impact disturbed soils where vegetation has been removed due to the semi-arid  
21 climate of the region. Construction activities would be expected to directly impact  
22 the existing soils as a result of grading, excavating, placement of fill, compaction,  
23 and mixing or augmentation necessary to prepare the sites for development of  
24 the fence sections and patrol roads and associated utility lines. Following  
25 construction activities, the areas disturbed would be revegetated with native  
26 species to the maximum extent practicable to reestablish native plant  
27 communities and help stabilize soils.

28 Because proposed construction within most proposed tactical infrastructure  
29 sections would result in a soil disturbance of greater than 5 acres, authorization  
30 under TCEQ Construction General Permits (TXR150000) would be required.  
31 Construction activities subject to these permits include clearing, grading, and  
32 disturbances to the ground, such as stockpiling or excavation, but do not include  
33 regular maintenance activities performed to restore the original line, grade, or  
34 capacity of the facility. The Construction General Permits require the  
35 development and implementation of Storm Water Pollution Prevention Plans  
36 (SWPPPs).

37 The SWPPPs should contain one or more site maps that show the construction  
38 site perimeter, existing and proposed buildings, lots, roadways, storm water  
39 collection and discharge points, general topography both before and after  
40 construction, and drainage patterns across the project. The SWPPPs must list  
41 BMPs the discharger will use to protect storm water runoff along with the  
42 locations of those BMPs. Additionally, the SWPPPs must contain a visual  
43 monitoring program, a chemical monitoring program for nonvisible pollutants to

1 be implemented if there is a failure of BMPs, and a sediment monitoring plan if  
2 the site discharges directly to a water body listed on the 303(d) list for sediment.  
3 Part III.F of the Construction General Permit describes the elements that must be  
4 contained in an SWPPP.

5 Long-term minor direct adverse impacts on prime farmland soils in Hidalgo and  
6 Cameron counties would occur as a result of construction activities. No soils  
7 associated with farmland of local, unique, or statewide importance are identified  
8 for Starr, Hidalgo, and Cameron counties. In areas not currently being used for  
9 agriculture, the proposed project corridor would be linear and limited in extent,  
10 therefore any impacts on the areas considered prime farmland would be  
11 considered minor. In the areas where crops, such as sorghum and sugar cane,  
12 are currently being grown in the proposed project corridor, construction would  
13 result in the permanent loss of existing cropland.

14 Soils in open areas between the 21 proposed tactical infrastructure sections  
15 would be adversely impacted by the funneling of cross border violators into the  
16 areas where there would be no fence. Increased foot traffic between fence  
17 sections would reduce vegetation, disturb soils, and lead to increased soil  
18 erosion. Since the locations of the 21 fence sections were based on USBP  
19 operational requirements including the ability to make apprehensions, the extent  
20 of the disturbance would be limited and the impacts would be minor, long-term,  
21 and adverse.

## 22 Route B

23 Route B would result in similar environmental impacts on physiographic,  
24 topographic, geologic, and soils resources as described above for Route A.  
25 Slight differences in prime farmland soil acreages impacted would be anticipated  
26 as a result of implementing Route B.

### 27 4.5.3 Alternative 3: Secure Fence Act Alignment Alternative

28 The Secure Fence Act Alignment Alternative would result in similar  
29 environmental impacts on physiographic, topographic, geologic, and soils  
30 resources as described above for Alternative 2. However, the magnitude of the  
31 impacts would affect a larger area, due to the additional fence and overall wider  
32 corridor. Approximately 1,270 acres would be impacted.

## 33 4.6 WATER RESOURCES

### 34 4.6.1 Alternative 1: No Action Alternative

35 Under the No Action Alternative, the Proposed Action would not be implemented.  
36 As a result, there would be no change from baseline conditions, as described in  
37 **Section 3.6**. Impacts on water resources could continue to occur, such as the  
38 impacts of regional drought or other natural events affecting precipitation

1 patterns. In addition, adverse impacts associated with water contamination due  
2 to cross border violators would continue.

### 3 4.6.2 Alternative 2: Routes A and B

#### 4 Route A

5 **Hydrology and Groundwater.** Short- and long-term negligible direct adverse  
6 impacts on the hydrology of the Rio Grande would be expected to occur as a  
7 result of the grading and contouring associated with Route A in Sections O-1,  
8 O-2, and O-3. Grading and contouring would be expected to alter the  
9 topography and remove vegetation of approximately 105 acres within the  
10 floodplain of the Rio Grande, which could in turn increase erosion potential and  
11 increase runoff during heavy precipitation events. Revegetating the area with  
12 native vegetation following construction along with other BMPs to abate runoff  
13 and wind erosion could reduce the impacts of erosion and runoff. Additionally,  
14 the small increase in impervious surface within the floodplain would result in  
15 negligible increases in the quantity and velocity of storm water flows to the Rio  
16 Grande. As required by the Texas Construction General Permit (TXR150000),  
17 BMPs would be developed as part of the required SWPPPs to manage storm  
18 water both during and after construction. Therefore, impacts would be expected  
19 to be negligible.

20 No impacts on hydrology would be expected for Sections O-4 through O-21.  
21 These sections would be constructed and operated behind the levee system,  
22 outside the Rio Grande floodplain. Most of the levee system is operated by the  
23 IBWC, but small segments of the levee system (i.e., in Section O-19) are  
24 privately owned.

25 Short-term direct minor adverse construction-related impacts on groundwater  
26 resources in Starr, Hidalgo, and Cameron counties would also be expected.  
27 During construction, water would be required for pouring concrete, watering of  
28 road and ground surfaces for dust suppression, and for washing construction  
29 vehicles. Water use for construction would be temporary, and the volume of  
30 water used for construction would be minor when compared to the amount used  
31 annually in the area for municipal, agricultural, and industrial purposes.

32 The potential for short-term negligible adverse impacts on groundwater related to  
33 an increase in stormwater runoff would also occur. Implementation of storm  
34 water and spill prevention BMPs developed consistent with the SWPPPs and  
35 other applicable plans and regulations would minimize potential runoff or spill-  
36 related impacts on groundwater quality during construction.

37 **Surface Water and Waters of the United States.** Short- and long-term direct  
38 and indirect negligible adverse impacts on water quality would be expected.  
39 Implementation of Route A would increase impervious surface area and runoff  
40 potential. Approximately 508 acres of soil would be disturbed due to grading,

1 contouring, and trenching. Surface water that would be affected either directly or  
2 indirectly include the Rio Grande, arroyos (Section O-2), an irrigation canal  
3 (Section O-5), the Donna Canal (Section O-7), a settling basin and Moon Lake  
4 (Section O-9), the Santa Maria Canal (O-11), the Harlingen Canal (Section O-  
5 12), the San Benito Canal (O-13), Los Fresnos pump canal (Section O-18), and  
6 El Jardin Canal (Section O-21).

7 Construction activities within most of the proposed tactical infrastructure sections  
8 associated with Route A would disturb more than 5 acres of soil, and therefore  
9 would require authorization under the Texas Construction General Permits  
10 (TXR1500000). The Construction General Permits would require preparation of  
11 SWPPPs. The SWPPPs would include erosion and sediment control and storm  
12 water BMPs for activities resulting during and after construction. Based on these  
13 requirements, adverse impacts associated with storm water runoff on surface  
14 water quality would be reduced to negligible impacts.

15 Impacts on surface water and wetlands that are potentially jurisdictional waters of  
16 the United States would be avoided to the maximum extent practicable. Impacts  
17 that cannot be avoided would be minimized and BMPs would be established to  
18 comply with all applicable Federal, state, and local regulations. Potential impacts  
19 include filling wetlands and moving the alignment of irrigation canals and  
20 drainage ditches. Currently, wetland vegetation is routinely removed  
21 mechanically from canal banks as a maintenance action to improve flow and  
22 reduce water loss to evapotranspiration.

23 If wetland impacts cannot be avoided, USBP would obtain CWA Section 404  
24 Permits and RHA Section 10 Permits, as applicable, from the USACE-Galveston  
25 District. As part of the permitting process, USBP would develop, submit, and  
26 implement a wetlands identification, mitigation, and restoration plan to avoid or  
27 minimize impacts and compensate for unavoidable impacts. The plan would be  
28 developed in accordance with USACE guidelines and in cooperation with  
29 USEPA. The plan would outline BMPs from pre-construction to post-construction  
30 activities to reduce impact on wetlands and water bodies. As part of the Section  
31 404 permit application process, USBP will also request certification from TCEQ  
32 under Section 401 (a) of the CWA to ensure that actions will comply with state  
33 water quality standards. This certification must be received for the Section 404  
34 authorization to be valid. Based on NWI data, a total of approximately 7 acres of  
35 wetlands would be impacted under Route A. The unavoidable impacts on waters  
36 and wetlands will be reviewed as part of the USACE 404 permit process.

37 **Floodplains.** Impacts on floodplains would be avoided to the maximum extent  
38 practicable. Acknowledging the potential shortfalls of the methodology to  
39 estimate the floodplain limits in Sections O-1 through O-3, potential short- and  
40 long-term minor adverse impacts on the Rio Grande floodplain would occur as a  
41 result of construction activities. Section O-1 impacts would include 5.26 miles of  
42 floodplain, Section O-2 would include 7.30 miles of floodplain, and Section O-3  
43 would include 1.86 miles of floodplain. The permanent width of the impact area

1 would be 60 feet (see **Figure 2-4**); therefore, Route A would impact  
2 approximately 105 acres of floodplains along Sections O-1, O-2, and O-3. No  
3 impacts on floodplains or IBWC international floodways would be expected in  
4 Sections O-4 through O-21. These sections would be constructed and operated  
5 behind the levee system, outside the Rio Grande floodplain. Most of the levee  
6 system is operated by the IBWC, but small segments of the levee system (i.e., in  
7 Section O-19) are privately owned.

8 In accordance with the FEMA Document, *Further Advice on EO 11988*,  
9 *Floodplain Management*, USBP has determined that Sections O-1 through O-3  
10 cannot be practicably located outside the floodplain. The current floodplain  
11 extends past local communities and roads strategic to the operations of USBP.  
12 In order to operate outside the existing floodplain, USBP would have to move all  
13 operations northward several miles in some areas. This would not meet USBP  
14 mission needs. The increase in impervious surface associated with fence  
15 Sections O-1, O-2, and O-3 would have no impact on the IBWC international  
16 drainage, which starts in Peñitas, Texas, in Hidalgo County. USBP would  
17 mitigate unavoidable impacts on floodplains using planning guidance developed  
18 by the USACE.

## 19 Route B

20 **Hydrology and Groundwater.** Impacts on the hydrology of the Rio Grande  
21 under Route B would be similar to those under Route A for Sections O-1 through  
22 O-3. No impacts on hydrology would be expected in Sections O-4 through O-21.  
23 The impacts of Route B on groundwater would be identical to the impacts  
24 described above for Route A.

25 **Surface Waters and Waters of the United States.** Impacts on surface waters  
26 and waters of the United States under Route B would be similar to those under  
27 Route A. Sedimentation and erosion impacts would be identical to the impacts  
28 under Route A. Surface waters that would be affected under Route B include the  
29 Rio Grande (Sections O-1, O-3, and O-6), arroyos (Section O-2), an irrigation  
30 canal (Section O-5), the Donna Canal (Section O-7), the settling basin and Moon  
31 Lake (Section O-9), the Santa Maria Canal (Section O-11), the Harlingen Canal  
32 (Section O-12), the San Benito Canal (Section O-13), Los Fresnos pump canal  
33 (Section O-18), and El Jardin Canal. There are several differences between the  
34 impacts on surface water features that occur adjacent or within the proposed  
35 project corridor for Route B, as compared to Route A. Section O-1 of Route B  
36 would impact less riparian areas than Route A. Section O-2 in Route B would  
37 avoid some arroyos that would be impacted by Route A. Where practicable,  
38 Section O-3 of Route B would avoid impacts on some natural riparian areas  
39 along the Rio Grande.

40 As with Route A, impacts on surface water and wetlands that are potentially  
41 jurisdictional waters of the United States would be avoided to the maximum  
42 extent practicable under Route B. Impacts that cannot be avoided would be

1 minimized and BMPs enacted that would comply with all applicable Federal,  
2 state, and local regulations. Potential impacts include filling wetlands and  
3 moving the alignment of irrigation canals and drainage ditches. Currently,  
4 wetland vegetation is routinely removed mechanically from canal banks as a  
5 maintenance action to improve flow and reduce water loss to evapotranspiration.  
6 Based on NWI data, a total of approximately 7.3 acres of wetlands would be  
7 impacted under Route B. The unavoidable impacts on waters and wetlands will  
8 be reviewed as part of the USACE 404 permit process.

9 **Floodplains.** Impacts on floodplains under Route B would be the same as  
10 described for Route A.

#### 11 4.6.3 Alternative 3: Secure Fence Act Alignment Alternative

12 **Hydrology and Groundwater.** Impacts on hydrology in Sections O-1, O-2, and  
13 O-3 under Alternative 3 would be similar, but slightly greater than the impacts  
14 described under Alternative 2. The primary and secondary fence sections  
15 proposed under Alternative 3 would result in a larger increase in impervious  
16 surface.

17 Impacts on groundwater under Alternative 3 would be slightly greater than the  
18 impacts under Alternative 2 because the area of surface disturbance would be  
19 greater under this alternative. Disturbance at the ground surface would not affect  
20 groundwater aquifers directly, and post-construction runoff patterns could result  
21 in minor groundwater recharge.

22 **Surface Waters and Waters of the United States.** Alternative 3 would result in  
23 impacts on surface waters and waters of the United States similar to those  
24 described for Alternative 2. However, the magnitude of the impacts would affect  
25 a larger area due to the additional fence and wider corridor. Approximately 1,270  
26 acres of soils would be disturbed due to grading, contouring, and trenching. As  
27 described in **Section 3.6.1**, Texas Construction General Permits would be  
28 required to address the development and implementation of SWPPPs with BMPs  
29 to reduce the impacts of storm water runoff. A larger area of wetlands would also  
30 be impacted under this alternative. Additionally, CWA Section 404, CWA Section  
31 401(a), and RHA Section 10 authorizations will be obtained, as required, for  
32 unavoidable impacts on jurisdictional waters of the United States. A wetlands  
33 mitigation and restoration plan to compensate for unavoidable impacts will be  
34 developed by the applicant and submitted to the USACE-Galveston District  
35 Regulatory Branch for approval prior to implementation. Appropriate mitigation  
36 would be developed to compensate for unavoidable impacts.

37 **Floodplains.** Impacts on floodplains in Sections O-1, O-2, and O-3 under  
38 Alternative 3 would be slightly greater than those described under Alternative 2.  
39 The primary and secondary sections proposed under Alternative 3 would result in  
40 an increase in impervious surface, contributing slightly more surface runoff to the  
41 Rio Grande and its associated floodplain. Section O-1 would include 3.75 miles

1 of floodplain, Section O-2 would include 8.74 miles of floodplain, and Section O-3  
2 would include 1.90 miles of floodplain. The permanent width of the impact area  
3 would be 150 feet (see **Figure 2-5**) and would impact approximately 262 acres of  
4 floodplains along Sections O-1, O-2, and O-3. No impacts on floodplains or  
5 IBWC international floodways would be expected for Sections O-4 through O-21.  
6 These sections would be constructed and operated behind the levee system,  
7 outside the Rio Grande floodplain. Most of the levee system is operated by the  
8 IBWC, but small segments of the levee system (i.e., in Section O-19) are  
9 privately owned.

## 10 4.7 VEGETATION

### 11 4.7.1 Alternative 1: No Action Alternative

12 Under the No Action Alternative, vegetation would continue to be influenced by  
13 Federal, state, and nonprofit resource agency and private land management  
14 plans, development, agricultural crop production, wildfires, drought, and floods.  
15 Native vegetation stands would continue to be adversely affected due to  
16 trampling by recreationists (primarily hunters), cross border violators, and USBP  
17 agents in pursuit of cross border violators and vehicles used off-trail during  
18 apprehension.

### 19 4.7.2 Alternative 2: Routes A and B

#### 20 Route A

21 A 60-foot-wide corridor containing the proposed pedestrian fence and patrol road  
22 associated with Route A would be cleared during construction and a portion  
23 maintained following construction to support long-term maintenance, sight  
24 distance, and patrol activities. For the proposed length of approximately 70  
25 miles, the proposed project corridor totals approximately 508 acres. Existing  
26 land and vegetation composing approximately 508 acres includes urban land,  
27 private residences, and agricultural land (approximately 25 percent of the  
28 proposed project corridor); nonnative grasslands and herbaceous vegetation  
29 (approximately 40 percent of the proposed project corridor); disturbed thornscrub  
30 shrublands and woodlands (approximately 25 percent of the proposed project  
31 corridor); and disturbed floodplain shrublands, woodlands, and forests  
32 (approximately 10 percent of the proposed project corridor).

33 The loss of vegetation from approximately 125 acres of urban and agricultural  
34 land would result in short- and long-term negligible to minor adverse impacts due  
35 to the potential of the disturbed land to become a nursery for nonnative plant  
36 species to propagate and invade surrounding plant communities. Potential  
37 impacts due to removal of individual large mature native trees of Texas ebony,  
38 sabal palm, eastern cottonwood, sugarberry, and honey mesquite could be  
39 reduced by avoidance (avoidance of these large trees would require protection of  
40 the soil and root zone at least to the canopy drip-line, a zone up to 50–75 feet

1 wide), or minimization by transplanting individuals (e.g., of the sabal palms) to  
2 areas selected by the USFWS or other resource agencies. However, avoidance  
3 or transplant of all such trees would likely not be feasible. Therefore, removal  
4 impacts would result in long-term moderate to major adverse impacts, because  
5 these trees are virtually irreplaceable.

6 The loss of approximately 200 acres of herbaceous vegetation, more than half of  
7 this area dominated by nonnative buffelgrass, Bermuda grass, and windmill  
8 grass, would result in short- and long-term minor to moderate adverse impacts  
9 due to habitat conversion.

10 The loss of approximately 125 acres of disturbed thornscrub shrubland and  
11 woodland habitat, predominantly honey mesquite and retama, would result in  
12 short- and long-term moderate adverse impacts due to habitat conversion. In the  
13 LRGVNR, a portion of this acreage represents stands that were previously  
14 revegetated by the USFWS around 2002 and 2003.

15 In the first mile of proposed tactical infrastructure Section O-1, approximately 4.0  
16 acres of Tamaulipan thornscrub that has become established on gravel substrate  
17 of hills and ridges would be removed, resulting in long-term major adverse  
18 impacts due to habitat conversion by disruption of the substrate. The first 0.85  
19 acres of this habitat has been root-plowed, resulting in an invasion of the  
20 nonnative buffelgrass and loss of native vegetation cover, diversity, and  
21 community structure. Restoration of this root-plowed habitat with its loss of  
22 gravel veneer and need to eliminate invasive grass species would likely not  
23 occur. BMPs would include implementation of a Construction Mitigation and  
24 Restoration (CM&R) Plan and a Fire Prevention and Suppression Plan.

25 In the first 0.5 miles of proposed tactical infrastructure Section O-1, sedimentary  
26 rock outcrops on south-facing slopes would be avoided during construction,  
27 resulting in short- and long-term moderate to major beneficial impacts, due to  
28 preservation of a unique habitat that in other sites supports federally listed plant  
29 species (e.g., the Zapata bladderpod). Loss of these unique sedimentary rock  
30 outcrops would be irreplaceable.

31 The loss of approximately 50 acres of disturbed floodplain shrubland, woodland,  
32 and forest habitat, predominantly honey mesquite and sugarberry and to a lesser  
33 extent sabal palm, would result in short- and long-term moderate to major  
34 adverse impacts due to habitat conversion and the size and age of mature  
35 floodplain trees.

36 The proposed project corridor would be expected to provide some protection for  
37 vegetation in the areas north of proposed project corridor from new, continued, or  
38 increased foot traffic impacts by cross-border violators. Such protection would  
39 result in short- and long-term minor to moderate beneficial impacts.

1 In summary, short- and long-term adverse impacts on vegetation would range  
2 from negligible to major due to habitat loss and modification. Short- and long-  
3 term negligible to moderate (depending upon the location) beneficial impacts  
4 would be anticipated due to protection of remaining vegetation north of the  
5 proposed project corridor.

6 Vegetation resources between the 21 proposed tactical infrastructure sections  
7 would also be adversely impacted by the funneling of cross border violators into  
8 the areas where there would be no fence. Concentrated foot traffic around the  
9 ends of the sections would reduce vegetation in those areas. Since the locations  
10 of the 21 sections were based on USBP operational requirements including the  
11 ability to make apprehensions, the extent of the disturbance would be limited and  
12 the impacts would be minor, long-term, and adverse.

### 13 Route B

14 Route B would impact approximately 508 acres, similar to Route A. While Route  
15 B would cut across the lower portions of Los Velas and Los Velas West annexes  
16 of the LRGVNR (Section O-2), it would entirely avoid the potentially more  
17 species-rich Arroyo Ramirez annex (Section O-1), the Culebron Banco annex  
18 (Section O-13), and the Tahuachal Banco annex (Section O-16) of the  
19 LRGVNR. Finally, Route B moves the proposed fence alignment from the  
20 edge of town to along the levee in the western portion of Section O-19,  
21 potentially protecting remaining habitat north of the levee in that area. Indirect  
22 impacts on other areas between fence sections would be the same as described  
23 under Route A. Short- and long-term adverse impacts on vegetation resulting  
24 from development of Route B would be less than those for Route A, but would  
25 still fall into the negligible to major range. Short- and long-term beneficial  
26 impacts due to protection provided by the fence along Route B would also be  
27 anticipated to range from minor to moderate, depending upon the location.

### 28 4.7.3 Alternative 3: Secure Fence Act Alignment Alternative

29 Under the Secure Fence Act Alignment Alternative, a 150-foot-wide corridor  
30 containing the proposed primary and secondary pedestrian fences and patrol  
31 roads would be cleared during construction and would remain cleared following  
32 construction to support long-term maintenance, sight distance, and patrol  
33 activities. The cleared area totals approximately 1,270 acres over the 70-mile  
34 length of the proposed project corridor. Existing land use and vegetation in this  
35 1,270 acres includes urban land, private residences, and agricultural land  
36 (approximately 25 percent); nonnative grasslands and herbaceous vegetation  
37 (approximately 40 percent); disturbed thornscrub shrublands and woodlands  
38 (approximately 25 percent); and disturbed floodplain shrublands, woodlands, and  
39 forests (approximately 10 percent).

40 The loss of vegetation from approximately 320 acres of urban and agricultural  
41 land would result in short- and long-term negligible to minor adverse impacts due

1 to the potential for the disturbed land to become a nursery for nonnative plant  
2 species to propagate and invade surrounding plant communities. Removal of  
3 individual large mature native trees of Texas ebony, sabal palm, eastern  
4 cottonwood, sugarberry, and honey mesquite would result in long-term, moderate  
5 to major adverse impacts, because they are virtually irreplaceable. Avoidance of  
6 these large trees would not be possible under this alternative.

7 The loss of approximately 505 acres of herbaceous vegetation, more than half of  
8 this area dominated by nonnative buffelgrass, Bermuda grass, and windmill  
9 grass, would result in short- and long-term moderate adverse impacts due to  
10 permanent habitat conversion. The loss of approximately 320 acres of disturbed  
11 thornscrub shrubland and woodland habitat, predominantly honey mesquite and  
12 retama, would result in short- and long-term, moderate to major, adverse impacts  
13 due to permanent habitat conversion. In the LRGVNWR, a portion of this  
14 acreage represents stands that were previously revegetated by the USFWS  
15 during 2002 and 2003.

16 In the first mile of proposed Fence Section O-1, approximately 9.0 acres of  
17 thornscrub that has become established on gravel substrate of hills and ridges  
18 would be permanently removed, resulting in long-term, major adverse impacts  
19 due to habitat conversion by disruption of the substrate and elimination of  
20 vegetation cover. In the first 0.5 miles of proposed fence Section O-1,  
21 sedimentary rock outcrops on south-facing slopes would be avoided during  
22 construction, resulting in short- and long-term moderate to major beneficial  
23 impacts due to preservation of a unique habitat that in other sites supports  
24 federally listed plant species (e.g., the Zapata bladderpod). Loss of these unique  
25 sedimentary rock outcrops would be irreplaceable.

26 The loss of approximately 125 acres of disturbed floodplain shrubland, woodland,  
27 and forest habitat, predominantly honey mesquite and sugarberry and to a lesser  
28 extent sabal palm, would result in short- and long-term, moderate to major  
29 adverse impacts due to permanent habitat conversion, the size and age of  
30 mature floodplain trees, and the endemism of the sabal palm.

31 During and following construction of the proposed fence sections, the impacts of  
32 fire, drought, and flooding, as described in the No Action Alternative, would occur  
33 over time, resulting in short- and long-term minor to moderate adverse impacts  
34 on the remaining native and nonnative plant communities.

## 35 4.8 WILDLIFE AND AQUATIC RESOURCES

### 36 4.8.1 Alternative 1: No Action Alternative

37 Under the No Action Alternative, new tactical infrastructure would not be built and  
38 there would be no change in fencing, access roads, or other facilities along the  
39 U.S./Mexico international border in the proposed project locations within the  
40 USBP Rio Grande Valley Sector. Anticipated continuation or even increases in

1 cross border violator traffic would be expected to have some adverse impacts on  
2 habitat for wildlife and aquatic resources. These impacts are anticipated to be  
3 short- and long-term, minor, and adverse.

#### 4 4.8.2 Alternative 2: Routes A and B

##### 5 Route A

6 A 60-foot-wide corridor containing the proposed pedestrian fence and patrol road  
7 associated with Route A would be cleared during construction and a portion  
8 maintained following construction to support long-term maintenance, sight  
9 distance, and patrol activities. For the period of construction, lay-down areas for  
10 materials and equipment would be identified within the disturbed proposed  
11 project corridor. Route A would follow the IBWC levee system for the majority of  
12 its length; however, some proposed tactical infrastructure sections would  
13 encroach on portions of unique or protected habitats. Route A alignment would  
14 cross several Texas state parks and WMAs in the Rio Grande Valley and would  
15 intersect LRGV NWR at several locations (see **Appendix I**). Potential threats to  
16 wildlife in these areas include habitat conversion, noise, and potential siltation of  
17 aquatic habitats.

18 For the proposed length of approximately 70 miles, the area within the proposed  
19 project corridor that would be cleared of vegetation totals approximately 508  
20 acres. The following paragraphs characterize the amount of each general habitat  
21 type that would be temporarily or permanently impacted and the impacts of that  
22 habitat conversion on wildlife species.

23 The loss of vegetation from approximately 125 acres of urban and agricultural  
24 land would result in short- and long-term negligible adverse impacts on wildlife  
25 species due to the disturbed land potentially becoming a nursery for nonnative  
26 plant species to propagate and invade surrounding plant communities.

27 The loss of approximately 200 acres of herbaceous vegetation, more than half of  
28 this area dominated by nonnative buffelgrass, Bermuda grass, and windmill  
29 grass, would result in short- and long-term, minor adverse impacts to wildlife due  
30 to habitat conversion. The loss of approximately 125 acres of disturbed  
31 thornscrub shrubland and woodland habitat, predominantly honey mesquite and  
32 retama, would result in short- and long-term moderate adverse impacts on  
33 wildlife due to habitat conversion.

34 In the first mile of proposed tactical Section O-1, approximately 4.0 acres of  
35 Tamaulipan thornscrub that has become established on gravel substrate of hills  
36 and ridges would be removed, resulting in long-term minor adverse impacts on  
37 wildlife due to habitat conversion.

38 The loss of approximately 50 acres of disturbed floodplain shrubland, woodland,  
39 and forest habitat, predominantly honey mesquite and sugarberry and to a lesser

1 extent sabal palm, would result in short- and long-term, minor to moderate  
2 adverse impacts on wildlife.

3 The proposed tactical infrastructure sections would be expected to provide some  
4 protection for wildlife and wildlife habitats in the areas north of the proposed  
5 project corridor from new, continued, or increased foot traffic impacts by cross  
6 border violators. Such protection would result in short- and long-term, minor  
7 beneficial impacts on wildlife. However, wildlife and wildlife habitat between the  
8 21 proposed tactical infrastructure sections would be adversely impacted by the  
9 funneling of cross border violators into the areas where there would be no fence  
10 and concentrated USBP operations. The severity of the impact would vary  
11 depending on the quality of the habitat impacted. Cross border violators could be  
12 funneled into portions of the LRGVNR. Section O-1 could funnel cross border  
13 violators west into the Arroyo Ramirez annex. Fence section O-2 could funnel  
14 cross border violators east into the Los Velas West LRGVNR. Fence Section  
15 O-3 could funnel cross border violators west into the Los Ebanos annex.  
16 Between Sections O-5 and O-6 is the Cottam annex which could be adversely  
17 impacted by concentrating cross border violators into the area. Section O-10  
18 could funnel cross border violators east into the Relampago annex, and Section  
19 O-18 could funnel cross border violators east into the Phillips Banco annex.

20 Noise created during construction would be anticipated to result in short-term,  
21 minor to moderate, adverse impacts on wildlife. These impacts would include  
22 subtle, widespread impacts from the overall elevation of ambient noise levels  
23 during construction. Noise levels after construction are anticipated to return to  
24 close to current ambient levels. Elevated noise levels during construction could  
25 result in reduced communication ranges, interference with predator/prey  
26 detection, or habitat avoidance. More intense impacts would include behavioral  
27 change, disorientation, or hearing loss. Predictors of wildlife response to noise  
28 include noise type (i.e., continuous or intermittent), prior experience with noise,  
29 proximity to a noise source, stage in the breeding cycle, activity, and age. Prior  
30 experience with noise is the most important factor in the response of wildlife to  
31 noise, because wildlife can become accustomed (or habituate) to the noise. The  
32 rate of habituation to short-term construction is not known, but it is anticipated  
33 that most wildlife would be permanently displaced from the areas where the  
34 habitat is cleared and the fence and associated tactical infrastructure  
35 constructed, and temporarily dispersed from areas adjacent to the project areas  
36 during construction periods. See **Section 4.3.2** for additional details on expected  
37 noise levels associated with Routes A and B.

38 Removal of vegetation and grading during construction could temporarily  
39 increase siltation in the river and therefore have short-term minor adverse  
40 impacts on fish within the Rio Grande. Under Route A, tactical infrastructure  
41 would be adjacent to the river bank, and could result in increased siltation in the  
42 Rio Grande. There is one state-listed fish species known to overlap with  
43 proposed fence sections in the Rio Grande Valley Sector. The Rio Grande  
44 silvery minnow could potentially occur in the Rio Grande in three proposed

1 sections (O-18, O-19, and O-21). However, implementation of standard BMPs  
2 such as use of silt fences, should reduce this potential impact to negligible.

3 In summary, implementation of Route A would be anticipated to have short- and  
4 long-term, negligible to moderate adverse impacts on wildlife due to habitat  
5 conversion; short-term, minor to moderate adverse impacts on wildlife due to  
6 construction noise; and negligible adverse impacts on aquatic habitats due to  
7 siltation from construction activities. Minor beneficial impacts would result from  
8 protection of wildlife and habitats on the north side of the proposed project  
9 corridor.

## 10 Route B

11 Route B would impact approximately 508 acres, similar to Route A. While Route  
12 B would cut across the lower portions of Los Velas and Los Velas West annexes  
13 (Section O-2), it would entirely avoid the potentially more species-rich Arroyo  
14 Ramirez annex (Section O-1), the Culebron Banco annex (Section O-13), and  
15 the Tahuachal Banco annex (Section O-16) of the LRGVNR. Finally, Route B  
16 moves the proposed fence alignment from the edge of town to along the levee in  
17 the western portion of Section O-19, potentially protecting remaining habitat and  
18 the wildlife it supports north of the levee in that area.

19 Short- and long-term adverse impacts on wildlife due to habitat conversion  
20 resulting from development of Route B would be less than those for Route A, but  
21 would still fall into the negligible to moderate range. Short- and long-term  
22 beneficial impacts due to protection provided by the fence along Route B would  
23 also be anticipated to range from minor to moderate, depending upon the  
24 location. Similar to the indirect impact discussed under Route A, wildlife and  
25 wildlife habitat between the 21 proposed sections of tactical infrastructure would  
26 be adversely impacted by the deterrent effect of the fence, the funneling of illegal  
27 cross-border violators into the areas where there would be no fence, and  
28 concentrated USBP operations. The severity of the impact would vary  
29 depending on the quality of the habitat impacted. Sections O-1 and O-2 Route B  
30 would avoid potential impacts on the Arroyo Ramirez annex and the Los Velas  
31 West annex of the LRGVNR, respectively. Fence Section O-16 could funnel  
32 cross border violators east into the Tahuachal Banco annex, whereas Route A  
33 would bisect the refuge. Adverse impacts from Route B on Sections O-3, O-5,  
34 O-6, O-10, and O-18 would be the same as Route A. Noise impacts from  
35 construction would be similar to those for Route A: short-term, minor to  
36 moderate, and adverse. Although portions of the fence would be closer to the  
37 river (e.g., Section O-19), potential short-term adverse impacts on aquatic  
38 habitats due to siltation are not anticipated to exceed negligible assuming  
39 implementation of standard BMPs during construction.

1    **4.8.3    Alternative 3: Secure Fence Act Alignment Alternative**

2    The nature of impacts of Alternative 3 would be similar to those of Alternative 2;  
3    however, the area impacted (1,270 acres) would be larger, resulting in greater  
4    intensity and duration of impacts.

5    Short- and long-term adverse impacts on wildlife due to habitat conversion  
6    resulting from implementation of Alternative 3 would be moderate to major.  
7    Short- and long-term beneficial impacts due to protection provided by the fence  
8    along Route B would range from minor to moderate, depending upon the  
9    location. Noise impacts from construction would be short-term and adverse, but  
10   would range from moderate to major in intensity. Given the larger footprint of this  
11   alternative and the correlated increased risk of runoff during storm events, the  
12   adverse impacts of this alternative on aquatic resources due to siltation could  
13   increase.

14   **4.9    SPECIAL STATUS SPECIES**

15   **4.9.1   Federal Species**

16   Section 7 of the ESA requires Federal agencies to consult with the USFWS when  
17   actions could affect federally listed species or designated critical habitat. Pre-  
18   consultation coordination with USFWS is underway for this project. The USFWS  
19   has provided critical feedback on the location and design of fence sections to  
20   avoid, minimize, or mitigate potential impacts on listed species or designated  
21   critical habitat. USBP is developing the Biological Assessment in coordination  
22   with the USFWS. Potential impacts of fence construction, maintenance, and  
23   operation will be analyzed in both the Biological Assessment and BO to  
24   accompany the Final EIS.

25   Potential impacts on federally listed species are based on currently available  
26   data. Impacts are developed from a NEPA perspective and are independent of  
27   any impact determinations made for the Section 7 consultation process. Impact  
28   categories used in this document cannot be assumed to correlate to potential  
29   impact determinations that have not yet been made.

30   **4.9.1.1   Alternative 1: No Action Alternative**

31   Under the No Action Alternative, new tactical infrastructure would not be built and  
32   there would be no change in fencing, access roads, or other facilities along the  
33   U.S./Mexico international border in the proposed project locations within the  
34   USBP Rio Grande Valley Sector. Anticipated continuation or even increases in  
35   cross border violator traffic would be expected to have some adverse impacts on  
36   federally listed species, especially plants. These impacts are anticipated to be  
37   short- and long-term, minor to moderate, and adverse.

1 4.9.1.2 Alternative 2: Routes A and B

2 Route A

3 Under Route A, a 60-foot-wide corridor containing the proposed pedestrian and  
4 patrol roads would be cleared during construction and a portion maintained  
5 following construction to support long-term maintenance, sight distance, and  
6 patrol activities. For the period of construction, lay-down areas for materials and  
7 equipment would be identified within the disturbed proposed project corridor.  
8 Route A would follow the IBWC levee system for the majority of its length;  
9 however, some proposed fence sections would encroach on portions of unique or  
10 protected habitats. The proposed fence alignment would cross several Texas  
11 state parks and WMAs in the Rio Grande Valley and would intersect LRGV NWR  
12 at several locations (see **Appendix I**). Potential threats to federally listed  
13 species in these areas include trampling (for plants), habitat conversion, and  
14 noise.

15 Approximately 508 acres of vegetation would be cleared along the proposed  
16 project corridor for the Route A. Route A approaches known locations of  
17 individuals of Texas ayenia, Walker's manioc, and Zapata bladderpod.  
18 Implementation of Route A would be anticipated to have the potential for short-  
19 term major adverse impacts on these species due to trampling or mortality during  
20 fence construction. Long-term negligible to minor beneficial impacts could result  
21 from reduction or prevention of cross-border violator traffic through habitats for  
22 and populations of these species, but funneling of cross-border violators into  
23 occurrences of Texas ayenia, Walker's manioc, and Zapata bladderpod could  
24 have long-term major adverse impacts on these species.

25 The loss of approximately 125 acres of disturbed thornscrub shrubland and  
26 woodland habitat, predominantly honey mesquite and retama, and of  
27 approximately 50 acres of disturbed floodplain shrubland, woodland, and forest  
28 habitat, predominantly honey mesquite and sugarberry and to a lesser extent  
29 sabal palm, would represent a loss of approximately 150 acres of potential ocelot  
30 and jaguarundi habitat. The short- and long-term loss of potential habitat for  
31 these species is anticipated to result in short- and long-term, moderately adverse  
32 impacts on ocelots and jaguarundi. Long-term beneficial impacts due to  
33 protection of habitat provided by the fence along Route A would be anticipated to  
34 range from minor to moderate, depending upon the location.

35 For Route A, short-term moderate adverse impacts would be anticipated for  
36 ocelots and jaguarundi due to elevated noise levels during construction. These  
37 elevated noise levels could interfere with important communications, dispersal of  
38 individuals, and predator-prey interactions.

1    Route B

2    Route B would impact approximately 508 acres, similar to Route A. While Route  
3    B would cut across the lower portions of Los Velas and Los Velas West annexes  
4    of the LRGVNR (Section O-2), it would entirely avoid the potentially more  
5    species-rich Arroyo Ramirez annex (Section O-1), the Culebron Banco annex  
6    (Section O-13), and the Tahuachal Banco annex (Section O-16) of the  
7    LRGVNR.

8    Route B pulls the proposed fence alignment further away from several known  
9    locations of Zapata bladderpod and Walker's manioc. For this reason, Route B  
10   impacts on federally listed plants are anticipated to be short-term, moderate, and  
11   adverse. Long-term negligible to minor beneficial impacts could result from  
12   reduction or prevention of cross-border violator traffic through habitats for and  
13   populations of these species.

14   Short- and long-term adverse impacts on federally listed species due to habitat  
15   conversion resulting from development of Route B would be less than those for  
16   Route A, but would still fall into the moderate range. Short- and long-term  
17   beneficial impacts due to protection provided by the fence along Route B would  
18   also be anticipated to range from minor to moderate, depending upon the  
19   location. Noise impacts from construction would be similar to those for Route A:  
20   short-term, moderate, and adverse.

21   4.9.1.3 Alternative 3: Secure Fence Act Alignment Alternative

22   The nature of impacts of Alternative 3 would be similar to those of Alternative 2;  
23   however, the area impacted (1,270 acres) would be larger, resulting in greater  
24   intensity and duration of impacts.

25   Short- and long-term adverse impacts on federally listed species due to trampling  
26   (plants) and habitat conversion resulting from implementation of Alternative 3  
27   would be major. Short- and long-term beneficial impacts due to protection  
28   provided by the fence along Route B would range from minor to moderate,  
29   depending upon the location. Noise impacts from construction would still be  
30   short-term and adverse, but would increase to moderate to major in intensity.

31   4.9.2 State Species

32   4.9.2.1 Alternative 1: No Action Alternative

33   Under the No Action Alternative, new tactical infrastructure would not be built and  
34   there would be no change in fencing, access roads, or other facilities along the  
35   U.S./Mexico international border in the proposed project locations within the Rio  
36   Grande Valley Sector. Anticipated continuation or even increases in cross-  
37   border violator traffic would be expected to have some adverse impacts on state-

1 listed species. These impacts are anticipated to be short- and long-term, minor  
2 to moderate, and adverse.

### 3 4.9.2.2 Alternative 2: Routes A and B

#### 4 Route A

5 Under the Proposed Action, Route A, a 60-foot-wide corridor containing the  
6 proposed new pedestrian fence and access/patrol roads on either side would be  
7 cleared during construction and a portion maintained following construction to  
8 support long-term maintenance, sight distance, and patrol activities. For the  
9 period of construction, lay-down areas for materials and equipment would be  
10 identified within the disturbed proposed project corridor. Route A would follow  
11 the IBWC levee system for the majority of its length; however, some proposed  
12 fence sections would encroach on portions of unique or protected habitats. The  
13 proposed fence alignment would cross several Texas state parks and WMAs in  
14 the Rio Grande Valley and would intersect LRGVNR at several locations (see  
15 **Appendix I**). Potential threats to state-listed species in these areas include  
16 habitat conversion during fence construction, increased mortality during  
17 construction and subsequent use of patrol roads, and noise.

18 Habitat loss or conversion for state-listed species in Sections O-1, O-2, O-8, and  
19 O-10 (i.e., Mexican treefrog, Mexican burrowing toad, Texas horned lizard, white-  
20 lipped lizard) would affect a small area and would be of little consequence to  
21 statewide viability of these species. BMPs to avoid and minimize impacts, such  
22 as pre-construction clearance surveys, are anticipated to reduce potential  
23 impacts to minor or lower in intensity. Increased heavy traffic in the short term,  
24 and patrol traffic in the long term would be anticipated to have a correlated  
25 increased potential for mortality of these species through roadkill. Noise created  
26 during construction would be anticipated to result in short-term, minor to  
27 moderate, adverse impacts on these state-listed species.

28 Overall, short-term minor to moderate adverse impacts from construction would  
29 be expected, while long-term minor adverse impacts from maintenance and  
30 operation would be expected due to potential mortality on associated roads.  
31 However, long-term minor beneficial impacts could result from reduced foot traffic  
32 in areas on the north side of the proposed project corridor.

33 There is one state-listed fish species known to overlap with proposed fence  
34 sections in the USBP Rio Grande Valley Sector. The Rio Grande silvery minnow  
35 could potentially occur in the Rio Grande in three sections (O-18, O-19, and  
36 O-21). Removal of vegetation and grading during construction could temporarily  
37 increase siltation in the river. However, implementation of standard BMPs, such  
38 as use of silt fences, should reduce this potential impact to negligible. Therefore  
39 short-term negligible adverse impacts on this species would be expected.

1 Habitat conversion and noise impacts on state-listed species in all other fence  
2 sections are anticipated to be negligible in both the short and long terms. These  
3 sections did not present high-quality habitat for state-listed species, and no  
4 species were observed in these sections during the surveys (see **Appendix I**).

## 5 Route B

6 Route B would impact approximately 508 acres, similar to Route A. While Route  
7 B would cut across the lower portions of Los Velas and Los Velas West annexes  
8 of the LRGVNWR (Section O-2), it would entirely avoid the potentially more  
9 species-rich Arroyo Ramirez annex (Section O-1), the Culebron Banco annex  
10 (Section O-13), and the Tahuachal Banco annex (Section O-16) of the  
11 LRGVNWR.

12 Because Route B would impact less of Section O-1, which is particularly species-  
13 rich, the impacts as a result of this alternative on state-listed species are  
14 anticipated to be less than those for Route A. Route B impacts due to  
15 construction would be short-term, negligible to minor, and adverse, while impacts  
16 from maintenance and operation would be long-term, negligible to minor, and  
17 adverse due to potential mortality on associated roads. However, long-term  
18 minor beneficial impacts could result from reduced foot traffic in areas north and  
19 south of the proposed project corridor. Impacts from noise for Route B would be  
20 similar to those for Route A.

### 21 4.9.2.3 Alternative 3: Secure Fence Act Alignment Alternative

22 The nature of impacts of Alternative 3 would be similar to those of Alternative 2;  
23 however, the area impacted (1,270 acres) would be larger, resulting in greater  
24 intensity and duration of impacts.

25 Short- and long-term adverse impacts on state-listed species due to habitat  
26 conversion and roadkill mortality resulting from implementation of Alternative 3  
27 would be major. Noise impacts from construction would be short-term and  
28 adverse, but would range from moderate to major in intensity. Short- and long-  
29 term beneficial impacts due to protection provided by the fence along Route B  
30 would range from minor to moderate, depending upon the location.

## 31 4.9.3 Migratory Birds

### 32 4.9.3.1 Alternative 1: No Action Alternative

33 Under the No Action Alternative, new tactical infrastructure would not be built and  
34 there would be no change in fencing, access roads, or other facilities along the  
35 U.S./Mexico international border in the proposed project locations within the  
36 USBP Rio Grande Valley Sector. Anticipated continuation or even increases in  
37 cross border violator traffic would be expected to have some adverse impacts on

1 migratory birds. These impacts are anticipated to be short- and long-term, minor  
2 to moderate, and adverse.

### 3 4.9.3.2 Alternative 2: Routes A and B

#### 4 Route A

5 Under Route A, a 60-foot-wide corridor containing the proposed pedestrian fence  
6 and patrol roads would be cleared during construction and a portion maintained  
7 following construction to support long-term maintenance, sight distance, and  
8 patrol activities. For the period of construction, lay-down areas for materials and  
9 equipment would be identified within the disturbed proposed project corridor.  
10 Route A would follow the IBWC levee system for the majority of its length;  
11 however, some proposed fence sections would encroach on portions of unique or  
12 protected habitats. The proposed fence alignment would cross several Texas  
13 state parks and WMAs in the Rio Grande Valley and would intersect LRGV NWR  
14 at several locations (see **Appendix I**). Potential threats to migratory birds in  
15 these areas include habitat conversion during fence construction, increased  
16 mortality during construction and subsequent use of patrol roads, and noise.

17 Approximately 508 acres of vegetation would be cleared along the proposed  
18 project corridor for Route A. Impacts on migratory birds could be substantial,  
19 given the potential timing of fence construction. However, implementation of  
20 BMPs to avoid or minimize adverse impacts could markedly reduce their  
21 intensity. The following is a list of BMPs recommended for reduction or  
22 avoidance of impacts on migratory birds:

- 23 • Any groundbreaking construction activities should be performed before  
24 migratory birds return to the area (approximately 1 March) or after all  
25 young have fledged (approximately 31 July) to avoid incidental take.
- 26 • If construction is scheduled to start during the period in which migratory  
27 bird species are present, steps should be taken to prevent migratory birds  
28 from establishing nests in the potential impact area. These steps could  
29 include covering equipment and structures, and use of various excluders  
30 (e.g., noise). Birds can be harassed to prevent them from nesting on the  
31 site. Once a nest is established, they cannot be harassed until all young  
32 have fledged and left the nest site.
- 33 • If construction is scheduled to start during the period when migratory birds  
34 are present, a supplemental site-specific survey for nesting migratory birds  
35 should be performed immediately prior to site clearing.
- 36 • If nesting birds are found during the supplemental survey, construction  
37 should be deferred until the birds have left the nest. Confirmation that all  
38 young have fledged should be made by a competent biologist.

1 Because not all of the above BMPs can be fully implemented due to time  
2 constraints of fence construction, a Migratory Bird Depredation Permit will be  
3 obtained from USFWS.

4 Assuming implementation of the above BMPs to the fullest extent feasible,  
5 impacts of Route A on migratory birds is anticipated to be short- and long-term,  
6 minor, and adverse due to construction disturbance and associated loss of  
7 habitat, and long-term, minor, and beneficial due to reduction of foot traffic  
8 through migratory bird habitat north of the proposed project corridor.

## 9 Route B

10 Route B would impact approximately 508 acres, similar to Route A. While Route  
11 B would cut across the lower portions of Los Velas and Los Velas West annexes  
12 of the LRGVNWR (Section O-2), it would entirely avoid the potentially more  
13 species-rich Arroyo Ramirez annex (Section O-1), the Culebron Banco annex  
14 (Section O-13), and the Tahuachal Banco annex (Section O-16) of the  
15 LRGVNWR. In addition, Route B borders instead of intersects the southern  
16 boundary of the Phillips Banco annex of the LRGVNWR.

17 As with Route A, not all of the migratory bird BMPs described above can be fully  
18 implemented due to time constraints of fence construction. Therefore, a  
19 Migratory Bird Depredation Permit will be obtained from USFWS.

20 Assuming implementation of the above BMPs to the fullest extent feasible,  
21 impacts of Route B on migratory birds is anticipated to be short- and long-term,  
22 minor, and adverse due to construction disturbance and associated loss of  
23 habitat, and long-term, minor, and beneficial due to reduction of foot traffic  
24 through migratory bird habitat north of the proposed project corridor.

### 25 4.9.3.3 Alternative 3: Secure Fence Act Alignment Alternative

26 Under this alternative, the proposed project corridor would increase to 130 feet,  
27 which is slightly more than double that associated with Alternative 2 (60 feet).  
28 Impacts on migratory bird species would be similar to those described for the  
29 Alternative 2, but more extensive in nature. Given the extensive habitat  
30 disturbance and loss associated with the larger footprint of this alternative,  
31 moderate to major short- and long-term adverse impacts would be anticipated.  
32 Long-term beneficial impacts due to reduction of foot traffic through habitat north  
33 of the proposed project corridor would remain minor.

## 34 4.10 CULTURAL RESOURCES

### 35 4.10.1 Alternative 1: No Action Alternative

36 Under the No Action Alternative, proposed tactical infrastructure would not be  
37 built and there would be no change in fencing, patrol roads, or other facilities

1 within the USBP Rio Grande Valley Sector. Since there would be no tactical  
2 infrastructure built, impacts on cultural, historical, and archaeological resources,  
3 including historic properties, would continue to be affected by cross border  
4 violator activities.

#### 5 4.10.2 Alternative 2: Routes A and B

##### 6 Route A

7 Section O-1 would extend along the southern boundary of the NHL-designated  
8 Roma Historic District and parallel the Rio Grande. The Roma Historic District  
9 would incur long-term major adverse impacts associated with Route A  
10 construction would atop the bluff at the western and southern edges of the  
11 historic district under Route A. The infrastructure would constitute an element  
12 out of character with the historic district and alter its historic setting and  
13 relationship to the river.

14 Section O-2 would cross the southern tip of the Fort Ringgold Historic District,  
15 including a portion of the archaeological component of the district. The historic  
16 buildings of Fort Ringgold are distant from the southern tip of the district, which  
17 slopes down to the Rio Grande; the impacts associated with Route A on the  
18 viewshed and setting of these buildings is thus minimized. Moreover, there is  
19 thick vegetation and intervening buildings between the historic buildings at Fort  
20 Ringgold and the Rio Grande to provide considerable visual screening.  
21 Proposed grading for access roads and patrol roads on Fort Ringgold might  
22 adversely impact archaeological resources.

23 Section O-3 would be near the Los Ebanos POE and ferry, and within the  
24 southern and eastern side of the community of Los Ebanos. The POE, ferry, Las  
25 Cuervas ebony, and surrounding area could be eligible for listing in the NRHP as  
26 a historic landscape, or for their historical or engineering significance. Route A  
27 would be approximately 250 feet from the ferry crossing, and would present  
28 substantial impacts on the viewshed and setting of the ferry and POE. Route A  
29 also would surround the community of Los Ebanos to its south and east.  
30 Because the Rio Grande is very close to the eastern side of the community, there  
31 would be long-term major adverse impacts on the viewshed and setting of any  
32 historic properties identified within the community. Los Ebanos has a community  
33 cemetery located on its western side. Impacts on the Los Ebanos POE, ferry,  
34 and community would be long-term, major, and adverse.

35 Section O-5 is approximately one-quarter to one-half mile south of the La Lomita  
36 Historic District. Because there is substantial vegetative screening at the  
37 southern and eastern portions of the historic district, impacts on the viewshed  
38 and setting of this district would be minor to moderate.

39 Section O-6 would extend north/south along the western boundary of the  
40 Louisiana-Rio Grande Canal Company Irrigation System Historic District. It

1 would be constructed adjacent to the Old Hidalgo Pumphouse on its eastern and  
2 western sides and continue easterly within the southern portion of the district for  
3 a distance of approximately 1.5 miles, crossing into an area of open irrigation  
4 canals that are contributing properties of the historic district. The proposed fence  
5 would be very visible from Levee Street and nearby streets, and from the Old  
6 Hidalgo Pumphouse grounds. However, the view of the fence would be  
7 somewhat minimized by the substantial existing landscaping of the pump house  
8 grounds. Fence designs or other construction design mitigation measures might  
9 be able to further minimize impacts on the pump house. In addition to impacts  
10 on the historic pump house, the extension of the infrastructure into the canal  
11 system would constitute a direct adverse impact on those features of the historic  
12 district. In summary, Route A would have long-term, major, and adverse direct  
13 and indirect impacts on the historic district. USBP is committed to working with  
14 the City of Hidalgo, community, and THC to identify mitigation design measures  
15 to minimize impacts on the historic district and historic Old Hidalgo Pumphouse.

16 Section O-10 would pass to the south of and approximately 0.3 miles from  
17 Toluca Ranch. Because the southern portion of the property has many mature  
18 trees and other vegetation, the house and other buildings would have some  
19 screening from the proposed project. Impacts on the viewshed and setting of the  
20 historic district would be moderate.

21 Section O-14 would pass immediately south of the Landrum House, a Recorded  
22 Texas Historic Landmark since 1978. The Landrum House is not listed in the  
23 NRHP, but would be eligible for the NRHP for its historical and architectural  
24 significance. The house was constructed in 1902 for Frances and James  
25 Landrum (THC 2007). The house and associated outbuildings would incur long-  
26 term, major adverse indirect impacts and potentially some direct impacts should  
27 the APE impact any associated archaeological deposit of this property.

28 Section O-17 is close to (approximately 0.25 miles north) the Sabas Cavazos  
29 Cemetery, established in 1878 with the burial of a rancher and businessman,  
30 Sabas Cavazos (THC 2007). Route A would not impact this resource.

31 In Section O-19, Route A curves northward close to the developed portion of  
32 Brownsville, west of the park near the POE, and continues south along the  
33 western side of the Fort Brown Historic District, a designated NHL. The  
34 proposed fence would be visible from 12th Street and portions of nearby streets.  
35 However, the infrastructure related to the POE and the park located west of the  
36 POE would somewhat minimize the impact of the proposed fence. The route  
37 continues west of the historic buildings of Fort Brown that are now integrated into  
38 the University of Texas/Texas Southmost College campus, extends north/south  
39 immediately west of the Neale House, and then takes an easterly route along the  
40 northern boundary of the historic district along the U.S. section of the IBWC  
41 levee. A golf course is located south of the levee and within the boundaries of  
42 the NHL historic district. Although there are significant historic properties in the  
43 area of Route A, there also is substantial development. The historic buildings of

1 Fort Brown are part of the university campus with other buildings, landscaping,  
2 streets, and parking lots. The historic buildings are located a distance from Route  
3 A. The new development provides some measure of visual screening. The  
4 integrity of the archaeological component of Fort Brown is unknown, and might  
5 have been impacted by prior activities. Additional research will be conducted  
6 including consultation with the THC on the potential adverse impacts (direct and  
7 indirect) and potential mitigation measures will be identified in the Final EIS.  
8 Route A would present major long-term indirect and possibly direct impacts on  
9 the Neale House since it would be immediately west of the house. Section O-19  
10 would cause moderate to major, adverse, long-term impacts on the viewshed  
11 and setting of historic properties.

12 Section O-21 would parallel the southern boundary of the Old Brulay Plantation  
13 at a distance of approximately 100 feet or less from the historic district complex.  
14 Construction of the tactical infrastructure likely would impact the viewshed and  
15 setting of this complex, and could also directly impact historical archaeological  
16 materials related to the plantation. Impacts would be long-term, major, and  
17 adverse. The historic complex could be damaged from construction activities.  
18 The Brulay Cemetery is about 1,000 feet to the north of the alignment, but would  
19 not be impacted.

20 Archaeological resources between the 21 proposed tactical infrastructure  
21 sections could be adversely impacted by the funneling of cross border violators  
22 into the areas where there would be no fence. Increased foot traffic around the  
23 ends of sections of fence in remote areas would reduce vegetation, disturb soils,  
24 and could uncover and destroy unknown resources. Since the locations of the  
25 21 sections were based on USBP operational requirements, including the ability  
26 to make apprehensions, the extent of disturbance should be minor and adverse.  
27 BMPs would include an Unanticipated Discovery Plan for Cultural Resources.

## 28 Route B

29 Under Route B, Section O-1, like Route A, would extend along the southern  
30 boundary of the Roma Historic District and parallel the river. The two routes are  
31 equivalent through the Roma Historic District; therefore, the major long-term  
32 adverse impacts from Route B would be the same as Route A. Route B would  
33 extend further north into the neighborhood south of bridge. The viewshed and  
34 setting of the southern end of the historic district would be adversely affected by  
35 the infrastructure as it ascends and is atop the bluff. Historic properties within  
36 the residential neighborhood south of the bridge could be directly or indirectly  
37 impacted by Route B.

38 Section O-2 would cross the southern tip of the Fort Ringgold Historic District,  
39 including a portion of the district's archaeological component. Route B would  
40 have the same impacts as Route A. Proposed grading for fencing and patrol  
41 roads on Fort Ringgold might adversely impact archaeological resources.  
42 Additional archaeological surveys will be conducted to evaluate the nature and

1 significance of the Fort Ringgold site in this area, the result of which will be  
2 presented in the Final EIS.

3 Section O-3 is near the Los Ebanos POE and ferry, and within the southern and  
4 eastern side of the community of Los Ebanos. Route B extends west of the  
5 community of Los Ebanos, south near the area of the ferry, and surrounds the  
6 community of Los Ebanos on its south and east. It is further away from the ferry  
7 crossing than Route A, but is closer to the western portion of the community.  
8 Route B, as proposed, would have substantial impacts on the viewshed and  
9 setting of the ferry and POE area, although less than Route A. Adverse impacts  
10 on the community of Los Ebanos would be somewhat greater under Route B  
11 compared to Route A. Los Ebanos has a community cemetery on its western  
12 side. Impacts on Los Ebanos POE, ferry, and community would be long-term,  
13 major, and adverse.

14 Section O-5, Route B would have the same impacts on the La Lomita Historic  
15 District as Route A. Because there is substantial vegetative screening at the  
16 southern and eastern portions of the historic district, impacts on the viewshed  
17 and setting of this district are expected to be minor to moderate.

18 Under Route B, Section O-6 is identical to Route A in the vicinity of the  
19 Louisiana-Rio Grande Canal Company Irrigation System Historic District and  
20 would have the same impacts as noted in the discussion of this section under  
21 Route A. USBP is committed to working with the City of Hidalgo, community,  
22 and THC to identify solutions to minimize impacts on the historic district and  
23 historic Old Hidalgo Pumphouse.

24 In Section O-19, Route B parallels the Rio Grande, while Route A curves  
25 northward close to the developed portion of Brownsville. Route B presents a  
26 route farther away from many historic properties in Brownsville, although its route  
27 might have greater impacts on archaeological resources because it is an area  
28 with less development and, therefore, greater potential for undiscovered  
29 archaeological resources. Near the POE, Route B adopts the same alignment as  
30 Route A. The impacts on known cultural resources associated with selection of  
31 Route B in this part of Section O-19 are, therefore, identical to those discussed  
32 for Route A. Route B would present major long-term indirect and possibly direct  
33 impacts on the Neale House since it would be immediately west of the house.  
34 Section O-19, Route B would cause moderate to major, adverse, long-term  
35 indirect impacts on historic properties.

36 Sections O-10, O-14, O-17, and O-21 have the same alignment under Route B  
37 as noted under Route A. The impacts on known cultural resources associated  
38 with selection of Route B are identical to those discussed for Route A.

39 Archaeological resources between the 21 proposed tactical infrastructure  
40 sections could be adversely impacted by the funneling of cross border violators  
41 into the areas where there would be no fence. Increased foot traffic between

1 sections of fence in remote areas would reduce vegetation, disturb soils, and  
2 could uncover and destroy undiscovered resources. Since the locations of the  
3 21 sections were based on USBP operational requirements, including the ability  
4 to make apprehensions, the extent of disturbance should be minor and therefore  
5 the adverse impact would be minor, adverse, and permanent. BMPs would  
6 include an Unanticipated Discovery Plan for Cultural Resources.

#### 7 4.10.3 Alternative 3: Secure Fence Act Alignment Alternative

8 Under Alternative 3 of the Proposed Action, a double-layered fence with the  
9 patrol road in the median would require a 130-foot-wide corridor. Impacts from  
10 Alternative 3 would be long-term, adverse, and major on historic properties,  
11 including the Roma Historic District; Fort Ringgold; Los Ebanos ferry, POE, and  
12 community; La Lomita Historic District; Rancho Toluca Historic District; Landrum  
13 House; Fort Brown; Neale House; and Old Brulay Plantation

#### 14 4.10.4 Treatment of Historic Properties

15 USBP would identify measures to avoid, minimize, or mitigate adverse impacts  
16 on historic properties in consultation with the THC and other parties by complying  
17 with Section 106 of the National Historic Preservation Act. Other consulting  
18 parties, including the THC, federally recognized Native American tribes that  
19 might attach religious and cultural significance to historic properties affected by  
20 the project, representatives of local governments, landowners, and historic  
21 preservation groups and individuals, would be involved.

22 Mitigation measures could include recordation of affected architectural resources  
23 to the standards outlined by the Historic American Building Survey (HABS) or  
24 Historic American Engineering Record (HAER), or recovering archaeological  
25 data through a data recovery effort. Additionally, there are other treatment  
26 options that would be investigated. Methods for avoiding, minimizing, or  
27 mitigating impacts on resources of traditional, religious, or cultural significance to  
28 Native American tribes will be determined in consultation with tribes having  
29 ancestral ties to the USBP Rio Grande Valley Sector.

### 30 4.11 AESTHETICS AND VISUAL RESOURCES

31 The Proposed Action would impact visual resources both directly and indirectly.  
32 Construction of tactical infrastructure would result in the introduction of both new  
33 temporary (e.g., heavy equipment, supplies) and permanent (e.g., fencing and  
34 patrol roads) visual elements into existing viewsheds. Clearing and grading of  
35 the landscape during construction, as well as demolition of buildings and  
36 structures within the proposed project corridor, would result in the  
37 removal of visual elements from existing viewsheds. Finally, the fence sections  
38 would create a physical barrier potentially preventing access to some visual  
39 resources.

1 Impacts on aesthetic and visual resources would include short-term impacts  
2 associated with the construction phase of the project and use of staging areas,  
3 recurring impacts associated with monitoring and maintenance, and long-term  
4 impacts associated with the completed action. Impacts can range from minor,  
5 such as the impacts on visual resources adjacent to the proposed project corridor  
6 when seen from a distance or when views of fences are obstructed by  
7 intervening elements (e.g., trees, buildings) to major, such as the intrusion of  
8 fence sections into high-quality views within the LRGVNR or the setting of an  
9 NHL. The nature of the impacts would range from neutral for those land units  
10 containing lower quality views or few regular viewers, to adverse, for those land  
11 units containing high-quality views, important cultural or natural resources, or  
12 viewers who would have constant exposure to the fence at close distances.  
13 Beneficial impacts are also possible (e.g., addition of the fence increases the  
14 unity or dramatic impact of a view, removal of visual clutter within the proposed  
15 project corridor clarifies a view, or a viewer positively associates the fence with a  
16 feeling of greater security), but are considered to be less common.

#### 17 4.11.1 Alternative 1: No Action Alternative

18 Under the No Action Alternative, proposed tactical infrastructure would not be  
19 built and there would be no change in fencing, patrol roads, or other facilities  
20 along the U.S./Mexico international border in the proposed project locations  
21 within the USBP Rio Grande Valley Sector. Therefore, there would be no  
22 adverse impact attributable to construction, operation, or maintenance of the  
23 proposed tactical infrastructure. Conversely, the potential beneficial impacts of  
24 unifying a cluttered landscape in some areas would not be realized, however  
25 minor or subjective this beneficial impact might be.

#### 26 4.11.2 Alternative 2: Routes A and B

27 Under Alternative 2, a single line of fence and an associated patrol road would be  
28 constructed along either the routing depicted as Route A or Route B (see  
29 **Appendix F**). Although the choice of routing might alter the impacts on specific  
30 visual resources within the proposed project corridor (i.e., avoidance of section of  
31 park/refuge or culturally significant resource), the broader visual impacts  
32 associated with the two routes are comparable.

#### 33 Route A

34 **Project Characteristics.** The primary introduced visual elements associated  
35 with Route A are the single line of fencing, gates, patrol roads, access roads, and  
36 construction clutter (stockpiles of supplies and heavy equipment during  
37 construction). Route A would also potentially remove existing visual elements,  
38 such as buildings, vegetation, and subtle landforms (through grading or filling)  
39 that occur within the 60-foot permanent proposed project corridor. Finally, the  
40 fence would act as a physical barrier between viewers and those views that can

1 only be viewed from vantage points on the other side of the fence (e.g., views  
2 from the tops of levees).

3 Of these, addition of the line of fencing and the associated patrol road, removal  
4 of existing elements from the proposed project corridor, and the loss of access to  
5 specific visual resources due to the fact that the fence is a barrier would have  
6 long-term impacts on visual resources, while the remaining elements would have  
7 temporary or short-term impacts limited to the period of construction. The nature  
8 (adverse or beneficial) and degree (minor to major) of the long-term impacts can  
9 be affected by the appearance of the fencing (width, height, materials, color), the  
10 patrol road (paved or unpaved, width), and the access roads (number, paved or  
11 unpaved, width).

12 Removal of existing visual elements would also constitute a long-term impact.  
13 Where the existing element adds to the visual character and quality of the  
14 resource, the impact of its removal would be adverse. Where the existing  
15 element detracts from the visual character and quality of the resource (e.g.,  
16 rusted equipment or dead trees), the impact of removal could be beneficial. In all  
17 cases, removal of existing elements would have the net result of exposing more  
18 of the fence, patrol road, and other tactical infrastructure; in settings where the  
19 addition of the fence is considered to have a major adverse impact on visual  
20 resources, any benefit accruing from removal of existing elements would be  
21 outweighed by the more dominant adverse visual impact of the fence.

22 The impacts associated with the loss of access to specific visual resources can  
23 be affected primarily by the placement of the fence relative to those resources  
24 and inclusion of gates that allow access to those resources. USBP has already  
25 included provisions for a number of gates to allow access to agricultural fields,  
26 businesses, and cemeteries. These gates also allow access to some of the  
27 visual resources that would otherwise be blocked. Proposed gate locations are  
28 described in **Appendix D**.

29 **Visual Resource Concerns.** In **Section 3.11.2, Tables 3.11-1 and 3.11-2**  
30 provided a summary of the character and quality of visual resources currently  
31 present within the proposed project corridor. **Tables 4.11-1 and 4.11-2** show how  
32 implementation of Route A would likely alter the character and quality of existing  
33 visual resources within each land unit. **Figures 4.11-1 through 4.11-4** provide  
34 examples of typical impacts; these images show the impacts associated with the  
35 addition of a fence constructed using a type of pedestrian fence currently being  
36 constructed in other USBP sectors. These photographs provide approximations  
37 of the degree of alteration that would result from introduction of the fence and  
38 patrol road to these viewsheds.

39 In general, within park/refuge land units, the introduction of the fence and  
40 removal of vegetation from the proposed project corridor would likely constitute  
41 an adverse impact on the character and quality of visual resources. The degree  
42

**Table 4.11-1. Impact on the Character of Visual Resources within Typical Rio Grande Valley Land Units**

Land Units	Line	Color	Form	Texture
<b>Park/Refuge</b>	<p>The fence and patrol road also represent horizontal lines, but might disrupt existing layers and gentle curves, particularly where the fence would be taller than surrounding vegetation. Clearing and grading would introduce a visual break in the vegetation pattern.</p>	<p>The current fence design parameters call for fencing to be black. The vertical posts in the fence might blend with tree trunks and the transparent mesh “disappear” with distance.</p>	<p>The fence and patrol road are rectilinear in form and would contrast with existing forms in this land unit.</p>	<p>As man-made, synthetic elements, the fence and patrol road would contrast with the dominant texture of this land unit.</p>
<b>Rural</b>	<p>At short distances the fence would introduce a primarily horizontal line that might blend with other dominant horizontal lines like the levee and field breaks. The patrol road and access roads also should blend, both at short and longer distances. With greater distance, the mesh of the fence would “disappear,” making the vertical bollards of the fence the dominant line. These vertical lines might blend where other vertical elements are present (power poles, silos, remote video surveillance system) depending on the height of those elements in each area. The regularity of the lines could contrast with less regular lines.</p>	<p>The current fence design parameters call for fencing to be black. The vertical posts in the fence might blend with tree trunks and the transparent mesh “disappear” with distance.</p>	<p>The fence and patrol road are rectilinear in form and might result in greater domination of rectilinear forms compared to organic forms when viewed at a distance.</p>	<p>As a man-made, synthetic element, the fence would contrast with the dominant textures of this land unit. The patrol roads and access roads would not significantly alter the viewshed for most rural landscapes, as a number of roads and field breaks are already present in this land unit.</p>

Land Units	Line	Color	Form	Texture
<p><b>Town/Suburban Development</b></p>	<p>Because this land unit already includes a mixture of horizontal and vertical lines, the introduction of additional vertical lines would be consistent with the existing landscape from a distance. In closer proximity, however, the height and regularity of the fence line would likely contrast with existing lines.</p>	<p>The current fence design parameters call for fencing to be black. This coloration might blend or contrast with its surroundings depending on the colors in the foreground and background.</p>	<p>Because this land unit contains a larger number of rectilinear forms than the previous land units, the rectilinear forms of the fence and associated roads are more likely to blend with the forms of this land unit. The massing of the fence (height and length) would likely contrast with most other rectilinear forms, however.</p>	<p>Because this land unit contains a variety of textures, the textures of the fence and associated roads are more likely to blend with the textures of this land unit at least at a distance. Up close, the fence would contrast against natural textures and be more prone to blend with man-made elements.</p>
<p><b>Urban/Industrial</b></p>	<p>Because this land unit already includes a mixture of horizontal and vertical lines, the introduction of additional vertical lines would be consistent with the existing landscape from a distance. In closer proximity, however, the height and regularity of the fence line would likely contrast with existing lines.</p>	<p>The current fence design parameters call for fencing to be black. This coloration might blend or contrast with its surroundings depending on the colors in the foreground and background.</p>	<p>Because this land unit contains a larger number of rectilinear forms than the previous land units, the rectilinear forms of the fence and associated roads are more likely to blend with the forms of this land unit. Depending on the forms in the immediate area, though, the massing of the fence (height and length) could blend or contrast with existing forms.</p>	<p>Because this land unit contains a variety of textures, the textures of the fence and associated roads are more likely to blend with the textures of this land unit at least at a distance. Up close, the fence would contrast against natural textures and be more prone to blend with man-made elements.</p>

1 **Table 4.11-2. Quality of Visual Resources within Typical Rio Grande Valley**  
 2 **Land Units After Proposed Construction**

Land Units	Vividness	Intactness	Unity	Rating
<b>Park/Refuge</b>	Moderate	Moderate	Moderate	Moderate
<b>Rural</b>	Moderate	Moderate/High	Moderate	Moderate
<b>Town/Suburban Development</b>	Low/Moderate	Low/Moderate	Low/Moderate	Low/Moderate
<b>Urban/Industrial</b>	Low to High	Low/Moderate	Low to High	Moderate

3  
 4 of the impact would vary depending on the height of surrounding vegetation and  
 5 the presence of any other visually intrusive elements. For example, where the  
 6 fence is shorter than the levee and the view towards the levee is obscured by  
 7 thick vegetation, the fence would have less of a visual impact than in those areas  
 8 where clearings or shorter vegetation make the fence more visible. In those  
 9 sections where the park/refuge land unit is visually intruded upon by other land  
 10 units (i.e., this land unit is concentrated into a small area, as in Sections O-4,  
 11 O-5, O-6, O-7, O-8, O-10, O-13, and O-16), impacts on visual resources  
 12 associated with this land unit would be less compared to those in sections that  
 13 are dominated by the park/refuge unit.

14 In rural land units, the fence might blend with other linear features (e.g., levee,  
 15 field breaks) to the point where the impact is neutral. The degree to which the  
 16 fence contrasts with its surroundings would vary by season, as mature crops  
 17 would provide a greater variety of forms and textures, as well as greater  
 18 screening, of the fence compared to fallow fields. Inclusion of a larger number of  
 19 other intrusive elements (visual clutter), such as utility poles or towers, water  
 20 towers, and remote video surveillance system, can also reduce the overall impact  
 21 on visual resources within this land unit. For this land unit, therefore, impacts  
 22 could range from minor to major and neutral to adverse.

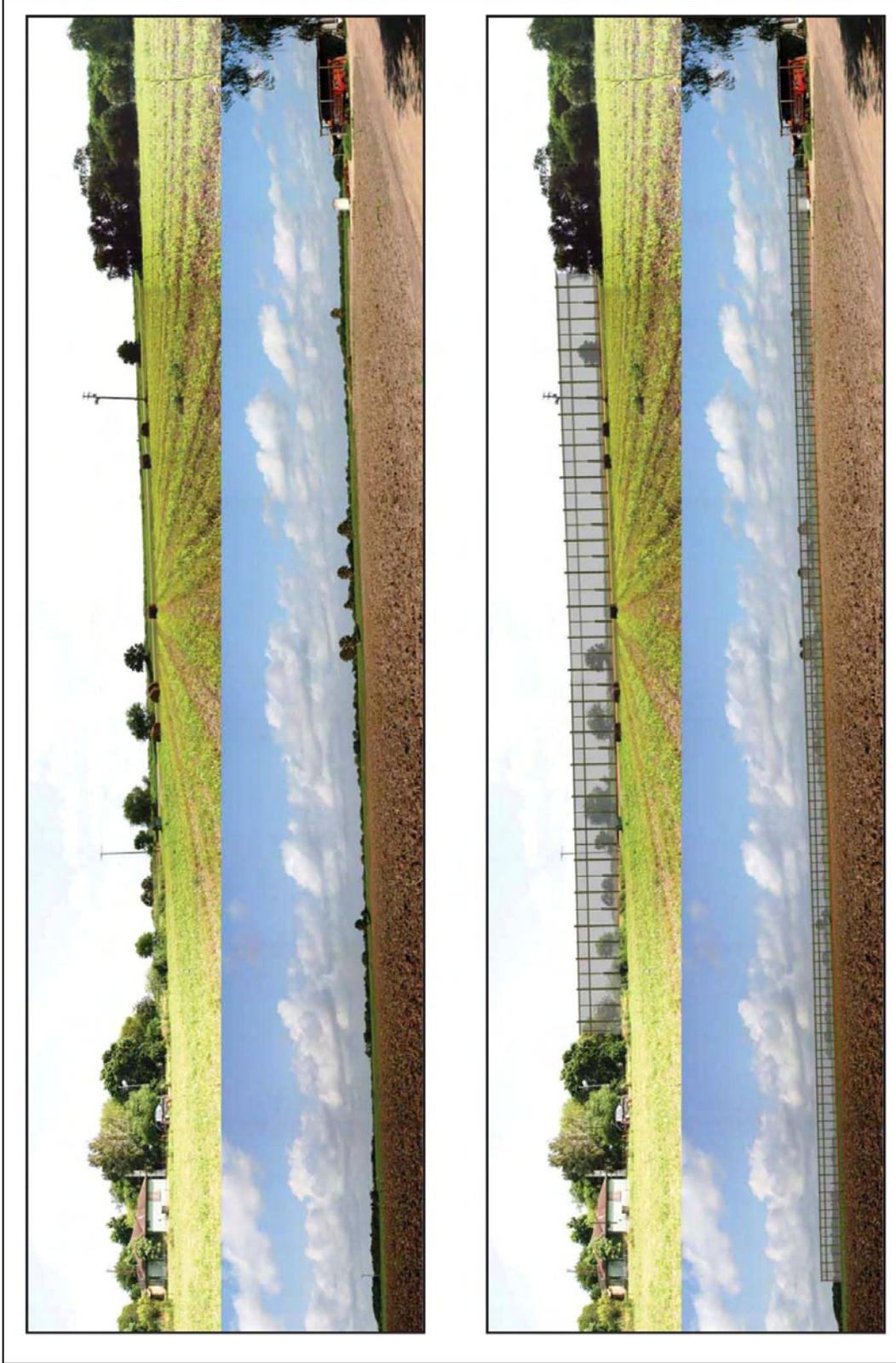
23 In Town/Suburban Development land units, there would likely be greater  
 24 screening of the fence due to the greater variety of lines, colors, forms, and  
 25 textures present; however, an 18-foot-tall fence would likely be one of the tallest  
 26 man-made visual elements in this setting, reducing its ability to blend. As with the  
 27 visual resources in other land units, the impact of Route A would vary depending  
 28 on its immediate setting; the more exposed the fence is and the greater the  
 29 contrast between it and surrounding elements, the greater the visual impact. For  
 30 this land unit, therefore, impacts could range from minor to major, but would  
 31 typically be adverse.

32 In Urban/Industrial land units, there would likely be greater screening of the fence  
 33 due to the greater variety of lines, colors, forms, and textures present, and an  
 34 increase in the use of other fences and more common occurrence of tall or  
 35



**Figure 4.11-1. Typical Views Towards Proposed Project Corridor, Showing How the Park/Refuge Land Unit Would Appear with a Fence and Patrol Road**

1



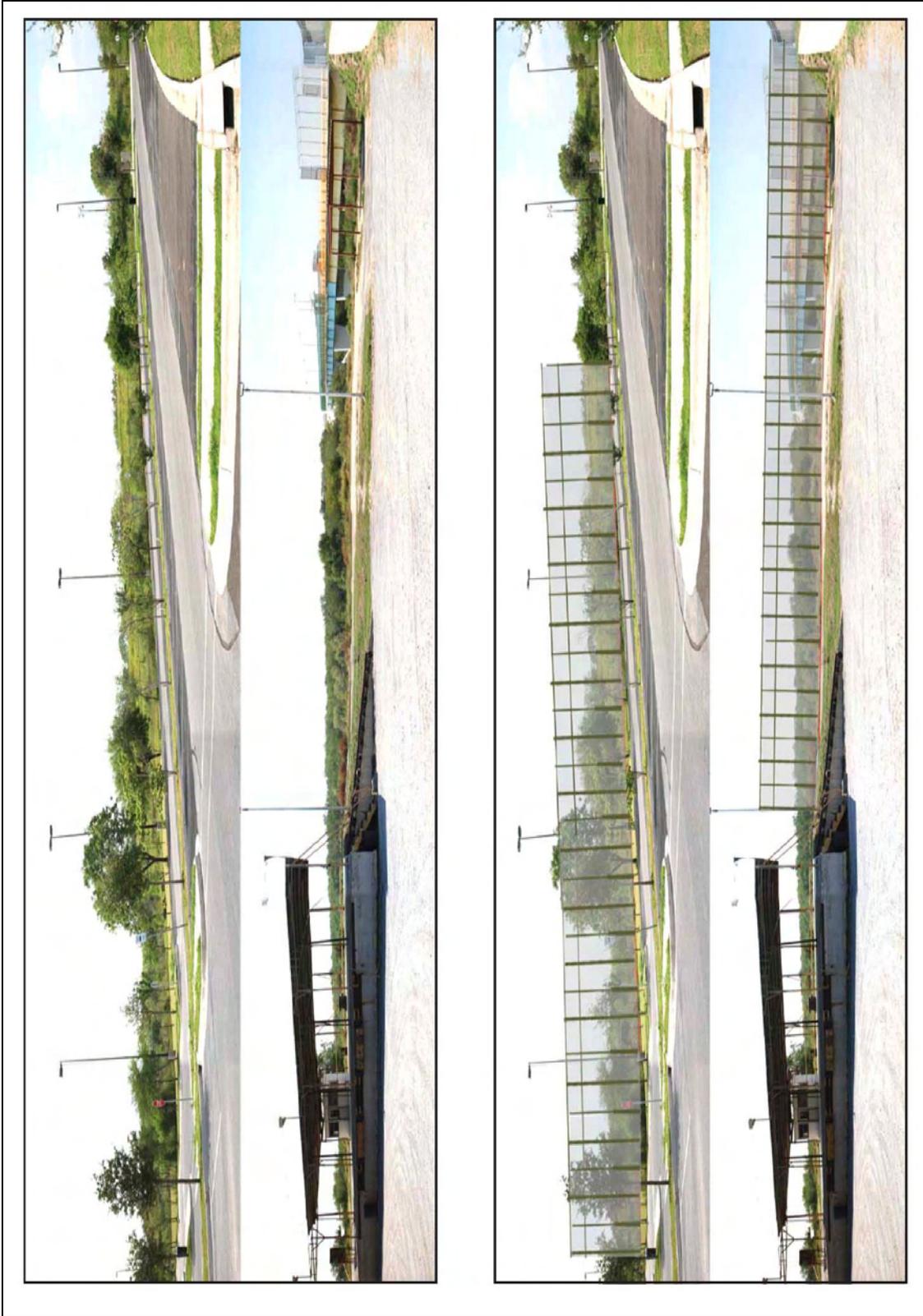
**Figure 4.11-2. Typical Views Towards Proposed Project Corridor, Showing How the Rural Land Unit Would Appear with a Fence and Patrol Road**

1



**Figure 4.11-3. Typical Views Towards Proposed Project Corridor, Showing How the Town/Suburban Land Unit Would Appear with a Fence and Patrol Road**

2



**Figure 4.11-4. Typical Views Towards Proposed Project Corridor, Showing How the Urban/Industrial Land Unit Would Appear with a Fence and Patrol Road**

1

1 massive forms would increase the ability of the fence to blend with its  
2 surroundings. As with the visual resources in other land units, the impact of  
3 Route A would vary depending on its immediate setting; the more exposed the  
4 fence is and the greater the contrast between it and surrounding elements, the  
5 greater the visual impact. For this land unit, therefore, impacts would range from  
6 minor to major, and neutral to adverse. The FHWA guidance (USDOT undated)  
7 cites examples where addition of a consistent aesthetic element to an urban  
8 setting helps create greater unity to the views within the land unit, thus resulting  
9 in a beneficial impact. Although this outcome is possible within this land unit  
10 type, a review of the settings along the proposed project corridor suggests that  
11 the best-case scenario would be a neutral or minor adverse impact.

12 Finally, with respect to the impacts on the specific visual resources listed in  
13 **Section 3.11.1**, implementation of Route A, would likely have short- or long-term  
14 adverse impacts on the settings of those resources. The greater the distance  
15 between the resource and the intrusive visual elements (primarily the fence), and  
16 the more intervening visual elements between them, the less the degree of the  
17 impact. For example, construction of the fence at a distance of 60 feet from a  
18 historic building would typically constitute a major adverse impact, while  
19 construction of the fence several hundred feet from the resource with intervening  
20 vegetation or buildings would reduce the impact to moderate or minor.  
21 Placement of the fence within the boundaries of an NHL or historic district,  
22 particularly where there is a high degree of visual continuity between resources  
23 (few noncontributing elements) would also be considered a major adverse impact  
24 on that resource. A more detailed discussion of the impacts on the settings or  
25 viewsheds of specific cultural resources is provided in **Section 4.8.2** of this EIS.

26 Intrusions into the settings or viewshed of many of these resources would need  
27 to be avoided, minimized, or mitigated depending on the extent and duration of  
28 the impact. Mitigation measures could include HABS documentation of historic  
29 resources, use of different fence materials (e.g., use of brick facing on a fence  
30 where surrounding buildings are brick construction, or change of color of fencing  
31 to blend into natural settings).

32 **Viewer Response Concerns.** In **Section 3.11.1**, the pool of potential viewers  
33 was grouped into several general categories. As noted in that discussion, any  
34 single viewer would have some responses to the alteration to the visual  
35 resources in each land unit that are based on their own personal experiences  
36 and ties to those resources, and other responses tied to more common  
37 experiences (group sentiment). Specific comments received from viewers during  
38 the scoping process for this EIS identified concerns about visual impacts  
39 throughout the proposed project corridor and with some of the specific natural or  
40 cultural resources noted above, but did not identify any new visual resources of  
41 concern. It should be noted that no explicit poll of viewer responses with respect  
42 to impacts on visual resources has been conducted for this EIS.

1 In many respects, the principle of “not in my backyard” has a strong correlation  
2 with the responses of viewers for whom view of the fence would be regular or  
3 constant (i.e., residential, commercial, or industrial viewers). Where the fence  
4 would directly impact private property, the viewer response from the landowner is  
5 likely to be that Route A would represent a major adverse impact on visual  
6 resources visible from their property. There is also a possibility that the viewer  
7 response in this instance could be beneficial, based on a feeling of increased  
8 safety or security (e.g., fence as protection). Responses from viewers located a  
9 greater distance from the fence, particularly if their view of the fence is obstructed  
10 by other elements or is simply part of the overall visual clutter, would typically be  
11 less intense (minor) and more likely neutral, unless the fence would obstruct a  
12 visual resource considered to be of high quality or cultural importance. In  
13 general, the closer the proximity of the viewer to the fence, the more likely the  
14 response is to be major and adverse.

15 For viewers likely to view the fence on a less regular basis (i.e., recreational  
16 viewers, special interest viewers, intermittent viewers), viewer responses would  
17 be tied to perception of how the tactical infrastructure has altered their access  
18 (impede existing views or impede physical access to views) to valued visual  
19 resources. Although any of these groups might object on principal to any type of  
20 alteration or feel a beneficial response due to a sense of increased security,  
21 responses would be more intense and adverse where alterations downgrade the  
22 quality or character of existing visual resources. Based on the comments  
23 received during the scoping process for this EIS, viewer responses appear to  
24 range from minor to major and neutral to adverse.

25 As a final point, for viewers accustomed to accessing views available from the  
26 levees or from settings other than parks or refuges, the construction of the fence  
27 would place a permanent barrier between the viewer and the visual resources in  
28 those locales. By presumption, any visual resource regularly sought out by a  
29 viewer would constitute a moderate or high quality visual resource; and  
30 restricting physical access to those resources would thus constitute a long-term  
31 major adverse impact for those viewers.

## 32 Route B

33 Route B was developed to decrease the extent to which the fence would  
34 physically impact certain cultural and natural resources. Selection of this route  
35 thus reduces or removes some of the impacts related to access compared to  
36 Route A.

37 **Project Characteristics.** The physical characteristics of Route B are similar to  
38 those for Route A, discussed above.

39 **Visual Resource Concerns.** To the extent that Route B mirrors Route A, the  
40 concerns regarding visual resources are identical to those discussed for Route A  
41 above. Where Route B deviates from Route A, the deviation is typically done to

1 minimize an impact on a natural or cultural resource, resulting in a lesser visual  
2 impact relative to that resource.

- 3 • Section O-1: Route B would avoid approximately 1.01 miles of the Arroyo  
4 Mesa annex of the LRGVNWR, but could potentially impact more  
5 residential areas. The avoidance of the LRGVNWR would lessen the  
6 impacts on the high-quality views associated with this resource area;  
7 however, Route B would impact a greater number of views from private  
8 residences.
- 9 • Section O-2: To avoid some small arroyos, Route B would be extended  
10 1.4 miles; 0.73 miles of this extra distance would cross the LRGVNWR.  
11 Route B, therefore, would impact additional visual resources within the  
12 LRGVNWR (and towards it from outside the refuge) compared to Route A.
- 13 • Section O-3: Route B represents an adjustment from the originally  
14 proposed project corridor to avoid natural areas along the Rio Grande  
15 where practical. Route B, therefore, would have fewer direct impacts on  
16 the visual resources associated with these natural areas (less removal of  
17 natural vegetation within the proposed project corridor), but would  
18 continue to visually obstruct views towards the Rio Grande and access to  
19 views along the Rio Grande.
- 20 • Section O-7: Route B represents a shortening of the originally proposed  
21 section in anticipation of the proposed Donna Canal POE. Route B would  
22 also avoid the Monterrey Banco annex of the LRGVNWR, resulting in a  
23 lessening of impacts on visual resources within the refuge.
- 24 • Section O-8: Route B represents an extension of the originally proposed  
25 section so that it meets the downriver end of the fencing to be placed for  
26 the proposed Donna POE. The increased length of fence would obstruct  
27 more visual resources compared to Route A. Tying the new fence into  
28 another fence would improve the overall consistency of the view at the tie-  
29 in point.
- 30 • Section O-9: Route B represents an extension of the originally proposed  
31 section to the west, following the IBWC levee ROW in an agricultural area.  
32 Again, an increase in the length of the section equates to an increased  
33 number of impacts on visual resources within that section compared to  
34 Route A.
- 35 • Section O-11: Route B would turn north and parallel the west side of the  
36 canal, crossing the canal farther north from the La Feria pump station.  
37 Should evaluation of the pump station determine that it represents a  
38 historic property, avoidance of this structure would have a beneficial  
39 impact on the viewshed of that resource.
- 40 • Section O-13: Route B represents a realignment of a portion of the section  
41 toward the east to avoid the Culebron Banco annex of the LRGVNWR,  
42 resulting in a lessening of impacts on visual resources within the refuge.

- 1       • Section O-14: Route B represents additional length added to the eastern  
2       end of Route A along the IBWC levee ROW. Again, an increase in the  
3       length of the section equates to an increased number of impacts on visual  
4       resources within that section compared to Route A.
- 5       • Section O-16: Route B represents a shortening of the proposed Route A  
6       to avoid traversing through approximately 0.20 miles of the Tahuachal  
7       Banco annex to the LRGVNWR, resulting in a lessening of impacts on  
8       visual resources within the refuge.
- 9       • Section O-18: Route B borders instead of intersects the Phillips Banco  
10       annex of the LRGVNWR. Although this route would reduce the impacts  
11       on visual resources within the annex, impacts would still exist relative to  
12       the views towards the annex from outside and physical access to the  
13       annex.
- 14       • Section O-19: Route B represents a realignment of the originally proposed  
15       project corridor away from an urban area on the edge of Brownsville to  
16       closer to the river bank. Route B thus minimizes the impacts on visual  
17       resources as seen from urban residences (e.g., the fence is farther away),  
18       but would still obstruct views of the Rio Grande from Brownsville and  
19       would limit access to current views along the Rio Grande.

20       **Viewer Response Concerns.** Implementation of Route B would improve viewer  
21       responses relative to impacts on specific sensitive resources, such as the  
22       LRGVNWR since Route B would avoid some of those resources. Otherwise, the  
23       viewer response concerns are comparable to those discussed for Route A.

#### 24       4.11.3 Alternative 3: Secure Fence Act Alignment Alternative

25       **Project Characteristics.** In addition to those physical characteristics already  
26       noted for Alternative 2, Alternative 3 would involve addition of a second line of  
27       fencing (permanent element, long-term impact) and remove a greater number of  
28       existing visual elements due to the larger proposed project corridor. As with the  
29       single line of fencing in Alternative 2, choice of fence colors and material types  
30       could affect the nature (adverse, neutral, beneficial) or intensity (minor to major)  
31       of the impacts on visual resources in certain land units or viewshed, as could  
32       removal of existing visual elements. In general, however, having two lines of  
33       fencing amplifies the overall visual impact of Alternative 2, as does the larger  
34       proposed project corridor. Impacts related to the physical characteristics of  
35       Alternative 3 are, therefore, likely to be major and adverse compared to those of  
36       Alternative 2.

37       **Visual Resource Concerns.** Implementation of Alternative 3 would also amplify  
38       the impacts on the character and quality of visual resources within each of the  
39       land units compared to Alternative 2. The broader proposed project corridor and  
40       additional line of fencing would have a greater visual contrast and a greater  
41       chance of dominating the view in most settings, although one could argue that

1 parallel lines of fencing would potentially add more visual unity to some settings.  
2 Long-term impacts on the visual environment associated with Alternative 3  
3 (permanent construction elements) would range from neutral to adverse, and  
4 moderate to major. Short-term impacts would also be more adverse and intense  
5 (moderate to major) given that construction of a double fence and wider corridor  
6 could take more time.

7 **Viewer Response Concerns.** Implementation of Alternative 3 would also  
8 amplify viewer responses, in most cases changing minor or neutral responses to  
9 moderate or major adverse responses. For the viewers with constant or close  
10 proximity exposure, a double line of fencing and larger corridor would be  
11 perceived as doubly intrusive. The proposed project corridor would intrude more  
12 closely on many landowners, increase the number of viewers that would have  
13 regular exposure, and would further complicate access to visual resources  
14 behind the far line of fencing. For viewers with less regular exposure, Alternative  
15 3 would still likely be perceived as having a greater impact than Alternative 2,  
16 simply because it makes impacts on various visual resources more difficult to  
17 avoid.

## 18 4.12 SOCIOECONOMIC RESOURCES, ENVIRONMENTAL JUSTICE, AND 19 SAFETY

### 20 4.12.1 Alternative 1: No Action Alternative

21 Under the No Action Alternative, there would be no change from the baseline  
22 conditions. Under this Alternative, illegal immigration, narcotics trafficking, and  
23 opportunities for terrorists and terrorist weapons to enter the United States would  
24 remain. Over time, the number of crimes committed by smugglers and some  
25 cross border violators would increase, and an increase in property damage would  
26 also be expected. If Alternative 1 were implemented, short-term local  
27 employment benefits from the purchase of construction materials and the  
28 temporary increase in construction jobs would not occur. Furthermore, money  
29 from construction payrolls that would circulate within the local economy would not  
30 be available.

### 31 4.12.2 Alternative 2: Routes A and B

#### 32 Route A

33 **Socioeconomics.** Construction of proposed tactical infrastructure associated  
34 with Route A would have minor beneficial direct and indirect impacts on  
35 socioeconomics through increased employment and the purchase of goods and  
36 services. Project impacts related to employment, temporary housing, public  
37 services, and material supplies would be minor, temporary, and easily absorbed  
38 within the existing USBP Rio Grande Valley Sector regional resource and  
39 socioeconomics infrastructure. Construction would occur over approximately 8

1 months in 2008, with a construction workforce peaking at about 200 workers.  
2 There would be no change in the permanent workforce.

3 As stated in **Section 2.2.2**, the preliminary estimate to construct the proposed  
4 tactical infrastructure is approximately \$210 million. This would represent  
5 approximately 8.4 percent of the estimated annual construction expenditures in  
6 the three-county region. Because much of the construction cost is in the  
7 fabrication of infrastructure components elsewhere in the United States to be  
8 shipped in, this would represent a short-term moderate beneficial impact on the  
9 local economy.

10 Changes in economic factors can also impact the social fabric of a community.  
11 For example, increases in permanent employment could stimulate the need for  
12 new housing units, and, as a result, increase demand for community and social  
13 services such as primary and secondary education, fire and police protection,  
14 and health care. Because there would be only a short-term increase in local  
15 employment, there would be no change in population size under this alternative.  
16 Therefore, demand for new housing units and other social services would not be  
17 expected.

18 **Population Growth and Characteristics.** Negligible short-term adverse and  
19 beneficial impacts on population growth and characteristics would be expected.  
20 Short-term moderate increases to populations would be expected in construction  
21 areas. Due to the large size of the regional construction trades industry,  
22 construction is expected to be drawn primarily from the regional workforce, with  
23 some project managers and specialized skilled workers brought in by the  
24 selected contractor. The temporary need for approximately 200 construction  
25 workers can be easily supplied by the three-county construction workforce of  
26 more than 25,000. Given the short timeframe for construction, it is unlikely that  
27 any nonlocal workers would be accompanied by their families. Therefore, the  
28 short-term nature and scale of the construction project would not induce indirect  
29 population growth in the region.

30 Construction of the project would require some acquisition of private property,  
31 including the potential dislocation of some property owners and tenants. Such  
32 dislocation could result in some population relocations within the region, but with  
33 little or no net change in the region's population.

34 **Employment and Income.** Minor short-term beneficial impacts, and long-term  
35 minor adverse impacts on employment and income would be expected. Each job  
36 created by implementation of Route A would generate additional jobs within  
37 companies that supply goods and services for the project. Direct and secondary  
38 jobs created would be temporary and short-term in nature. The project would not  
39 create any long-term employment in the region.

40 During the public scoping process, concerns were expressed that the project  
41 could hinder legitimate trade activities between the two border economies, and

1 that environmental impacts associated with the construction and long-term  
2 presence of the project could detract from outdoor recreation and ecotourism,  
3 particularly birding—reported to contribute \$150 million to the local economy  
4 annually. Some pedestrian fence sections would be located on recreational  
5 lands. For the most part, the pedestrian fence would be approximately 30 feet  
6 from the IBWC levee system. Indirect impacts on socioeconomics from  
7 recreation and ecotourism would be tied directly to the user’s perception that  
8 Route A has altered their access to valued visual or recreational resources.  
9 However, Route A would help to deter cross border violators, which would make  
10 the area safer for recreational users, ecotourists, and USBP agents in the  
11 immediate area. This could bring more users to the area that have felt it unsafe  
12 in the past. The net impacts on recreation and ecotourism are expected to be  
13 minor.

14 As to retail trade, research indicates cross-border trade is estimated to contribute  
15 at least \$1.2 billion per year in retail trade in McAllen and Brownsville alone  
16 (Coronado and Phillips 2005). The project would not affect the operations of  
17 established border crossings and bridges, nor alter procedures affecting the  
18 ability of individuals from either the United States or Mexico to continue to travel  
19 back and forth as they now do because there is nothing inherent in the design or  
20 location of the pedestrian fence sections that would hinder or restrict normal,  
21 legal cross-border interaction. As a consequence, no long-term impacts on  
22 legitimate regional income or economic structure are anticipated.

23 No permanent or long-term impacts on employment, population, personal  
24 income, or poverty levels; or other demographic or employment indicators would  
25 be expected from construction. Since Route A would not measurably affect the  
26 local economy or workforce, no social impacts are expected. There would be a  
27 net short-term increase in income to the region, as the funding for the project  
28 would come from outside the area, and, as a Federal project, construction  
29 workers would be paid the “prevailing wage” under the Davis-Bacon Act, which  
30 might be higher than the average wage in the construction industry locally.

31 **Agriculture.** Overall the impact on agriculture and agricultural landowners would  
32 be adverse, moderate, and long-term. The proposed project would impact  
33 agricultural lands in two ways. First, there could be some loss of cropland along  
34 the alignment of the proposed pedestrian fence for both construction and the  
35 proposed accompanying roadways for USBP vehicles. New tactical  
36 infrastructure is expected to permanently affect a corridor 60 feet wide, although  
37 the existing levee road would serve this function on the river side of the fence.  
38 The proposal provides gates at key locations that are intended to provide  
39 landowners with access to their property, but there could be some extra distance  
40 in reaching a given field. Installation of a pedestrian fence with gates could have  
41 minor adverse impacts on landowner’s access, the movement of machinery and  
42 equipment, planting and harvesting, potential problems of access for agricultural  
43 service firms (as opposed to owners/lessees), and a resulting increase in costs.

1 **Select Public Services.** Minor short-term and long-term beneficial impacts on  
2 public services would be expected. Generally, workers spend approximately 25  
3 to 30 percent of their wages locally for food, shelter, and entertainment, which  
4 would have an indirect beneficial impact on the local economy. Other indirect  
5 impacts would be noticed through the taxes generated by purchases, as well as  
6 payroll deductions. However, based on the large size of the ROI the impacts  
7 would be minor and dispersed throughout the ROI. The objective of the  
8 pedestrian fence is to reduce illegal activity along the border. This could ease  
9 the burden of local law enforcement agencies.

10 **Land Use.** Minor to moderate adverse indirect impacts would be expected from  
11 the imminent dislocation of some families due to property acquisition. Some  
12 housing properties would either be removed or visually impaired by the  
13 pedestrian fence and adjacent patrol roads. The social aspects of dislocation  
14 could be disruptive. Many families in the proposed project corridor have lived  
15 there for decades, some even centuries, and have strong emotional ties to the  
16 family land and homes.

17 These impacts would be mitigated to some extent by fair compensation for the  
18 acquisition or impairment, and relocation assistance to any displaced families.  
19 However, it would still be an adverse impact on those who do not wish to relocate  
20 regardless of the level of compensation. Furthermore, renters might receive  
21 relocation assistance, but are less likely than property owners to have the  
22 resources to resettle in a comparable location.

23 **Environmental Justice, Protection of Children, and Safety.** Some adverse  
24 disproportionate impacts on minority or low-income populations would be  
25 expected. Direct beneficial impacts on safety and the protection of children are  
26 expected from the projected deterrence of cross border violators, smugglers,  
27 terrorists, and terrorist weapons from entering the United States, and therefore  
28 provide for safer communities.

29 The proposed infrastructure runs through or adjacent to many rural settlements,  
30 small towns, and neighborhoods within larger cities. Property owners and  
31 residents would be affected by restricted access, visual intrusion, noise and  
32 disruption during construction, and, in some cases, loss of property. In such  
33 communities as Los Ebanos (Section O-3), Granjeno (Section O-5), Peñitas  
34 (Section O-4), and others, the proposed infrastructure severs or runs at the back  
35 edge of residential properties. These communities, and the neighborhoods  
36 affected in the larger communities such as Brownsville (Section O-19) and Roma  
37 (Section O-1) are of lower income than the Census Tract of which they are a part  
38 and are clearly subject to issues of environmental justice. In cases where  
39 properties would be acquired or substantially impaired, the impact would be  
40 mitigated through purchase at a fair price.

41 The proposed tactical infrastructure under this alternative would have short- to  
42 long-term direct beneficial impacts on children and safety in the ROI and

1 surrounding areas. The addition of tactical infrastructure could increase the  
2 safety of USBP agents in the Rio Grande Valley Sector. Route A would help to  
3 deter cross-border violators in the immediate area, which in turn could prevent  
4 drug smugglers, terrorists, and terrorist weapons from entering the surrounding  
5 area.

#### 6 Route B

7 **Population Growth and Characteristics.** There are no discernable differences  
8 between Routes A and B on the growth rate and characteristics of the population  
9 as in neither case is there an increase in the permanent population of the ROI.

10 **Employment and Income.** There is no discernable difference in employment or  
11 income between the two routes. To the extent that one is longer than the other,  
12 or involves more difficult construction in urban areas, one could involve a slightly  
13 different construction work force and expenditures, but at this point, there appear  
14 to be no obvious differences.

15 **Agriculture.** There are some differences in how the two routes would affect  
16 agriculture in terms of land lost and the impairment of access. But the  
17 differences vary by route among sections and neither Route A nor Route B  
18 consistently impacts agriculture in the same degree or direction. In general,  
19 sections that are longer would impact agriculture to a greater degree than would  
20 sections that are closer to the river. Thus, Route B would have a greater impact  
21 in Sections O-2, O-8, O-9, and O-14 and a lesser impact in Sections O-1 and  
22 O-7.

23 **Select Public Services.** There is no discernable difference between Route A  
24 and Route B in the impact on schools or law enforcement.

25 **Environmental Justice, Protection of Children, and Safety.** There are some  
26 moderate differences between the two routes regarding environmental justice,  
27 particularly as they affect residential properties. Again, Route A and Route B are  
28 not uniformly the same in this respect. For example, in Brownsville  
29 (Section O-19) and Los Ebanos (Section O-3), Route B is farther removed from  
30 residential properties; but in Roma (Section O-1), Route B impacts properties  
31 along Sebastian Street that are avoided by Route A.

#### 32 4.12.3 Alternative 3: Secure Fence Act Alignment Alternative

33 **Socioeconomic Resources.** Short-term beneficial impacts for this alternative  
34 would be similar to those under Alternative 2. This alternative would increase the  
35 need for more construction workers and materials. Also, the USACE predicted  
36 that the 25-year life cycle costs would range from \$16.4 million to \$70 million per  
37 mile depending on the amount of damage sustained by the fencing (CRS 2006).

1 **Environmental Justice, Protection of Children, and Safety.** Impacts under  
2 this alternative would be similar to those discussed for Alternative 2. Direct  
3 beneficial impacts on safety and the protection of children would be expected as  
4 Alternative 3 would be designed with two layers of pedestrian fence along each  
5 section. The additional layer of fencing would deter drug smugglers, terrorists,  
6 and cross-border violators, and therefore provide for a generally safer ROI and  
7 immediate area. Environmental justice issues would be greater for Alternative 3  
8 than for Alternative 2. Alternative 3 has a wider corridor and a more intrusive  
9 visual presence affecting the low-income, minority residents who live adjacent to  
10 the proposed infrastructure.

## 11 4.13 UTILITIES AND INFRASTRUCTURE

### 12 4.13.1 Alternative 1: No Action Alternative

13 Under the No Action Alternative, no impact on utilities and infrastructure would be  
14 expected because the tactical infrastructure would not be built and therefore  
15 there is no potential for impacts on utilities and infrastructure as a result of the No  
16 Action Alternative.

### 17 4.13.2 Alternative 2: Routes A and B

#### 18 Route A

19 **Waste Supply Systems.** Short-term negligible adverse impacts on the Rio  
20 Grande Valley irrigation and municipal water supply systems would be expected  
21 as a result of construction of the proposed tactical infrastructure sections near  
22 irrigation and municipal water supply infrastructure. Known infrastructure is  
23 presented in **Table 3.13-1**. All water supply infrastructure would be identified  
24 prior to construction, and impacts on these systems would be avoided to the  
25 maximum extent practical. Canals would be avoided to the maximum extent  
26 practicable. Pipelines that could not be avoided would be moved. Temporary  
27 interruptions in irrigation might be experienced when this infrastructure is moved.  
28 No long-term impacts would be expected.

29 **Drainage Systems.** Short-term negligible adverse impacts on Rio Grande  
30 Valley irrigation and storm water drainage systems would be expected. Known  
31 infrastructure is presented in **Table 3.13-1**. All drainages would be identified  
32 prior to construction and impacts on these systems would be avoided to the  
33 maximum extent practical. Adherence to proper engineering practices and  
34 applicable codes and ordinances would reduce storm water runoff-related  
35 impacts to a level of insignificance. In addition, erosion and sedimentation  
36 controls would be in place during construction to reduce and control siltation or  
37 erosion impacts on areas outside of the construction site. All storm water  
38 drainages would be identified prior to construction and impacts on these systems  
39 would be minimal.

1 **Municipal Sanitary Sewer Systems.** Short-term minor adverse impacts on  
2 municipal sanitary systems would be expected. Known infrastructure that could  
3 be impacted is presented in **Table 3.13-1**. All sanitary sewer infrastructure would  
4 be identified prior to construction and impacts on these systems would be  
5 avoided to the maximum extent practical. Any outfall pipes that would be  
6 affected by the proposed construction would be moved. No long-term impacts  
7 would be expected.

8 **Solid Waste Management.** Short-term minor adverse impacts on solid waste  
9 management would be expected. Solid waste generated from the proposed  
10 construction activities would consist of building materials such as concrete and  
11 metals (conduit and piping). The contractor would recycle construction materials  
12 to the greatest extent practical. Nonrecyclable construction debris would be  
13 taken to one or more of the Starr, Hidalgo, or Cameron County landfills permitted  
14 to take this type of waste. While some of the landfills in the Rio Grande Valley  
15 area might be at or near capacity, the remaining landfills have sufficient capacity.  
16 Solid waste generated associated with Route A would be expected to be  
17 negligible compared to the solid waste currently generated in Starr, Hidalgo, and  
18 Cameron counties, and would not exceed the capacity of any landfill.

19 **Transportation Systems.** No adverse impacts on transportation systems would  
20 be expected. The proposed construction would require delivery of materials to  
21 and removal of debris from the construction sites. Construction traffic would  
22 comprise a small percentage of the total existing traffic and many of the vehicles  
23 would be driven to and kept onsite for the duration of construction activities,  
24 resulting in relatively few additional trips. Furthermore, potential increases in  
25 traffic volume associated with proposed construction activities would be  
26 temporary. Heavy vehicles are frequently driven on local transportation systems.  
27 Therefore, the vehicles necessary for construction would not be expected to have  
28 a heavy impact on local transportation systems. No road or lane closures would  
29 be anticipated. However, if roadways or lanes are required to be closed, USBP  
30 would coordinate with TDOT and local municipalities.

31 **Electrical and Natural Gas Systems.** Short-term, minor, adverse impacts on  
32 the Rio Grande Valley electrical and natural gas systems would be expected. All  
33 electrical and natural gas infrastructure would be identified prior to construction  
34 and impacts on these systems would be avoided to the maximum extent  
35 practical. Any electrical transmission or natural gas distribution lines impacted by  
36 construction would be moved. Temporary interruptions in electrical power  
37 transmission and natural gas distribution could be experienced when this  
38 infrastructure is moved. No long-term impacts would be expected.

## 39 Route B

40 The potential impacts of the construction associated with Route B on  
41 infrastructure and utilities would be expected to be similar to the potential impacts  
42 described above for Route A.

1    **4.13.3 Alternative 3: Secure Fence Act Alignment Alternative**

2    The potential impacts of Alternative 3 on infrastructure and utilities are expected  
3    to be similar to the potential impacts of Alternative 2. However, the proposed  
4    project corridor for Alternative 3 is larger. Therefore, it is possible that a greater  
5    number of utility lines could be affected. In addition, more solid waste would be  
6    generated under Alternative 3 because two fences would be built rather than  
7    one.

8    **4.14 HAZARDOUS MATERIALS AND WASTE**

9    **4.14.1 Alternative 1: No Action Alternative**

10   Under the No Action Alternative, no impacts on hazardous materials and waste  
11   management would be expected because the tactical infrastructure would not be  
12   built and would not lead to an increase in use or disposal of hazardous materials  
13   or wastes.

14   **4.14.2 Alternative 2: Routes A and B**

15    **Route A**

16   Short-term negligible adverse impacts would be expected. Products containing  
17   hazardous materials (such as fuels, oils, lubricants, pesticides, and herbicides)  
18   would be procured and used during construction. It is anticipated that the  
19   quantity of products containing hazardous materials used would be minimal and  
20   their use would be of short duration. Herbicides would be used along the fence  
21   to control herbaceous vegetation. Herbicides would be applied according to  
22   USEPA standards and regulations. Therefore, no long-term impacts on humans,  
23   wildlife, soils, and water would be expected.

24   Accidental spills could occur during construction. A spill could potentially result in  
25   adverse impacts on wildlife, soils, water, and vegetation. However, only small  
26   amounts of hazardous materials are expected. Contractors would be responsible  
27   for the management of hazardous materials and wastes. USBP would also  
28   require that the contractor keep any necessary materials and equipment onsite to  
29   quickly contain any spill or leak. The management of hazardous materials and  
30   wastes would include the use of BMPs, a pollution prevention plan, a Spill  
31   Prevention Control and Countermeasures (SPCC) Plan and a storm water  
32   management plan. All hazardous materials and wastes would be handled in  
33   accordance with applicable Federal, state, and local regulations.

34   ASTs have been observed within the proposed project corridor. If it is necessary  
35   to remove an AST, removal would be conducted in accordance with all applicable  
36   Federal, state, and local regulations. A Phase I Environmental Site Assessment  
37   would be conducted in conjunction with any real estate transactions associated  
38   with the Proposed Action. If ACM and LBP are identified in buildings that need to

1 be removed, removal and disposal would be conducted in accordance with all  
2 applicable Federal, state, and local regulations. Therefore, no impacts on  
3 humans, wildlife, soils, water, and vegetation would be expected as a result of  
4 hazardous materials and wastes. Additionally, Alternative 2 would not have an  
5 impact on Federal, state, or local hazardous wastes management or pollution  
6 prevention programs.

7 **Route B**

8 Impacts associated with hazardous materials and wastes for Route B would be  
9 similar to those described above for Route A.

10 **4.14.3 Alternative 3: Secure Fence Act Alignment Alternative**

11 Short-term minor adverse impacts would be expected. The impacts would be  
12 similar to the impacts described for Alternative 2. However, two fence layers  
13 would be constructed, so greater quantities of hazardous materials would be  
14 used for more construction. The increased risk associated with a potential leak  
15 or spill would be minor.

16