

SECTION 3.0
AFFECTED ENVIRONMENT AND CONSEQUENCES



1 **3.0 AFFECTED ENVIRONMENT AND CONSEQUENCES**

2
3 **3.1 PRELIMINARY IMPACT SCOPING**

4
5 This section of the EA describes the existing natural and human environment in the study
6 corridor within El Paso and Hudspeth counties. All of the proposed infrastructure projects
7 would take place in previously disturbed areas between the Rio Grande and the canal
8 (see Figure 1-2). Where data for resources are typically provided on a county-wide basis
9 (e.g., socioeconomics), the affected environments for those resources are described by
10 county. Otherwise, where possible, resources were described for the project corridor.

11
12 Data were derived from the most recent sources (e.g., land use maps, soil surveys,
13 groundwater basin maps), and all area calculations for resource categories were
14 conducted by overlaying the boundaries of the projects in the project corridor on to the
15 data source and determining the area of the affected resource category in Geographic
16 Information Systems (GIS).

17
18 Impacts to the human and natural environment can be characterized as beneficial or
19 adverse, and can be direct or indirect based upon the result of the action. Impacts are
20 also characterized as being permanent or temporary, where temporary impacts are
21 defined as those that occur immediately during or after construction, and permanent
22 impacts are those caused by the placement, use, and operation of infrastructure.

23
24 Impacts can vary in magnitude from a slight to a total change in the environment. The
25 impact analysis presented in this EA is based upon existing regulatory standards,
26 scientific and environmental knowledge and best professional opinions. The impacts on
27 each resource are described as significant, moderate, minor (minimal), insignificant or no
28 impact. Significant impacts are those effects that would result in substantial changes to
29 the environment (as defined by 40 CFR -1508.27). All impacts described are adverse
30 unless otherwise noted.

1 Only those parameters and resources that have the potential to be affected by the
2 Proposed Action Alternative, Floating Foundation Fence Alternative or the No Action
3 Alternative are described. The resources listed below would not be affected by any of the
4 alternatives considered in this EA, and therefore will not be discussed further:
5

6 **Physiography**

7 The physiography of the project area was discussed in the 2006 PEA (USBP 2006), and
8 that discussion is incorporated herein by reference. The topography of the project area
9 is generally flat, associated with the floodplain of the Rio Grande. Man-made alterations
10 to the topography consist of the EPCWID1 and HCCRD1 canals which are excavated
11 and maintained on the U.S. side of the river, and the USIBWC levee which separates
12 the canals from the Rio Grande floodplain. Practically the entire landscape within the
13 project area is altered to some degree by development. No alteration of the topography
14 of the project area would occur as a result of the Proposed Action Alternative; therefore,
15 physiography impacts will not be discussed further.
16

17 **Geology and Soils**

18 Geological resources include physical surface and subsurface features of the earth
19 such as geological formations, and the seismic activity of the area. The Proposed
20 Action Alternative and Floating Foundation Fence Alternative involve only disturbances
21 to the topsoil layers, and in the case of creating holes for either fence posts or light
22 poles, the impacts will occur to only a very small surface area, not substantially altering
23 the geology of the region. Additionally, all roads proposed for improvement within the
24 project corridor are preexisting, and would, therefore, not require substantial
25 modifications to the area's topography (i.e., road cuts). There are no critical geologic
26 resources or sensitive seismic areas located in the vicinity of the project corridor;
27 therefore, geologic resources will not be discussed further.
28

29 Soil components within the project area were described in the 2006 PEA (USBP 2006),
30 and those descriptions are incorporated herein by reference. Soils in the project area
31 consist of fine sandy and silty clay loams associated with the Rio Grande floodplain. All

1 of the soils have been disturbed by canal excavation, levee and road construction, and
2 general grading and leveling of the area around the river and the canals. On the U.S.
3 side of the canal system, the soils are tilled and irrigated in rural areas for agricultural
4 crop production. No unique or prime farmland soils are located within the project
5 corridor, and soils in staging areas outside the construction corridor would not be
6 permanently disturbed; therefore soils and soil impacts will not be discussed further.

7
8 **Climate**

9 None of the alternatives considered in this EA would affect or be affected by climate, so
10 climate impacts will not be discussed further.

11
12 **Roadways/Traffic**

13 All of the activities proposed by the Proposed Action Alternative and Floating
14 Foundation Fence Alternative would take place on the levees and canals along the
15 U.S.-Mexico border, and no activities would take place on public roadways, other than
16 normal transport of goods and personnel on an intermittent basis. Therefore, impacts to
17 roadways and traffic will not be discussed further.

18
19 **Communications**

20 None of the action alternatives would affect communications systems in the area.

21
22 **Sustainability and Greening**

23 EO 13423, *Strengthening Federal Environmental, Energy, and Transportation*
24 *Management* (January 24, 2007) promotes environmental practices, including
25 acquisition of bio-based products, environmentally preferable, energy-efficient, water-
26 efficient, and recycled-content products, and maintenance of cost-effective waste
27 prevention and recycling programs in government facilities. The Proposed Action
28 Alternative would use minimal amounts of resources during construction and
29 maintenance and there would be minimal changes in USBP operations. Therefore, the
30 Proposed Action Alternative would have negligible impacts on sustainability and
31 greening.

1 **Wild and Scenic Rivers**

2 None of the alternatives would affect any designated Wild and Scenic Rivers because
3 no rivers designated as such are located within or near the project corridor.

4
5 **3.2 LAND USE**

6
7 **3.2.1 Affected Environment**

8 The entire project corridor is owned and maintained by USIBWC, EPCWID1 and
9 HCCRD1. It is maintained for flood control and irrigation water diversion, and the
10 general public does not generally access the area, except in the adjacent Rio Bosque
11 Wetland Park. The adjacent areas on the U.S. side of the EPCWID1 and HCCRD1
12 canals range from developed residential and commercial/industrial property in the City
13 of El Paso to tilled and irrigated agricultural land south and east of the city in El Paso
14 County. In Hudspeth County, the adjacent areas on the U.S. side of the levee and
15 canal are tilled and irrigated agricultural land.

16
17 **3.2.2 Environmental Consequences**

18 **3.2.2.1 No Action Alternative**

19 The No Action Alternative would have no direct adverse impacts, since no fence or
20 lighting would be installed, and no new bridges would be constructed.

21
22 **3.2.2.2 Proposed Action Alternative**

23 The Proposed Action Alternative would occur within the property owned and managed
24 by USIBWC, EPCWID1 and HCCRD1, and currently used for USBP enforcement
25 activities; therefore, the proposed use is compatible with the existing land use, and no
26 direct effect on land use in the region would occur. Indirect beneficial effects would
27 occur due to reduced illegal traffic from crossing IAs and resulting damage to adjacent
28 agricultural fields.

29

1 **3.2.2.3 Floating Foundation Fence Alternative**

2 The Floating Foundation Fence Alternative would also occur within property owned and
3 managed by USIBWC, EPCWID1 and HCCRD1, and currently used for USBP
4 enforcement activities; therefore, the proposed use is compatible with the existing land
5 use, and no direct effect on land use in the region would occur. Indirect beneficial
6 effects would occur due to reduced illegal traffic from crossing IAs and resulting damage
7 to agricultural fields.

8
9 **3.3 HYDROLOGY AND GROUNDWATER**

10
11 **3.3.1 Affected Environment**

12 Subsurface aquifers within the project area were described and discussed in the 2006
13 PEA (USBP 2006), and those descriptions and discussions are incorporated herein by
14 reference.

15
16 Subsurface water resources within the project area are found in the Hueco Basin, which
17 is recharged by storm water, and in the Rio Grande aquifer system, which is recharged
18 by stream flow originating as precipitation in the mountains of Colorado and northern
19 New Mexico, as well as by irrigation-return recharge. The primary loss of subsurface
20 water resources in the project area is through wells which extract groundwater for
21 municipal and irrigation uses.

22
23 The average daily water demand for the City of El Paso was 97 million gallons per day
24 in 2006 (El Paso Water Utilities 2007), and annual water use in El Paso County and
25 Hudspeth County was 11.1 billion gallons and 5.5 billion gallons, respectively, in 2004
26 (Texas Water Development Board 2007). Available water supply for El Paso County in
27 2005 was 49 billion gallons, and for the lower portion of Hudspeth County it was
28 approximately 200 billion gallons. Neither county is experiencing water shortages due
29 to excess demand over water supply.

1 **3.3.2 Environmental Consequences**

2 **3.3.2.1 No Action Alternative**

3 There would be no additional use of subsurface water resources.

4
5 **3.3.2.2 Proposed Action Alternative**

6 Local subsurface water resources would be utilized for dust control and all-weather
7 surfacing of roads in the project area, and water would be obtained from existing
8 suppliers. Water would also be used for mixing and preparing concrete used to
9 construct the fence footings and to install the light standards. It is estimated that
10 approximately 12 to 14 million gallons of water would be used over the 56.7-mile length
11 of the project during the course of construction (approximately 2 years). Because the
12 water required for the Proposed Action Alternative would be considered insignificant
13 when compared to the very large average water use and availability of the City of El
14 Paso and El Paso and Hudspeth counties, and the increased water use would be
15 temporary during the construction period, no significant impact on water resources
16 would result from implementation of the Proposed Action Alternative.

17
18 **3.3.2.3 Floating Foundation Fence Alternative**

19 Groundwater resources impacts for implementation of the Floating Foundation Fence
20 Alternative would be similar to or slightly greater than those described above for the
21 Proposed Action Alternative, but impacts would still be insignificant. It is anticipated that
22 more concrete would be used, resulting in more water required for the fence portion of
23 the project. However, it has not been decided where the construction of the fence/road
24 pre-cast sections would take place, and construction could take place outside of the
25 region.

26
27 **3.4 SURFACE WATERS AND WATERS OF THE U.S.**

28
29 **3.4.1 Affected Environment**

30 Surface water resources in the area consist of the Rio Grande and various canals which
31 divert the river water flow for irrigation and flood control purposes. The Rio Grande is

1 located adjacent to, but not within, the project corridor. The EPCWID1 and HCCRD1
2 canals are located directly adjacent to the project area, and would be crossed by the
3 eight proposed bridges. No waters of the U.S. (WUS) are located within the project
4 corridor.

5
6 The only wetlands in the vicinity of the project area are found in the Rio Grande, the Rio
7 Bosque Wetland Park, the Alamo Arroyo near Fort Hancock and the Diablo Arroyo at
8 the east end of the project corridor. None of these wetland areas are located within the
9 proposed project construction footprint; however, the Rio Bosque Wetland Park, the
10 Alamo Arroyo and the Diablo Arroyo are located adjacent to the project corridor.

11 12 **3.4.2 Environmental Consequences**

13 **3.4.2.1 No Action Alternative**

14 Under the No Action Alternative, no new infrastructure would be constructed in the
15 project area, and there would be no impacts to surface water resources and wetlands.

16 17 **3.4.2.2 Proposed Action Alternative**

18 The Proposed Action Alternative is not expected to directly impact surface water
19 resources, and no activities would take place in jurisdictional WUS, including wetlands.
20 No construction is planned within Alamo Arroyo or Diablo Arroyo that would require fill
21 within the jurisdictional portions of these drainages. A Storm Water Pollution Prevention
22 Plan (SWPPP) would be prepared prior to construction, and BMPs would be
23 implemented in order to minimize impacts to surface water resources resulting from
24 erosion during construction or fluids spills/leaks from construction equipment.
25 Therefore, impacts to surface water resources would be minimal.

26 27 **3.4.2.3 Floating Foundation Fence Alternative**

28 Surface water resources impacts from the implementation of this alternative would be
29 similar to those described above for the Proposed Action Alternative.

1 **3.5 FLOODPLAINS**

2
3 **3.5.1 Affected Environment**

4 The current floodplain of the Rio Grande on the U.S. side of the river is defined by the
5 Rio Grande and the USIBWC flood control levee. The floodplain is characterized by
6 relatively flat ground, vegetated by various bunch-type grasses and invasive species
7 which are routinely mowed by USIBWC for flood control, and to improve visibility for
8 USBP operations. The only natural vegetation remaining in the floodplain is a narrow
9 strip of riparian vegetation immediately adjacent to the Rio Grande. A dirt road runs
10 along the unprotected side of the levee within the floodplain.

11
12 Pursuant to the National Flood Insurance Act of 1968, as amended (42 U.S.C. 4001 et
13 seq.), and the Flood Disaster Protection Act of 1973 (P.L. 93-234, 87 Stat. 975), EO
14 11988, Floodplain Management, requires that each Federal agency take actions to
15 reduce the risk of flood loss, minimize the impact of floods on human safety, health and
16 welfare, and preserve the beneficial values which floodplains serve. EO 11988 requires
17 that agencies evaluate the potential effects of actions within a floodplain and to avoid
18 floodplains unless the agency determines that there is no practicable alternative.
19 Where the only practicable alternative is to site in a floodplain, a planning process is
20 followed to insure compliance with EO 11988. This process includes the following
21 steps:

- 22
23 • Determination of whether or not the action is in the regulatory floodplain;
24 • conduct early public notice;
25 • identify and evaluate practicable alternatives, if any;
26 • identify impacts of the action;
27 • minimize the impacts;
28 • reevaluate alternatives;
29 • present the findings and a public explanation; and
30 • implementation of the action.
31

32 This process is further outlined on the Federal Emergency Management Agency's
33 (FEMA), Environmental Planning and Historic Preservation Program web site (FEMA
34 2006). As a planning tool, the NEPA process incorporates floodplain management

1 through analysis and public coordination, ensuring that the floodplain management
2 planning process is adhered to. In addition, floodplains are managed at the local
3 municipal level through the assistance and oversight of FEMA.

4
5 **3.5.2 Environmental Consequences**

6 **3.5.2.1 No Action Alternative**

7 Because no construction activities would take place under the No Action Alternative,
8 there would be no impacts to the Rio Grande floodplain.

9
10 **3.5.2.2 Proposed Action Alternative**

11 The Proposed Action Alternative would install light poles within the Rio Grande
12 floodplain at the base of the USIBWC levee. The poles would not impede flood water
13 flow within the floodplain, and would not impact the integrity of the levee, so floodplain
14 impacts would be minimal. Installation of the light standards on the levee would result
15 in increased risks of levee failure. Installation of the lights north of the levee would
16 require that the lights be substantially more powerful to provide an equivalent level of
17 illumination within the floodplain, where it is needed for enforcement and safety
18 reasons. This would result in much larger area illuminated and a higher potential for
19 light trespass into sensitive areas (e.g. Rio Bosque Wetland Park) and residential areas.
20 Thus, installation within the floodplain is the only practicable alternative. Some
21 equipment or material staging could occur within the Rio Grande floodplain as well, but
22 this would be temporary, and no equipment or materials would be left during high water
23 events. All other activities (installation of fence and bridges) would occur outside of the
24 floodplain.

25
26 **3.5.2.3 Floating Foundation Fence Alternative**

27 Floodplain impacts for the Floating Foundation Fence Alternative would be the same as
28 for the Proposed Action Alternative.

3.6 VEGETATIVE HABITAT

3.6.1 Affected Environment

A general vegetation species survey conducted by the USACE on a portion of the project corridor was completed on February 4, 2003. Vegetation observed consisted mainly of bunch-type grasses, Russian thistle (*Salsola kali*), saltcedar (*Tamarix ramisissima*), dandelion (*Taraxacum* spp.), and cottonwood (*Populus* spp.). Various willows (*Salix* spp.) were located within the floodplain of the Rio Grande adjacent to the river.

A second vegetation species survey was conducted on January 17, 2007. In addition to those species identified above, vegetation observed included the following: tree cholla (*Opuntia imbricata*), four-winged saltbush (*Atriplex canescens*), mesquite (*Prosopis* sp.), cattail (*Typha* sp.) and prickly pear (*Opuntia* spp.).

The levee system grasses are mowed regularly to ensure suitable design flood features and slope protection, and to provide clearance for maintenance equipment and USBP vehicles. The banks and bed of the EPCWID1 and HCCRD1 canals are regularly maintained by dredging to remove excess sediment and debris, and to clear bank vegetation to improve flow characteristics. Vegetation between the canal and the river has been either cut and removed, or is routinely mowed to provide visibility for USBP operations. Only a very narrow riparian corridor (approximately 0-8 feet wide) remains along the top banks of the Rio Grande.

2 The Rio Bosque Wetland Park is a
4 wetland restoration project constructed
6 in 1997, and managed by the University
8 of Texas at El Paso (UTEP)
10 (Photograph 3-1). The bosque area
12 was restored, and wetland hydrology
14 was introduced through a series of
16 channels and basins connected to the
18 adjacent irrigation canals. The park
20 now supports a wide variety of native
22 wetland and riverside flora (UTEP-
24 Center for Environmental Resource
25 Management [CERM] 2007).



Photograph 3-1. Rio Bosque view from the USIBWC levee

26

27 **3.6.2 Environmental Consequences**

28 **3.6.2.1 No Action Alternative**

29 The No Action Alternative would preclude any construction or installation of TI, so there
30 would be no impacts to vegetative habitat.

31

32 **3.6.2.2 Proposed Action Alternative**

33 Because the project corridor has already been disturbed from levee and canal
34 construction, impacts to native vegetation would be negligible. Construction activities
35 which would disturb vegetation would be kept to a minimum, and existing vegetation
36 would be left in place wherever possible. Temporarily disturbed areas along the
37 construction access roads in the Rio Grande floodplain and in the temporary staging
38 areas would be allowed to revegetate naturally, and no herbicides would be used. No
39 activities would take place within the Rio Bosque Wetland Park, the Alamo Arroyo or the
40 Diablo Arroyo. Beneficial, indirect effects on the Rio Bosque Wetland Park would be
41 expected as illegal traffic through the park is reduced or eliminated once the TI is
42 completed.

43

3.6.2.3 Floating Foundation Fence Alternative

Vegetative habitat impacts resulting from the Floating Foundation Fence Alternative would be minimal, since the fence would be placed on top of the levee with no vegetated ground disturbance

3.7 WILDLIFE AND AQUATIC RESOURCES

3.7.1 Affected Environment

A general animal species survey was conducted by USACE on February 4, 2003. Animal species observed during the survey consisted of: redbelt hawk (*Buteo jamaicensis*), American kestrel (*Falco sparverius*), great blue heron (*Ardea herodias*), cattle egret (*Bubulcus ibis*), muskrat (*Ondatra zibethicus*), peregrine falcon (*Falco peregrinus*), common black hawk (*Buteogallus anthracinus*), greater roadrunner (*Geococcyx californianus*), northern goshawk (*Accipiter gentiles*), mallard (*Anas platyrhynchos*), black-tailed jackrabbit (*Lepus californicus*), blue-winged teal (*Anas discors*), mule deer (*Odocoileus hemionus*) tracks, and fox (*Vulpes spp.* or *Urocyon cinereoargenteus*) tracks. A group of wading birds and raptors (no owls) of varying color phases and sizes were observed, but positive identifications of these were not made.

In the January 17, 2007 survey, conducted by GSRC, species observed included mallard, Swainson's hawk (*Buteo swainsoni*), killdeer (*Charadrius vociferus*), northern harrier (*Circus cyaneus*), wood duck (*Aix sponsa*), Chihuahuan raven (*Corvus cryptoleucus*), loggerhead shrike (*Lanius ludovicianus*), American kestrel, great-tailed grackle (*Quiscalus mexicanus*), cattle egret, mourning dove (*Zenaida macroura*), great blue heron and common moorhen (*Gallinule chloropus*).

Burrowing owls (*Athene cunicularia*) have been observed by USBP agents and during surveys of the levee by USIBWC personnel (USIBWC 2007). This species may use existing burrows in the levee flanks year around. The burrows might also be used for nesting.

1 Within the Rio Bosque Wetland Park, over 216 species of birds utilize the park wetland
2 areas, including 39 species of conservation concern (UTEP-CERM 2007).

3
4 There are no aquatic resources within the project corridor. The water in the irrigation
5 canals is pumped from the river and screened. In addition, the canals are sometimes
6 dry during droughts and non-irrigation seasons, and thus would not support a viable
7 aquatic fauna population.

8 9 **3.7.2 Environmental Consequences**

10 **3.7.2.1 No Action Alternative**

11 Under the No Action Alternative, no construction would take place; therefore, there
12 would be no impacts to wildlife.

13 14 **3.7.2.2 Proposed Action Alternative**

15 Direct impacts to wildlife resulting from the operation of the high intensity lighting at
16 night could potentially occur. Approximately 21 additional miles of the floodplain along
17 the Rio Grande would be illuminated under this alternative. The increase in lights along
18 the border could also produce some long-term behavioral effects, although the
19 magnitude of these effects in some areas is not presently known. Artificial lighting can
20 disrupt terrestrial animal dispersal movement or increase the risk of a small animal
21 being killed by a predator; however, many animals would simply choose to move away
22 from the lights (Beier 2006).

23
24 The use of high pressure sodium vapor lamps does not attract insects to the extent of
25 mercury vapor lamps. These lamps will still attract bats to forage, but the light-attracted
26 insects would be impacted to a lesser extent (Rydell 2006). Artificial lighting may
27 influence species movements or impact migration corridors; however, for species that
28 are susceptible to light attraction or disorientation, shielding would reduce the impact to
29 less than significant levels (Longcore and Rich 2006).

1 An illumination study was prepared by EPE detailing the contours for illumination levels
2 of the proposed lights. The results of this study can be found in Appendix B. The lights
3 would be spaced 125 to 150 feet apart and are back shielded so that the illumination is
4 directed forward and downward away from the levee. Furthermore, the design of the
5 lighting is such that it would only illuminate 175 feet in front of the lights. The Rio
6 Grande is approximately 230 feet from the lighting source, leaving approximately 50 feet
7 of the Rio Grande floodplain closest to the river illuminated only by natural light. The
8 lighting system is also designed in such a way that the lights will not illuminate the top of
9 the levee or behind it; therefore, there would be no impacts to wildlife north of the levee
10 or beyond 175 feet south of the lights.

11
12 Short-term construction activities may temporarily disturb wildlife on adjacent properties;
13 the levees and existing agricultural fields within and adjacent to the project area provide
14 suitable habitat for burrowing owls. If construction activities begin between March 1 and
15 September 1, a field survey would be conducted by a qualified biologist to determine if
16 active burrowing owl nests are present in the construction zone or within a buffer of 150
17 meters (approximately 500 feet). If no active nests are found during the survey,
18 construction activities may proceed. Also, mitigation measures identified in Section 5.0
19 would be implemented and the birds would be relocated to habitat outside of the project
20 area, thus, avoiding a significant impact to the owls.

21
22 Species that could be affected by construction noise would include passerine birds, such
23 as song sparrow (*Melospiza melodia*), black-throated sparrow (*Amphispiza bilineata*) or
24 western kingbird (*Tyrannus verticalis*); and small mammals such as kangaroo rats
25 (*Dipodomys* spp.), ground squirrels (*Spermophilus* spp.) or striped skunk (*Mephitis*
26 *mephitis*). Since the highest period of movement for most wildlife species occurs during
27 night time or low daylight hours, and construction activities would be conducted during
28 daylight hours to the maximum extent practicable, temporary noise impacts on wildlife
29 species are expected to be insignificant.

30

1 Noise generated during construction would impact wildlife resources in the Rio Bosque
2 Wetland Park; however, attenuation of noise levels prior to reaching the Rio Grande
3 riparian corridor would reduce impacts to wildlife in the riparian corridor to less than a
4 significant level, and the impacts would be temporary.

5
6 To comply with the MBTA, additional surveys for nesting migratory birds would occur
7 during the typical nesting season (February 15 through September 15), and active nests
8 would be marked and avoided to the extent practical.

9
10 The presence of a continuous canal north of the USIBWC levee, in addition to the Rio
11 Grande, constitutes an existing impediment to the migration of terrestrial wildlife north
12 from Mexico. Furthermore, the heavily developed and populated areas south of the Rio
13 Grande in Mexico would also discourage wildlife migration from north to south in the
14 project area. Therefore, the addition of a fence south of the canal would not
15 significantly increase impediments to north-south migration of terrestrial wildlife in the
16 area.

17 18 **3.7.2.3 Floating Foundation Fence Alternative**

19 Wildlife impacts resulting from the Floating Foundation Fence Alternative would be the
20 same as the Proposed Action Alternative.

21 22 **3.8 THREATENED AND ENDANGERED SPECIES**

23 24 **3.8.1 Affected Environment**

25 The Federally threatened and endangered species section for El Paso County is herein
26 incorporated by reference from the 2006 PEA (USBP 2006). There are five Federally
27 endangered (E) and threatened (T) species known to occur in the El Paso area, and two
28 of those species (Northern aplomado falcon and Southwestern willow flycatcher) also
29 occur in Hudspeth County. A list of these species is presented in Table 3-1.

1 **Table 3-1. Federally Listed Species for El Paso County, Texas.**

Common Name	Scientific Name	Federal Status
Plants		
Sneed's pincushion cactus	<i>Coryphantha sneedii</i> var. <i>sneedii</i>	E
Birds		
Northern aplomado falcon**	<i>Falco femoralis septentrionalis</i>	E
Interior least tern	<i>Sterna antillarum</i>	E
Southwestern willow flycatcher**	<i>Empidonax traillii extimus</i>	E
Mexican spotted owl**	<i>Strix occidentalis lucida</i>	T

2 ** Also listed for Hudspeth County, Texas
3

4 The Sneed's pincushion cactus grows on limestone ledges at elevations between 3,900
5 to 7,000 feet above mean sea level. The northern aplomado falcon prefers open
6 grasslands terrain with relatively low ground cover and scattered shrubs and yucca for
7 nesting. The interior least tern, although preferring nearly bare ground for nesting, has
8 had its habitat severely disturbed by channelization projects and constant traffic
9 associated with urban areas. Suitable habitat may occur for the interior least tern and
10 the southwestern willow flycatcher intermittently along the Rio Grande adjacent to the
11 project corridor. Finally, no preferred habitat exists within the project limits for the
12 Mexican spotted owl, which prefers remote, shaded canyons of coniferous mountain
13 woodlands (pine and fir).
14

15 The state threatened and endangered species section for El Paso County is herein
16 incorporated by reference from the 2006 PEA (USBP 2006), and several of the listed
17 species also occur in Hudspeth County. Many of the species listed as endangered or
18 threatened by TPWD for El Paso and Hudspeth counties would not occur in the study
19 area. There are two endangered state listed species that possibly occur in the project
20 area; the interior least tern and the southwestern willow flycatcher, and their habitat and
21 occurrence were described above. In addition, the Texas horned lizard (*Phrynosoma*
22 *cornutum*), listed as threatened, may occur in the project corridor. The Big Bend slider
23 (*Trachemys gaigeae*) and the western burrowing owl may occur in the project corridor,
24 and are listed as rare, but with no regulatory listing status (TPWD 2006).
25

1 **3.8.2 Environmental Consequences**

2 **3.8.2.1 No Action Alternative**

3 The No Action Alternative would have no direct adverse impacts to threatened and
4 endangered species, since no additional TI would be constructed.

5

6 **3.8.2.2 Proposed Action Alternative**

7 No Federally threatened or endangered species were observed within the project area
8 during the biological surveys performed in 2003 and 2007. Also, no designated critical
9 habitat for any protected species occurs within the project corridor. Since the artificial
10 lighting would not reach the Rio Grande riparian corridor, there would be no effect to the
11 southwest willow flycatcher or the interior least tern.

12

13 Noise generated during construction of the lights would temporarily increase in the area
14 north of the Rio Grande riparian corridor; however, the amount of noise reaching the
15 river would be between 65 and 75 dBA (A-weighted decibel, see Section 3.11) at a
16 maximum on an intermittent basis, and would not constitute a significant impact on bird
17 species that might be present in the riparian corridor. Construction of the fence would
18 occur on the north side of the USIBWC levee, and the levee would help to shield the Rio
19 Grande riparian corridor from excess noise during construction.

20

21 Open holes during construction would be checked each day for Texas horned lizards,
22 and any lizards or other wildlife species found would be removed. Mitigation measures
23 described in Section 3.7.2 above would be implemented to avoid impacts to burrowing
24 owls.

25

26 **3.8.2.3 Floating Foundation Fence Alternative**

27 Impacts to threatened and endangered species resulting from the Floating Foundation
28 Fence Alternative would be the same as the Proposed Action Alternative.

29

30

1 **3.9 CULTURAL, HISTORICAL, AND ARCHAEOLOGICAL RESOURCES**

2
3 **3.9.1 Affected Environment**

4 An overview of the cultural resources history of the project area was presented in the
5 2006 PEA (USBP 2006), and that discussion is incorporated herein by reference.
6 Preliminary investigations of the files at the Texas Archaeological Research Laboratory
7 indicated that portions of the project cross the features of the EPCWID1 Historic District
8 and sites 41EP4678 and 41EP4679, the Riverside Intercepting Drain and Riverside
9 Canal, respectively. The EPCWID1 Historic District has been listed on the National
10 Register of Historic Places (NRHP) under criteria A and C. Both 41EP4678 and
11 41EP4679 are recommended potentially eligible under criterion A.

12
13 Given that the area of the proposed infrastructure has been previously and deeply
14 disturbed by the construction of the USIBWC levee and the EPCWID1 and HCCRD1
15 irrigation canals, there is a low probability for intact prehistoric cultural deposits in the
16 project area.

17
18 The Ysleta del Sur Pueblo requires an unlighted landscape near the Rio Grande for
19 tribal ceremonies. A MOA between USBP and the Tribe signed in 2005 requires
20 switches on banks of the lights near their ceremonial areas so that the lights can be
21 turned off when necessary. A new MOA would need to be negotiated with the Ysleta de
22 Sur Pueblo to address the added length of the project corridor and the addition of
23 primary pedestrian fence to the Proposed Action.

24
25 **3.9.2 Environmental Consequences**

26 **3.9.2.1 No Action Alternative**

27 Under the No Action Alternative no ground disturbance would take place within the
28 project area; therefore, no impacts to cultural resources would occur.

1 **3.9.2.2 Proposed Action Alternative**

2 Implementation of the Proposed Action Alternative would result in ground disturbance in
3 the form of excavation of the toe of the levee to accept placement of the fence
4 foundations, use of temporary staging areas during construction, and excavation within
5 the project area to install light poles; however, all of the ground surface within the
6 project area has already been disturbed by construction of the USIBWC levee, the
7 EPCWID1 and HCCRD1 canals and numerous dirt roads. The likelihood for discovery
8 of any intact prehistoric cultural material is very remote.

9
10 Archaeological monitoring during the installation of all light poles and fence foundations
11 within the project corridor would be conducted to ensure no deeply buried
12 archaeological deposits would be impacted during the installation of the lights and
13 fence. Should any deeply buried resources be discovered, work would cease in the
14 area of the discovery until an archaeologist can determine the significance of the
15 resource. The Texas State Historic Preservation Officer (SHPO) would be contacted,
16 and a mitigation plan prepared, if necessary.

17
18 It is not anticipated that the proposed infrastructure installation would impact the
19 integrity of the EPCWID1 Historic District. Replacement of the bridges over the
20 irrigation systems would occur in areas where pre-existing bridges have deteriorated or
21 been removed, and that are noted as ancillary structures in the EPCWID1 Historic
22 District form. Other bridge placement locations are at the ends of existing roads where
23 canal crossovers would be logically placed. SHPO would be allowed to review the
24 proposed bridge designs to be sure that they do not diminish the integrity of the Historic
25 District.

26
27 Given that the area of the proposed infrastructure has been previously disturbed in the
28 past by the construction of the USIBWC levee and EPCWID1 and HCCRD1 canals,
29 there is a low probability for intact buried cultural deposits. Furthermore, an
30 archaeological monitor will be present during the installation of all lights and fence
31 foundations. Therefore, no adverse impacts to historic properties are anticipated from

1 implementation of the Proposed Action Alternative. Additionally, the Section 106
2 process will be completed, and concurrence from SHPO will be received prior to
3 construction (see correspondence in Appendix D).

4
5 In order to prevent interference with Ysleta del Sur Pueblo ceremonial activities along
6 the river, sections of the lights would be equipped with switches to allow them to be
7 turned off when necessary, as required by the MOA between CBP and the Tribe.

9 **3.9.2.3 Floating Foundation Fence Alternative**

10 The placement of the fence on the top of the levee would be done so that it would not
11 impact the structural integrity of the irrigation systems, and would provide protection for
12 the irrigation systems from illegal vehicle and pedestrian traffic through the area.
13 Impacts to cultural resources as a result of implementation of the Floating Foundation
14 Fence Alternative would be the same as described above for the Proposed Action
15 Alternative. All activities would occur in previously disturbed areas, and the likelihood
16 for discovery of any intact prehistoric cultural material is very remote.

18 **3.10 AIR QUALITY**

20 **3.10.1 Affected Environment**

21 Federal and state standards for air quality and the status of air quality within the project
22 corridor were discussed in the 2006 PEA (USBP 2006), and those discussions and
23 definitions are incorporated herein by reference.

24
25 El Paso County is classified as a non-attainment area for the particulate matter (PM-10)
26 and carbon monoxide (CO) air quality standards. PM-10 are small particles (less than
27 10 micrometers) in the air that originate from internal combustion engines, unpaved
28 roads, fires, and dry exposed soils that are disturbed during construction activities.
29 Hudspeth County is classified as an attainment area for all air quality standards.

1 Exposure to PM-10 can lead to detrimental health effects such as:

- 2
- 3 • Coughing, wheezing, shortness of breath
- 4 • Aggravated asthma
- 5 • Lung damage (including decreased lung function and lifelong respiratory
- 6 disease)
- 7 • Premature death in individuals with existing heart or lung diseases
- 8

9 CO is a colorless, odorless and poisonous gas produced by incomplete burning of
10 carbon in fuels. When CO enters the bloodstream, it reduces the delivery of oxygen to
11 the body's organs and tissues. Health threats are most serious for those who suffer
12 from cardiovascular disease, particularly those with angina or peripheral vascular
13 disease. Exposure to elevated CO levels can cause impairment of visual perception,
14 manual dexterity, learning ability and performance of complex tasks (EPA 2006).

15

16 **3.10.2 Environmental Consequences**

17 **3.10.2.1 No Action Alternative**

18 No direct impacts to air quality would be expected under the No Action Alternative,
19 since there would be no new construction activities in the project area. There would
20 continue to be fugitive dust from vehicles on the roads along the levee.

21

22 **3.10.2.2 Proposed Action Alternative**

23 Calculations were performed to estimate the total air emissions from the new
24 construction activities. Calculations were made for standard construction equipment
25 such as bulldozers, excavators, pole trucks, front end loaders, back hoes, cranes, and
26 dump trucks using emission factors from AP-42 Chapter 3 Vol. 1 (EPA 1995).

27

28 Fugitive dust calculations were made for disturbing the soils while grading, driving, and
29 building the fence, installing lights, rebuilding bridges and resurfacing the patrol road.
30 Large amounts of dust can arise from the mechanical disturbance of surface soils. Dust
31 generated from these open sources is termed "fugitive" because it is not discharged to
32 the atmosphere in a confined flow stream. Fugitive dust emissions were calculated

1 using emission factors from Mid-Atlantic Regional Air Management Association
2 (MARAMA 2006).

3
4 The total air quality emissions were calculated to determine the applicability of the
5 General Conformity Rule. The General Conformity rule applies to areas that have been
6 designated as a non-attainment zone for an air pollutant, such as the El Paso area.
7 Regulations set forth in 40 CFR 51 Subpart W-Determining Conformity of the General
8 Federal Action to State or Federal Implementation Plans determine if additional permits
9 are needed. According to 40 CFR 51.853(b), Federal actions require a Conformity
10 Determination for each pollutant where the total of direct and indirect emissions in a
11 non-attainment or maintenance area caused by a Federal action would equal or exceed
12 any of the rates (*de minimis* thresholds) in paragraphs 40 CFR 51.853(b)(1) or (2).
13 Assumptions were made regarding the type of equipment, duration of the total number
14 of days each piece of equipment would be used, and the number of hours per day each
15 type of equipment would be used. The assumptions, emission factors, and resulting
16 calculations are presented in Appendix A. A summary of the total emissions are
17 presented in Table 3-2. As can be seen from this table, the proposed construction
18 activities do not exceed *de minimis* thresholds and, thus, do not require a Conformity
19 Determination.

20
21 **Table 3-2. Total Air Emissions (tons/year) from Construction Activities**
22 **vs. the *de minimis* Levels**

Pollutant	Total	<i>de minimis</i> Thresholds
Carbon monoxide (CO)	44.03	100
Particulate matter (PM-10)	20.36	100

23 Source: 40 CFR 51.853 and GSRC

24
25 Impacts from combustible air emissions from USBP traffic and commuting to work are
26 expected to be the same before and after the proposed the installation of lights and
27 resurfacing of the road. Construction workers for the Proposed Action would
28 temporarily increase the combustible emissions in the air shed during their commute to

1 and from work. Their emissions were calculated in the air emission analysis (Appendix
2 A), and those emissions are included in the totals in Table 3-2.

3
4 During the construction of the proposed project, proper and routine maintenance of all
5 vehicles and other construction equipment would be implemented to ensure that
6 emissions are within the design standards of all construction equipment. Dust
7 suppression methods would be implemented to minimize fugitive dust. While there
8 would continue to be dust emissions from USBP and other traffic on the dirt road on the
9 top of the levee, air emissions from the Proposed Action Alternative would be temporary
10 and would not significantly impair air quality in the region.

11 12 **3.10.2.3 Floating Foundation Fence Alternative**

13 All emissions factors and calculations described above for the Proposed Action
14 Alternative would also apply to the Floating Foundation Fence Alternative. Impacts to
15 air quality would also be temporary and would not significantly impair air quality in the
16 region, since the emissions would not be expected to exceed *de minimis* levels. Since
17 the current dirt road on the top of the USIBWC levee would be replaced by a hard
18 surface road integrated with the new fence foundation, long-term dust emissions due to
19 vehicle traffic on the top of the levee would be expected to be reduced substantially.

20 21 **3.11 NOISE**

22 23 **3.11.1 Affected Environment**

24 Noise is generally described as unwanted sound, which can be based either on objective
25 effects (i.e., hearing loss, damage to structures, etc.) or subjective judgments (e.g.,
26 community annoyance). Sound is usually represented on a logarithmic scale with a unit
27 called the decibel (dB). Sound on the decibel scale is referred to as sound level. The
28 threshold of human hearing is approximately 0 dB, and the threshold of discomfort or pain
29 is around 120 dB. A discussion of noise measurement and classification was presented
30 in the 2006 PEA (USBP 2006), and that discussion is incorporated herein by reference.

1 Noise levels occurring at night generally produce a greater annoyance than do the same
2 levels occurring during the day. It is generally agreed that people perceive intrusive noise
3 at night as being 10 dBA (A-weighted decibel is a measure of noise at a given, maximum
4 level or constant state level) louder than the same level of intrusive noise during the day,
5 at least in terms of its potential for causing community annoyance. This perception is
6 largely because background environmental sound levels at night in most areas are also
7 about 10 dBA lower than those during the day.

8
9 Acceptable noise levels have been established by the U.S. Department of Housing and
10 Urban Development (HUD) for construction activities in residential areas:

- 11
12 • **Acceptable** (not exceeding 65 dB) – The noise exposure may be of some
13 concern but common building construction will make the indoor
14 environment acceptable and the outdoor environment will be reasonably
15 pleasant for recreation and play.
- 16 • **Normally Unacceptable** (above 65 but not greater than 75 dB) – The noise
17 exposure is significantly more severe; barriers may be necessary between
18 the site and prominent noise sources to make the outdoor environment
19 acceptable, and; special building constructions may be necessary to ensure
20 that people indoors are sufficiently protected from outdoor noise.
- 21 • **Unacceptable** (greater than 75 dB) – The noise exposure at the site is so
22 severe that the construction costs to make the indoor noise environment
23 acceptable may be prohibitive and the outdoor environment would still be
24 unacceptable.
25

26 As a general rule of thumb, noise generated by a stationary noise source, or “point
27 source,” will decrease by approximately 6dB over hard surfaces and 9dB over soft
28 surfaces for each doubling of the distance. For example, if a noise source produces a
29 noise level of 85 dBA at a reference distance of 50 feet over a hard surface, then the
30 noise level would be 79 dBA at a distance of 100 feet from the noise source, 73 dBA at a
31 distance of 200 feet, and so on. To estimate the attenuation of the noise over a given
32 distance the following relationship is utilized (Department of Environment and
33 Conservation [DEC] New South Wales 2000):
34
35

$$\text{Equation 1: } dBA_2 = dBA_1 - 20 \log^{(d_2/d_1)}$$

Where:

dBA_2 = dBA at distance 2 from source (predicted)

dBA_1 = dBA at distance 1 from source (measured)

d_2 = Distance to location 2 from the source

d_1 = Distance to location 1 from the source

Within the project area there are neighborhoods and parks located adjacent to the project corridor in the northern portion of the project corridor that would constitute receptors for noise generated during construction of the Proposed Action Alternative. The remainder of the project corridor is located adjacent to rural farm land with few noise sensitive receptors nearby.

3.11.2 Environmental Consequences

3.11.2.1 No Action Alternative

Under the No Action Alternative, the noise receptors near the project corridors would not experience additional noise events; however, they would continue to experience ambient noise disturbances in excess of 65 dBA from trains, trucks and cars traveling in the area.

3.11.2.2 Proposed Action Alternative

The project corridor stretches approximately 56.7 miles along the border. About 75 percent of the area is rural or industrial with no sensitive noise receptors. In San Elizario, the project corridor passes within 230 feet of three residential neighborhoods for a total of 2 miles (Figure 3-1d and 3-1e) where there is currently no fence or lights installed. The projection of the noise emissions from construction equipment to the three neighborhoods in San Elizario was determined using equations described previously in Section 3.11.1. Table 3-3 describes noise emission levels for construction equipment which range from 70 dBA to 85 dBA (FHWA 2007).

1 The Rio Grande riparian corridor is located approximately 230 feet from the project
 2 construction corridor, and noise levels reaching the riparian corridor would be temporary
 3 and would not exceed 73 dBA. For a discussion of noise impacts to wildlife, see Section
 4 3.7.

6 **Table 3-3. A-Weighted (dBA) Sound Levels of Construction Equipment**

dBA	Actual Measured Lmax at a distance of 50 feet
78	Backhoe
81	Crane
76	Dump Truck
81	Excavator
79	Front end loader
73	Generator
79	Concrete mixer truck
85	Auger drill rig
82	Bull dozer

7 Source: Dept. of Transportation Federal Highway Administration 2007

8
 9 Assuming the worst case scenario of 85 dBA, the noise model projected that noise levels
 10 of 85 dBA from construction equipment would have to travel 500 feet before it would
 11 attenuate to acceptable levels of 65 dBA. The distance of the nearest residential
 12 properties to the project corridor is approximately 230 feet; thus a portion of these
 13 residential properties would experience Normally Unacceptable (less than 75 dBA and
 14 greater than 65 dBA) noise levels of 72 dBA during construction activities. Figures 3-1d
 15 and 3-1e show modeled noise projections emitting from construction equipment and the
 16 distance that noise will travel before it attenuates to 75 dBA and 65 dBA (Acceptable).

17
 18 The construction activities are expected to create noise impacts above Acceptable
 19 levels; however, the noise emissions are expected to be minor (<75 dBA) and short-
 20 term in duration. Construction activities near the San Elizario neighborhoods are
 21 estimated to last 2 to 3 months. To minimize this impact, it is recommended that
 22 construction activities in the San Elizario neighborhoods be limited to daylight hours
 23 during the work week when most of the residents are at school or at work. More
 24 specifically, construction activities should be limited to hours between 7:00 am and 7:00

1 pm on Monday through Friday where neighborhoods are located within 500 feet of the
2 project corridor. Likewise, visitors to the Rio Bosque Wetland Park would experience
3 intermittent and temporary minor noise emissions during construction.

4
5 At the western end of the project, primary pedestrian fence would be installed replacing
6 existing chain link fence. Lights are already installed in this portion of the project
7 corridor. This portion of the project corridor also parallels the Border Highway, a four-
8 lane divided highway directly adjacent to the irrigation canal, which separates the fence
9 construction area from residential neighborhoods. While the houses in these
10 neighborhoods are located approximately 270 feet from the proposed fence
11 construction zone (see Figures 3-1a, 3-1b, and 3-1c), construction noise from fence
12 construction would not exceed the current ambient highway noise generated by traffic
13 on the Border Highway. Therefore, there would be no significant impacts on these
14 receptors from the Proposed Action Alternative.

15
16 **3.11.2.3 Floating Foundation Fence Alternative**

17 Discussions of noise impacts and mitigation measures for the Proposed Action
18 Alternative would also apply to the Floating Foundation Fence Alternative.

19
20 **3.12 UTILITIES AND INFRASTRUCTURE**

21
22 **3.12.1 Affected Environment**

23 Currently, electrical power for the project corridor is provided by EPE through its
24 regional power grid. In the rural portions of the project corridor, electric power supply is
25 available adjacent to the irrigation canals to support scattered rural farm homes and
26 intermittent irrigation pumping equipment along the project corridor. EPE provides
27 power to an approximately 10,000-square-mile area of Texas and New Mexico, and
28 participates in balance area agreements with surrounding power companies, including
29 those in Mexico, to provide additional power during peak user times. The 2006 peak

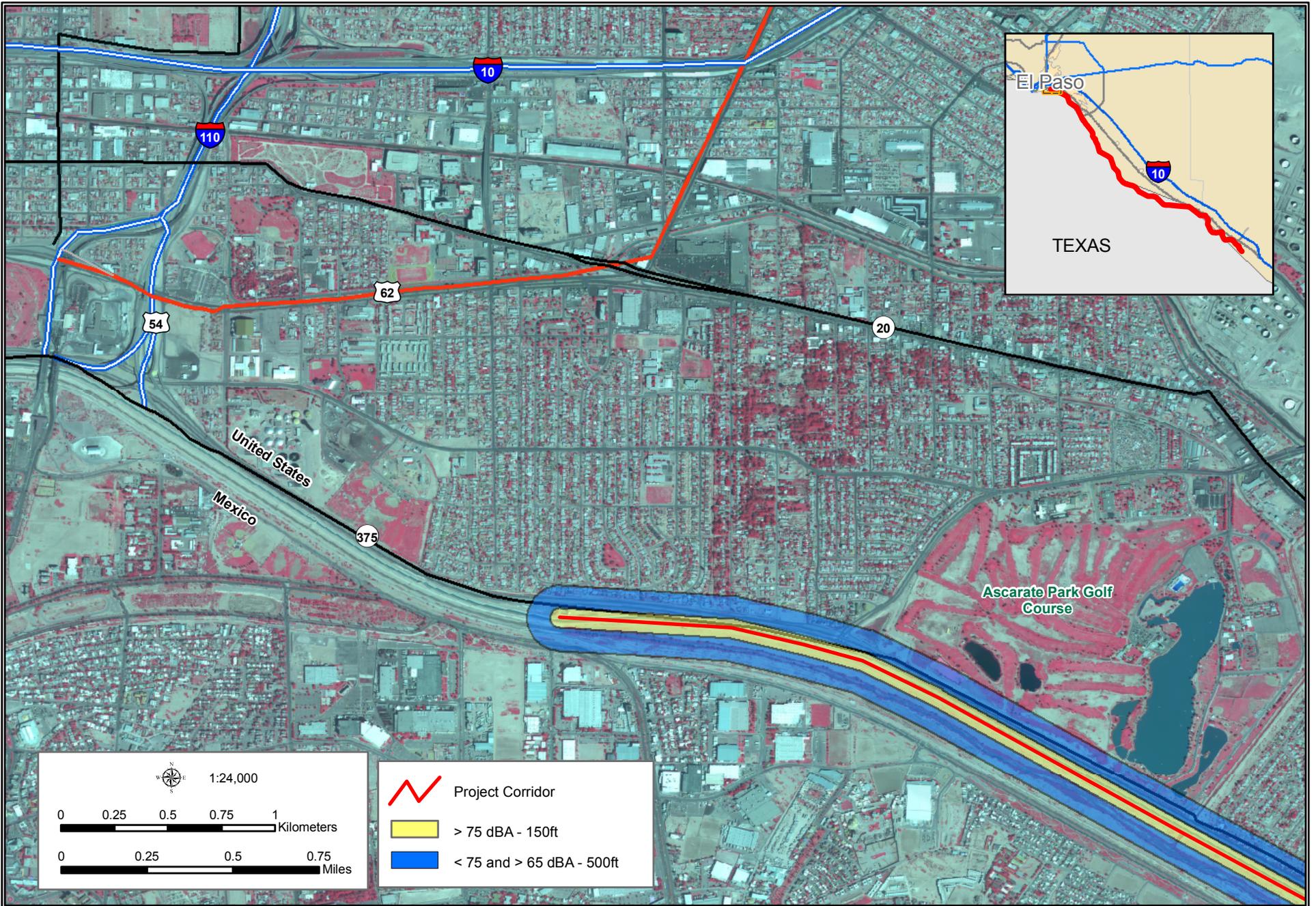


Figure 3-1a: Noise Attenuation of Construction Equipment

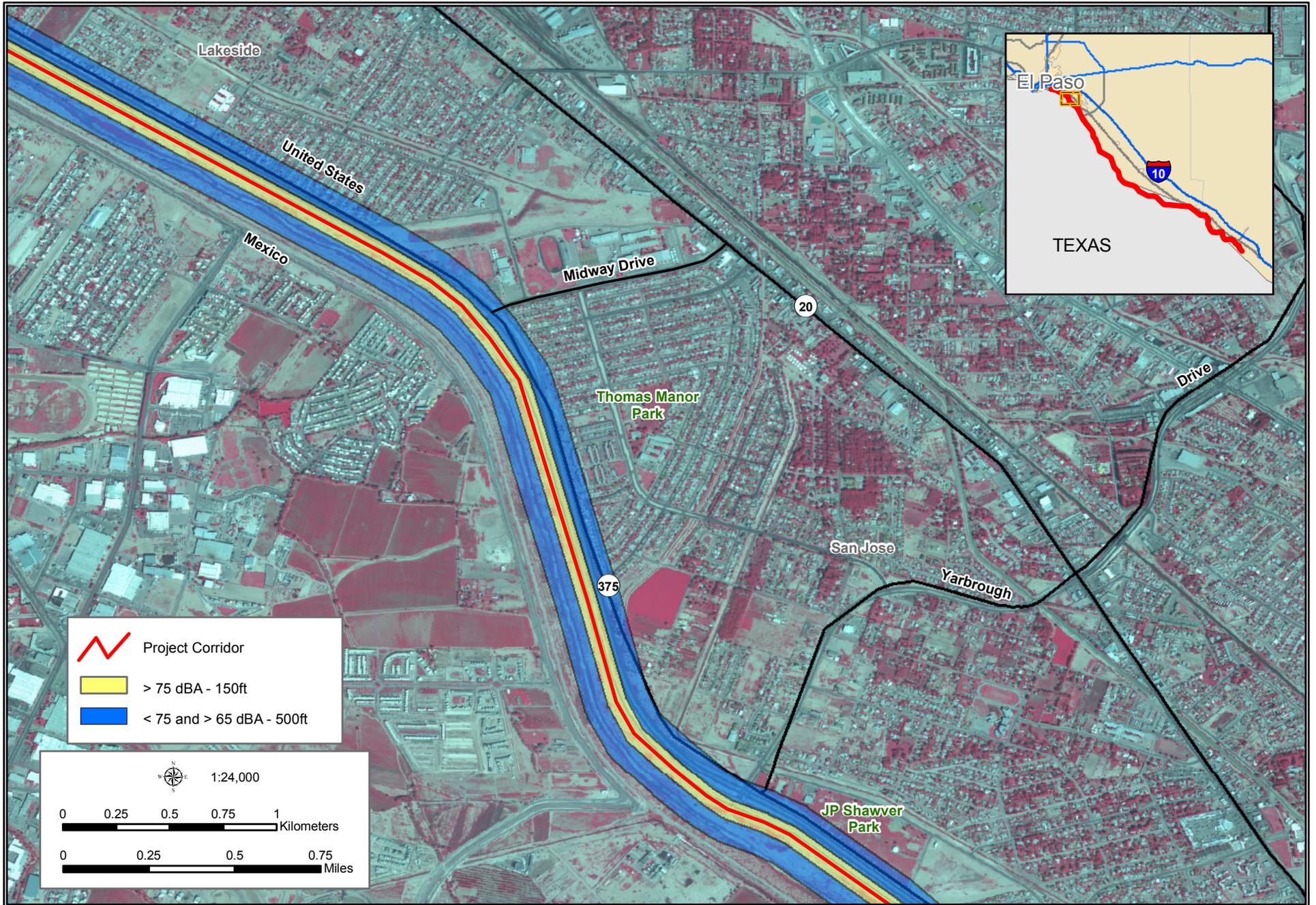


Figure 3-1b: Noise Attenuation of Construction Equipment

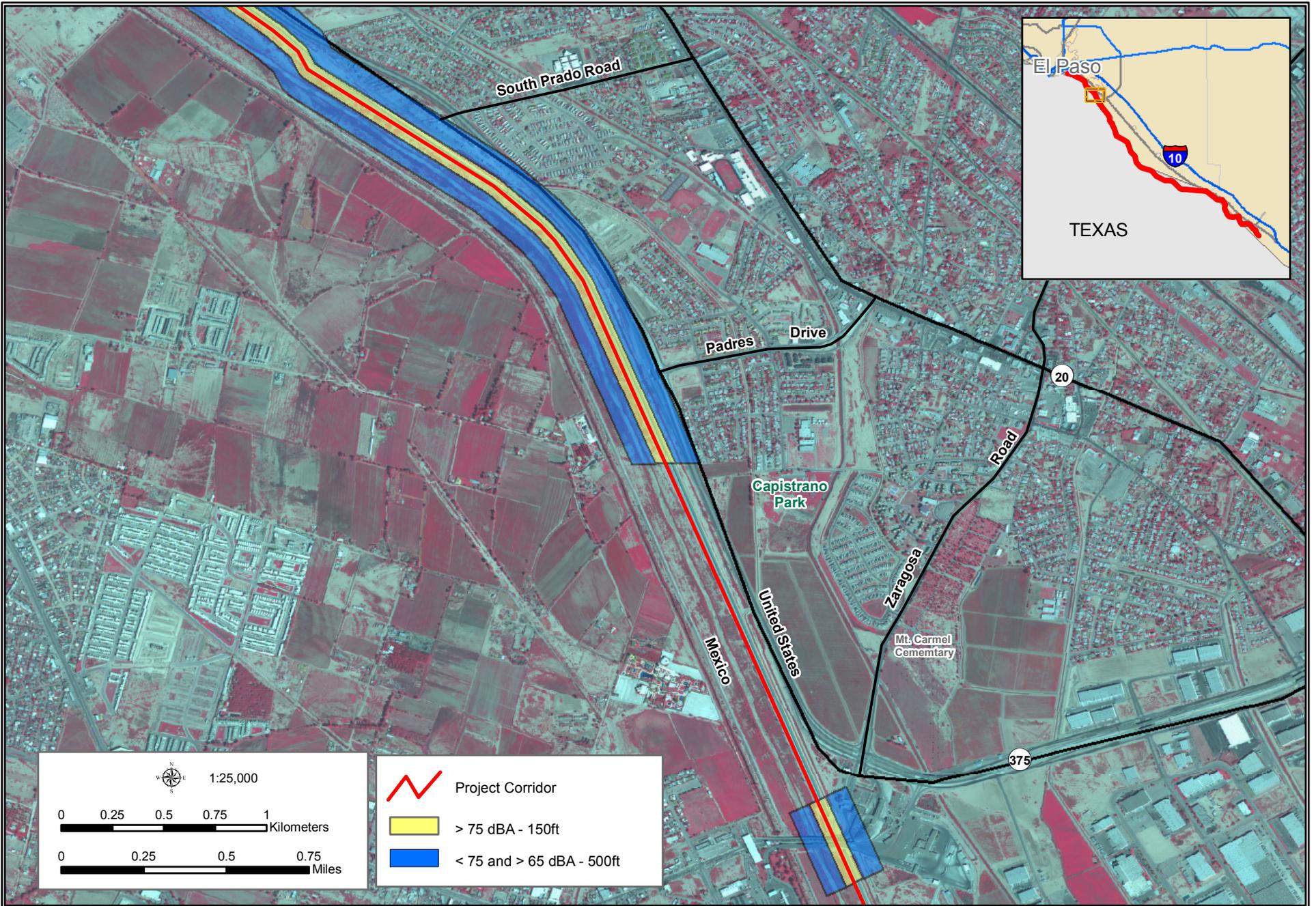


Figure 3-1c: Noise Attenuation of Construction Equipment

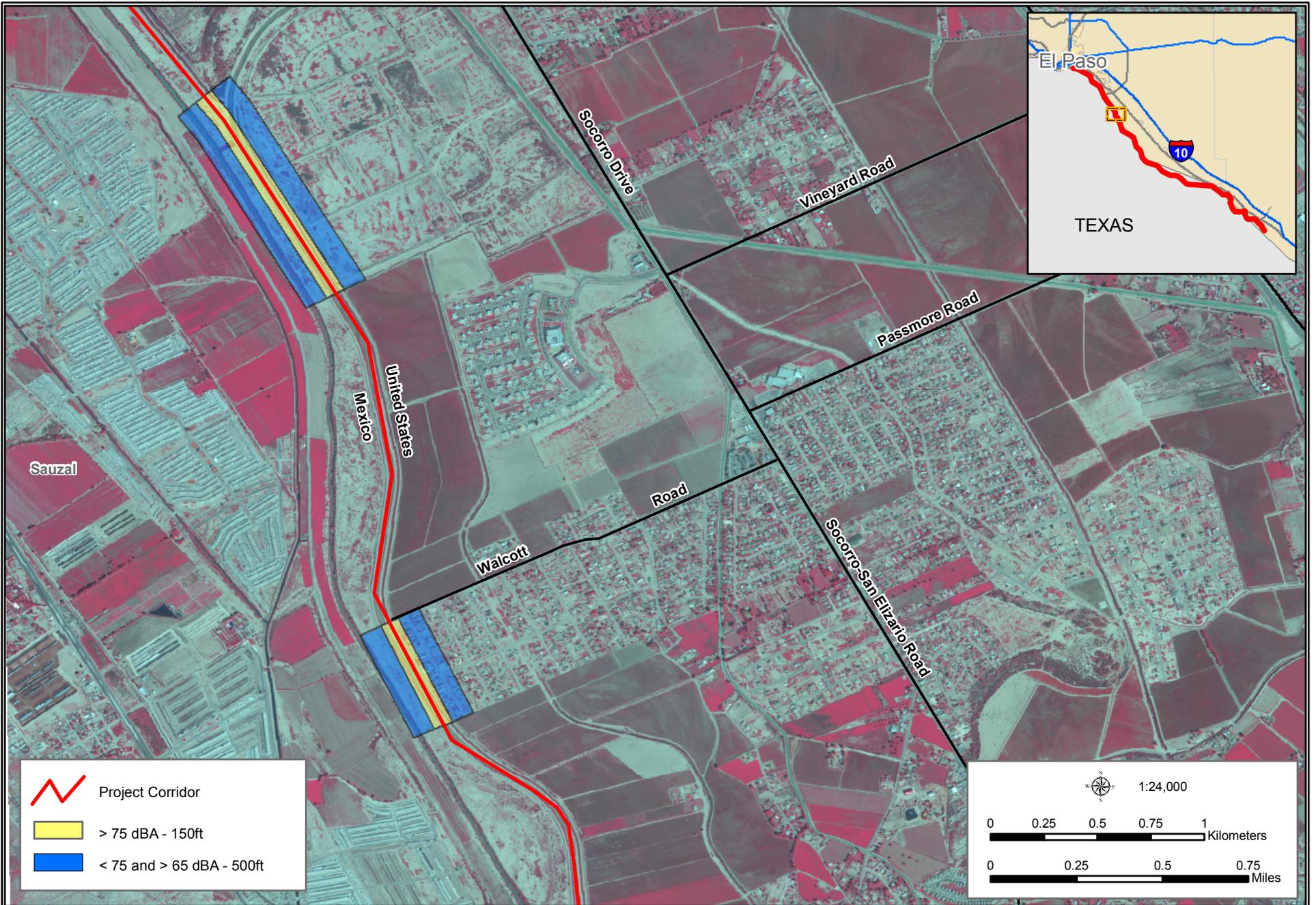


Figure 3-1d: Noise Attenuation of Construction Equipment

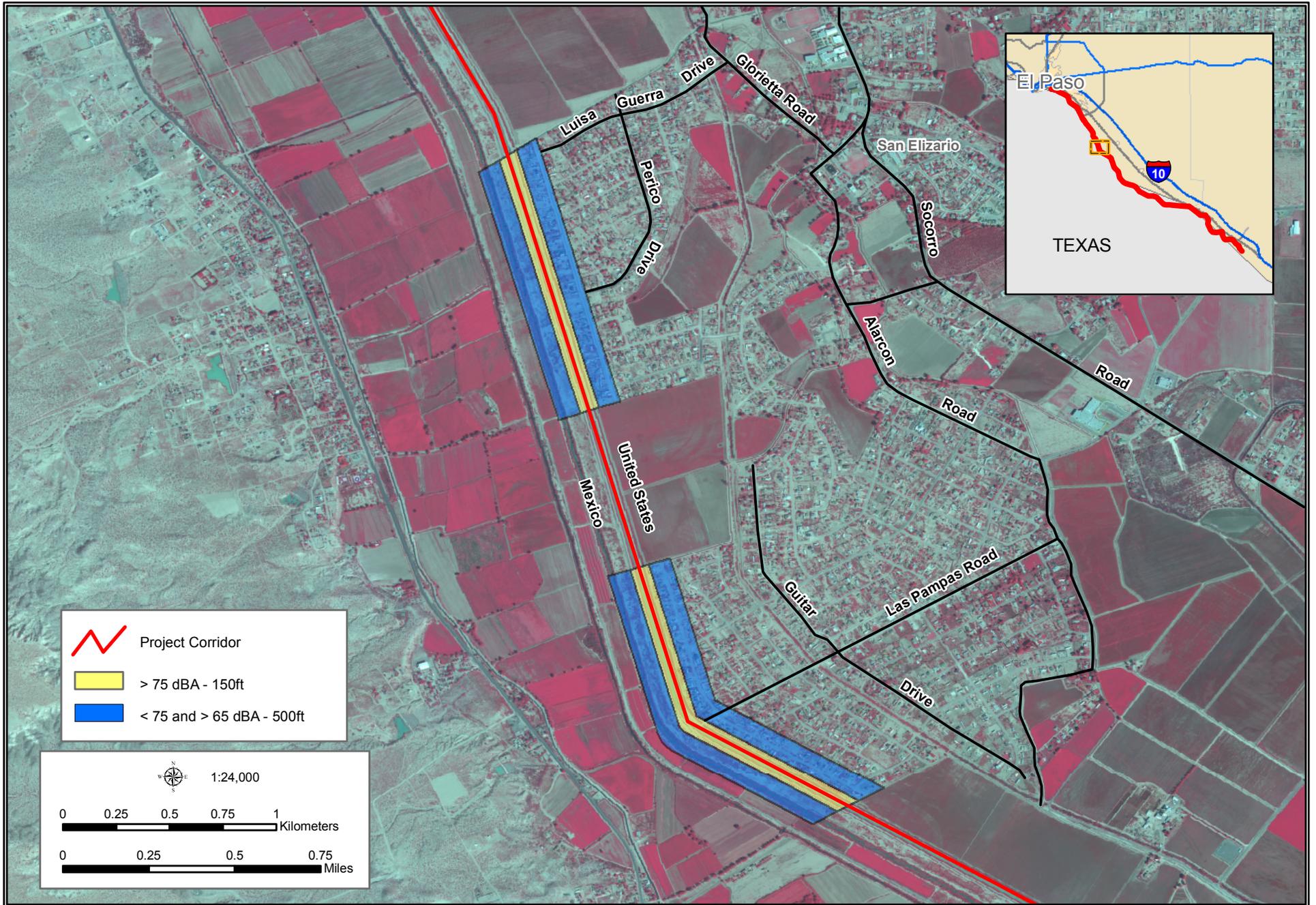


Figure 3-1e: Noise Attenuation of Construction Equipment

1 daily demand for EPE was 1,376 megawatts (North American Electric Reliability Council
2 2006). EPE maintains a 16 percent margin of available power above firm peak demand
3 (El Paso Regional Economic Development Corporation [REDCO] 2006).

4 5 **3.12.2 Environmental Consequences**

6 **3.12.2.1 No Action Alternative**

7 There would be no impacts to electric power utilities under the No Action Alternative,
8 since there would be no additional installation of lights in the area.

9 10 **3.12.2.2 Proposed Action Alternative**

11 Installation of permanent lights along 21 miles of the project corridor by EPE would
12 require additional installation of power grid feeds from the local network, and installation
13 of power line support poles and transformers. Installation of this additional power
14 infrastructure would result in minor impacts on soils and minor noise impacts where
15 infrastructure is installed adjacent to residential neighborhoods. All of the soil
16 disturbance would occur in existing disturbed ROWs, and the noise impacts would be
17 no different than those resulting from normal power infrastructure maintenance
18 operations; thus, the impacts would be considered insignificant.

19
20 The power required for operation of the permanent lights would be roughly equivalent to
21 the amount required to power a small high school (approximately 7.7 million kilowatt
22 hours annually). The substations that would be serving the additional lighting have
23 ample capacity to serve the additional load (EPE 2008). This would not be considered
24 a significant amount when compared to the overall electric power available in the local
25 power grid and the 16 percent power reserve maintained by EPE. The lights would be
26 installed and maintained by EPE as part of their overall public light maintenance
27 program.

28 29 **3.12.2.3 Floating Foundation Fence Alternative**

30 Impacts of the Floating Foundation Fence Alternative on utilities and infrastructure
31 would be the same as those of the Proposed Action Alternative.

1 **3.13 AESTHETIC AND VISUAL RESOURCES**

3 **3.13.1 Affected Environment**

4 The project area contains a man-made canal and levee system that has altered the
5 natural topography. The cities of El Paso and Juarez are located north and southwest
6 of the project area in the U.S. and Mexico, respectively. Properties adjacent to the
7 levee system are primarily developed, consisting of industrial, agricultural, commercial
8 and residential development. USBP shelters located approximately every mile and the
9 USBP lights are the only structures between the levee and the Rio Grande. The levee
10 is cleared and mowed regularly to maintain flood control features, and it is topped by a
11 dirt and gravel road. The only natural landscapes in the area are the Rio Bosque
12 Wetland Park, which is a wetland mitigation area that is being restored with native flora,
13 and the Alamo Arroyo and Diablo Arroyo drains, located approximately 4 miles
14 northwest of the Fort Hancock POE and at the east end of the project corridor,
15 respectively.

16
17 The view of the Rio Grande and the floodplain is obscured by the presence of the
18 USIBWC levee, and access to the levee is restricted, so that views of the Rio Grande
19 are not generally available to the general public.

21 **3.13.2 Environmental Consequences**

22 **3.13.2.1 No Action Alternative**

23 The No Action Alternative would result in no additional infrastructure construction along
24 the project corridor, so there would be no additional impacts on the aesthetic qualities of
25 the area.

27 **3.13.2.2 Proposed Action Alternative**

28 The USIBWC levee already interrupts the view of the Rio Grande from the U.S. side of
29 the border. The addition of a fence along the toe levee would not detract appreciably
30 from this current view. Access for the Ysleta de Sur Pueblo to the unrestricted Rio

1 Grande floodplain south of the levee would be provided through gates at specified
2 locations.

3
4 The installation of permanent lights along the flood side of the levee would have an
5 impact on the nighttime appearance of the area due to the illumination of the south side
6 of the levee and the area between the levee and the river. The lights would be directed
7 to illuminate only the ground area beneath and to the south of the light standards, and
8 would be shielded to prevent light trespass north of the levee, into areas currently
9 inhabited by U.S. citizens. Roads and developed areas already border the north side of
10 the EPCWID1 and HCCRD1 canals, and, where development is absent, rural farm land
11 is the predominant land use. Therefore, the addition of lights in this area would have
12 minimal effect on the aesthetics of the area on the U.S. side of the canal. Design
13 criteria and illumination diagrams for the proposed lights can be found in Appendix B.

14
15 The proposed bridges would be constructed in the same footprint as previous bridges
16 across the EPCWID1 and HCCRD1 canals and at logical canal crossing points at the
17 ends of established roads and, therefore, would not detract from the appearance of the
18 area.

19
20 A proposed pedestrian walkway along the Rio Grande through El Paso and connecting
21 to the Rio Bosque Park could not be constructed in the floodplain if the Proposed Action
22 Alternative is implemented, since the fence would prevent any pedestrian connection
23 between the river and the area north of the USIBWC levee. Since the existing portions
24 of this trail system are located north of the border fence in El Paso, this restriction
25 should not result in a significant impact. USBP will coordinate with the city and the
26 county to ensure that future expansion of the existing trail and the proposed fence do
27 not conflict with each other. No visitors are allowed in the Rio Bosque Wetland Park at
28 night, so there would be no significant impacts on appearance from lights along the
29 levee.

30

1 **3.13.2.3 Floating Foundation Fence Alternative**

2 Impacts of the Floating Foundation Fence Alternative on aesthetic and visual resources
3 would be similar to those of the Proposed Action Alternative. Because the fence would
4 be at a higher elevation on the top of the levee, visual impacts would be slightly greater
5 than those of the Proposed Action Alternative, but still less than significant.
6

7 **3.14 HAZARDOUS MATERIALS**

8 9 **3.14.1 Affected Environment**

10 Solid and hazardous waste occurrence in the general area of the project corridor was
11 discussed in the 2006 PEA (USBP 2006), and that discussion is incorporated herein by
12 reference. As determined by a reconnaissance survey of the project corridor, there are
13 no industrial or other commercial facilities near the project corridor that would contain
14 hazardous materials or hazardous waste. Construction equipment used to implement the
15 Proposed Action Alternative would contain fuel and petroleum fluids and lubricants that
16 would be considered hazardous if released into the environment.
17

18 **3.14.2 Environmental Consequences**

19 **3.14.2.1 No Action Alternative**

20 There would be no impacts under the No Action Alternative, since no construction
21 activity would take place in the project area, and no solid waste or hazardous waste
22 would be generated.
23

24 **3.14.2.2 Proposed Action Alternative**

25 Implementation of the Proposed Action Alternative would involve the use of various
26 types of heavy construction equipment. BMPs would be implemented to minimize the
27 possibility that lubricating fluids or fuel would be discharged into the environment from
28 this equipment. The BMPs are described in detail in Section 5.0 of this EA. In addition,
29 a Spill Prevention, Control and Countermeasures Plan (SPCCP) would be developed
30 and implemented prior to the start of construction on the project.
31

3.14.2.3 Floating Foundation Fence Alternative

Impacts due to implementation of the Floating Foundation Fence Alternative and proposed BMPs would be the same as those described above for the Proposed Action Alternative.

3.15 SOCIOECONOMICS

3.15.1 Affected Environment

The socioeconomic environment for the project region is described in detail in the USBP Programmatic EA, and is incorporated herein by reference (USBP 2006). In summary, the USBP Programmatic EA examined population structure, housing, environmental justice and protection of children. Only those portions of the socioeconomic environment that have changed since the USBP Programmatic EA are discussed in this EA. Table 3-4 illustrates the difference in socioeconomic data for those indices which have changed between the current EA and the USBP Programmatic EA in 2006. The region of influence (ROI) examined is El Paso County and Hudspeth County, Texas.

Table 3-4. Socioeconomic Data for El Paso and Hudspeth Counties

Index	El Paso County		Hudspeth County	
	USBP 2006 Data	Current Data	USBP 2006 Data	Current Data
Total population	702,609 (2000)	736,310 (2006)	3,257 (2000)	3,344 (2006)
Total number of jobs	240,723 (2000)	349,204 (2005)	1,228 (2000)	1,551 (2005)
Percent annual unemployment rate	5.2 (2000)	6.7 (2006)	4.3 (2000)	7.4 (2006)
Total personal income	\$14.7B (2003)	\$16.8B (2005)	\$53.7M (2003)	\$48.9M (2005)
Per capita personal income, in thousands	\$20,875 (2003)	\$23,256 (2005)	\$16,482 (2003)	\$14,804 (2005)
Percentage of all ages in poverty	23.8 (2000)	24.6 (2004)	35.8 (2000)	26.6 (2004)

Source: Bureau of Economic Analysis (BEA) 2005 a, b, c, and d, Census Bureau 2004, USBP 2006, Texas County Information Project 2006 a and b
 B= billion, M=million

In 2005, El Paso County had a per capita personal income (PCPI) of \$23,256 (BEA 2005c). This PCPI ranked 184th in the State of Texas, and was 72 percent of the state average of \$32,460, and 67 percent of the National average of \$34,471. The average

1 annual growth rate of PCPI from 1995 to 2005 was 4.6 percent. This average annual
2 growth rate was higher than the growth rate for the state (4.4 percent) and higher than
3 that for the Nation (4.1 percent). In 2005, El Paso County had a total personal income
4 (TPI) of \$16.8 billion. This TPI ranked 9th in the state and accounted for 2.3 percent of the
5 state total. The 2005 TPI reflected an increase of 6.6 percent from 2004, which was
6 lower than the 2004-2005 state change of 7.8 percent and the national change of 5.2
7 percent. In El Paso County during 2004, 24.6 percent of the population was living below
8 the poverty level, which is higher than the 16.2 percent of the state population in poverty
9 (U.S. Census Bureau 2004).

10
11 In 2005, Hudspeth County had a PCPI of \$14,804 (BEA 2005d). This PCPI ranked 249th
12 in the State of Texas, and was 46 percent of the state average of \$32,460, and 43
13 percent of the national average of \$34,471. The average annual growth rate of PCPI
14 from 1995 to 2005 was 3.7 percent. This average annual growth rate was lower than the
15 growth rate for the state (4.4 percent) and lower than that for the nation (4.1 percent). In
16 2005, Hudspeth County had a TPI of \$48.9 million, which ranked 234th in the state. The
17 2005 TPI reflected a decrease of 7.1 percent from 2004, which was lower than the 2004-
18 2005 state increase of 7.8 percent and the national increase of 5.2 percent. In Hudspeth
19 County during 2004, 26.6 percent of the population was living below the poverty level,
20 which is higher than the 16.2 percent of the state population in poverty (U.S. Census
21 Bureau 2004).

22 23 **3.15.2 Environmental Consequences**

24 **3.15.2.1 No Action Alternative**

25 There would be no direct impacts on socioeconomic resources under the No Action
26 Alternative, since no construction of lights, primary pedestrian fence or bridges would
27 occur in the project area. There would continue to be indirect impacts on local crime
28 rates as a result of IA and drug smuggling activities in the vicinity of the project corridor,
29 as well as on law enforcement costs associated with those activities.

1 **3.15.2.2 Proposed Action Alternative**

2 The Proposed Action Alternative would utilize USBP staff, JTF-N or National Guard
3 units, or private contractors to construct the permanent lights, fence and bridges;
4 therefore, there would be no effects on population, personal income, or housing unless
5 private contractors were used. In this event, a temporary increase in personal income
6 may occur. Most materials and other project expenditures would be obtained from
7 within the local community, providing minor temporary, direct economic benefits.
8 Adequate housing is available in the El Paso area, and no displacement is predicted to
9 result from this action; therefore, there would be no direct impacts on housing in the
10 region. The proposed fence and lights along the USIBWC levee should not impact
11 recreational activities south of the levee, since access to the Rio Grande floodplain is
12 already restricted by existing fences and gates, as well as USBP patrols. No significant,
13 permanent or long-lasting socioeconomic impacts would be anticipated as a result of
14 the construction activity.

15
16 **3.15.2.3 Floating Foundation Fence Alternative**

17 Socioeconomic effects of the Floating Foundation Fence Alternative would be the same
18 as those for the Proposed Action Alternative.

19
20 **3.16 ENVIRONMENTAL JUSTICE**

21
22 **3.16.1 Affected Environment**

23 EO 12898 (Federal Actions to Address Environmental Justice in Minority and Low-Income
24 Populations) was signed in February 1994. This order was intended to direct Federal
25 agencies "...to make achieving environmental justice part of its mission by identifying and
26 addressing... disproportionately high and adverse human health or environmental effects
27 of its programs, policies, and activities on minority populations and low-income
28 populations in the [U.S.]..." To comply with the EO, minority and poverty status in the
29 vicinity of the project was examined to determine if any minority and/or low-income
30 communities would potentially be disproportionately affected by implementation of the

1 Proposed Action Alternative and other alternatives. Both low-income and minority
2 populations are present within the ROI.

3

4 **3.16.2 Environmental Consequences**

5 **3.16.2.1 No Action Alternative**

6 Under the No Action Alternative, continuing IA migration through the area would have
7 adverse impacts on all populations in the ROI.

8

9 **3.16.2.2 Proposed Action Alternative**

10 No significant adverse environmental effects have been identified for any resource area
11 or population (minority, low-income, or otherwise) analyzed in this EA. There would be
12 no displacements of residences or businesses.

13

14 Elimination of illegal cross-border activities would benefit the entire population of El
15 Paso and Hudspeth counties, regardless of age, nationality, ethnicity, or economic
16 status. Thus, the Proposed Action Alternative would be in compliance with EO 12898.

17

18 **3.16.2.3 Floating Foundation Fence Alternative**

19 The effects of the Floating Foundation Fence Alternative, relative to EO 12898 would be
20 the same as the Proposed Action Alternative.

21

22 **3.17 PROTECTION OF CHILDREN**

23

24 **3.17.1 Affected Environment**

25 EO 13045 requires each Federal agency “to identify and assess environmental health
26 risks and safety risks that may disproportionately affect children; and ensure that its
27 policies, programs, activities, and standards address disproportionate risks to children
28 that result from environmental health risks or safety risks.” This EO was prompted by the
29 recognition that children, still undergoing physiological growth and development, are more
30 sensitive to adverse environmental health and safety risks than adults. Special risks to
31 children related to construction activity may include safety, noise, pollutants, and

1 hazardous materials. Children would be more likely to be present in residential
2 neighborhoods adjacent to the project corridor rather than in the less populated
3 agricultural areas.

4 5 **3.17.2 Environmental Consequences**

6 **3.17.2.1 No Action Alternative**

7 Under the No Action alternative, continuing IA migration through the area would have
8 adverse impacts on all populations in the ROI, including children.

9 10 **3.17.2.2 Proposed Action Alternative**

11 Safety precautions to protect children in areas surrounding the work sites for the
12 Proposed Action Alternative would include adequate measures to restrict access,
13 minimization of hazards associated with construction activities, and proper handling and
14 disposal of hazardous materials. Such mitigation measures would serve to offset any
15 potential for impacts to children. All of the construction activity, with the exception of
16 bridge construction, would occur south of the EPCWID1 and HCCRD1 canals, where
17 access is currently restricted. With the implementation of mitigation measures, no
18 impacts or special risks to children would be associated with the Proposed Action
19 Alternative, thus, the Proposed Action Alternative would be in compliance with EO
20 13045.

21 22 **3.17.2.3 Floating Foundation Fence Alternative**

23 The effects of the Floating Foundation Fence Alternative implementation would be the
24 same as those described for the Proposed Action Alternative, and no special risks to
25 children would be expected.

26 27 **3.18 HUMAN HEALTH AND SAFETY**

28 29 **3.18.1 Affected Environment**

30 Currently, the safety of USBP agents in the area of the Proposed Action Alternative is
31 compromised by a lack of visibility at night along the canal and levee, and the inability to

1 readily access portions of the patrol area between the canal and the Rio Grande.
2 Substantially more patrols are necessary due to the absence of TI components, such as
3 fences and lights, to provide some level of safety for USBP agents and IAs.
4

5 The health and safety of IAs attempting to cross the river and the EPCWID1 and
6 HCCRD1 canals are at risk, especially during periods of high water, due to the lack of
7 deterrent structures and the inability to judge water depth and current strength at night,
8 when most crossing attempts are made. Emergency rescue attempts are hindered by a
9 lack of bridge access to the area between the canal and the river and the lack of
10 visibility at night. The safety of residents and property in the U.S. along the project
11 corridor during floods is also diminished due to lack of access for USBWC, EPCWID1
12 and HCCRD1 maintenance and flood fighting personnel.
13

14 **3.18.2 Environmental Consequences**

15 **3.18.2.1 No Action Alternative**

16 Under the No Action Alternative, there would be no primary pedestrian fence, lights or
17 bridges constructed in the project area. The safety of USBP agents operating in the
18 area at night would still be compromised by the inability to see IAs and drug smugglers
19 during hours of darkness, when most illegal activities occur. Rescue efforts in the
20 EPCWID1 and HCCRD1 canals and the Rio Grande floodplain during flood events
21 would remain hampered by a lack of bridge access and a lack of nighttime visibility.
22 The lack of an effective physical deterrent to IA movement across the border (i.e.,
23 fence) would result in increased public health and safety concerns and law enforcement
24 concerns due to the increasing numbers of IAs crossing the border, and the
25 concomitant increase in associated criminal activity in the community.
26

27 **3.18.2.2 Proposed Action Alternative**

28 Impacts to human health and safety would be limited to those normally encountered
29 during construction activities. An approved Health and Safety Plan would be developed
30 prior to initiating construction activities to minimize those impacts. Construction site
31 safety is largely a matter of adherence to regulatory requirements imposed for the

1 benefit of employees and implementation of operational practices that reduce risks of
2 illness, injury, death, and property damage. The Occupational Safety and Health
3 Administration (OSHA) and EPA issue standards that specify the amount and type of
4 training required for industrial workers, the use of protective equipment and clothing,
5 engineering controls, and maximum exposure limits with respect to workplace stressors.

6
7 Construction workers at any of the proposed construction sites would be exposed to
8 safety risks from the inherent dangers at construction sites. Contractors would be
9 required to establish and maintain safety programs at the construction site. The
10 proposed construction would not expose members of the general public to increased
11 safety risks.

12
13 Increased nighttime visibility of the border area and the added deterrent of border
14 fencing would have long-term beneficial effects for USBP employees operating in the El
15 Paso, Ysleta, Fabens and Fort Hancock AOs.

16
17 Medical services, fire protection and police service would not be changed from the
18 current standards for the area. The Proposed Action Alternative would not create any
19 additional burden on any health and safety services. The safety of persons in distress
20 in the area between the canal and the Rio Grande would be enhanced by the added
21 access for emergency personnel afforded by the new bridges, and the increased
22 visibility resulting from the lighting of the area.

23
24 The design and location of the primary pedestrian fence footings would not compromise
25 the integrity of either the USIBWC levee or the EPCWID1 and HCCRD1 canals, and the
26 flood protection and irrigation afforded by these structures would not be diminished.

27
28 **3.18.2.3 Floating Foundation Fence Alternative**

29 Impacts to human health and safety of the Floating Foundation Fence Alternative would
30 be the same as those of the Proposed Action Alternative.

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