

SECTION 2 DESCRIPTION OF THE PROPOSED ACTION AND ALTERNATIVES

This chapter presents a detailed description of the alternatives, an overview of the dredging methods and development, descriptions of past and reasonably foreseeable future actions, and summarizes the environmental effects of the Proposed Action and No Action Alternative.

2.1 DETAILED DESCRIPTION OF THE PROPOSED ACTION

The Proposed Action is to dredge the island and sandbar below the Retamal Diversion Dam by hydraulic or mechanical methods. The sediment would be removed to within 1 foot of a proposed channel invert elevation. The proposed bottom elevation varies from 55.25 feet to 54.25 in the dredging area. The normal dam operating water surface elevation is 60.6 feet during the non-irrigation season. The dredge channel width varies between 180 feet and 290 feet. Initial dredging would begin adjacent to the dam concrete apron below the dam and proceed downstream approximately 1,400 feet. Dredging may include various types of material including fine to coarse sand, silty sand, and silts. Results of the geophysical testing of the sediments from the field studies conducted in June 2003 indicate that the majority of the material consists of sand with some silt and clays (USIBWC 2003b). Figure 2.1 shows dredging locations, construction equipment lay-down areas, and other Project Area features.

Representative cross-sections of the river at the dredging location were provided by USIBWC and included in the field studies results report (USIBWC 2003b). These cross-sections show both cut and fill would be required to attain the design channel invert elevation, although filling has been determined to be unnecessary for the Proposed Action; therefore, no filling activities would be included in the Proposed Action (USIBWC 2003c). Areas lower than the design invert elevation would remain the same.

Vegetation clearing on the sediment island would be performed prior to dredging activities. Some general debris including tree stumps, roots, tree branches, logs, large rocks, other vegetation, and floating trash may also be encountered.

The work would need to be completed between September and February, corresponding to the non-irrigation season when water levels in the river are maintained at lower levels. Ambient air temperatures can vary from the lower 30 degrees Fahrenheit during the winter months to highs of 105 F in the summer months.

Construction facilities would be arranged and operated in a manner to preserve and protect existing features, trees, and vegetation to the maximum extent practicable. All vegetation such as trees, shrubs, and grass, and other landscape features on or adjacent to the worksite, which are not to be removed and which do not unreasonably interfere with the required work would be preserved, protected, and repaired if damaged, as would all existing improvements and utilities at or near the Project Area. Areas would be clearly defined to prevent entry of personnel into non-work areas or into areas that contain protected or endangered species.

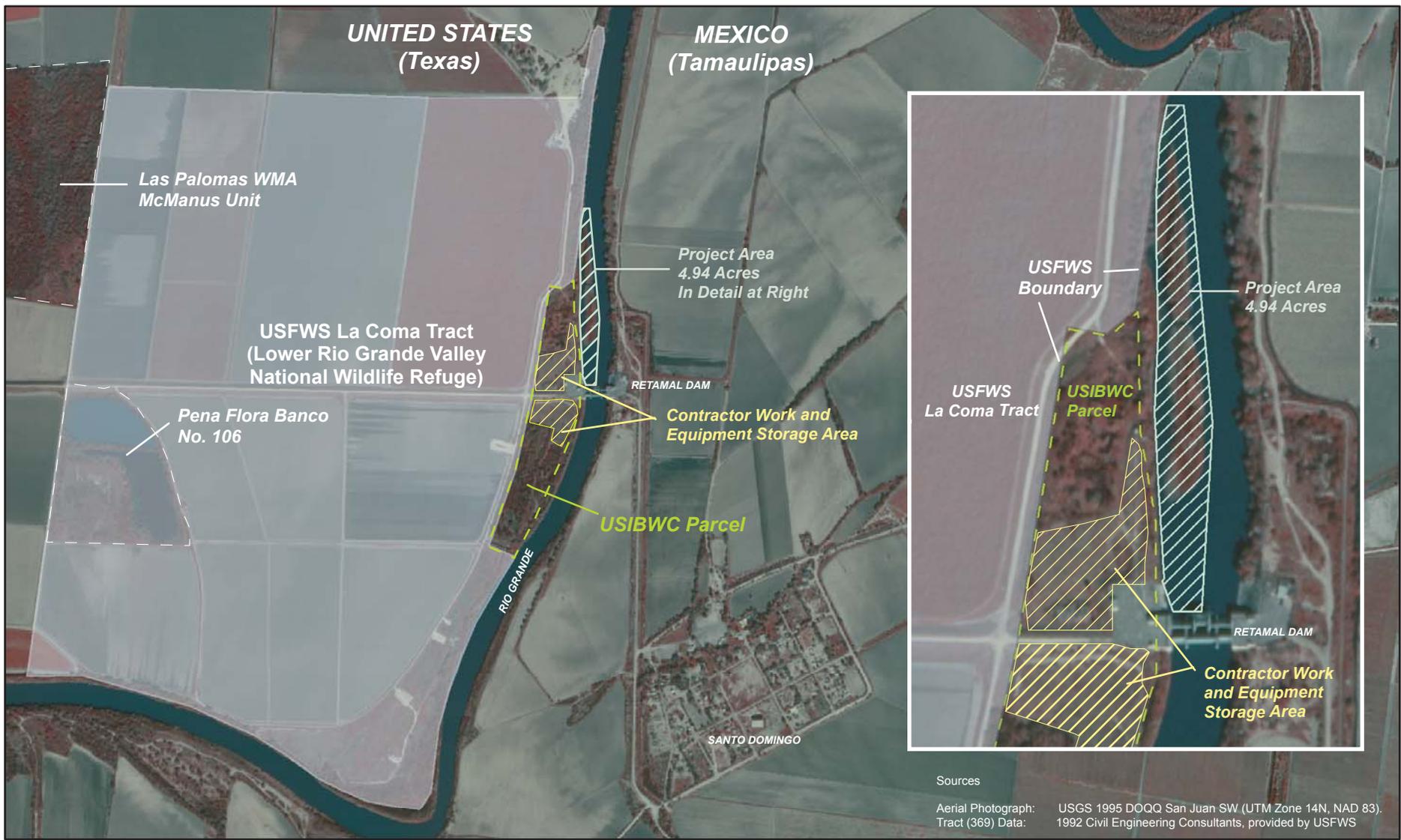
2.1.1 Hydraulic Dredging – Option 1

Approximately 54,000 cy of materials would be removed by hydraulic dredging with BU of the excavated materials on the Mexican side of the border. Dredging operations would take approximately 20 to 180 days to complete depending on the production rate. River flow would be maintained at all times during the project work. Figure 2.2 shows the location of the proposed disposal area of the dredged materials. A typical slurry concentration from hydraulic dredging would be 13 percent by dry weight (USACE 1983). Using this value, a total slurry volume of more than 120 million gallons of slurry can be expected to be produced.

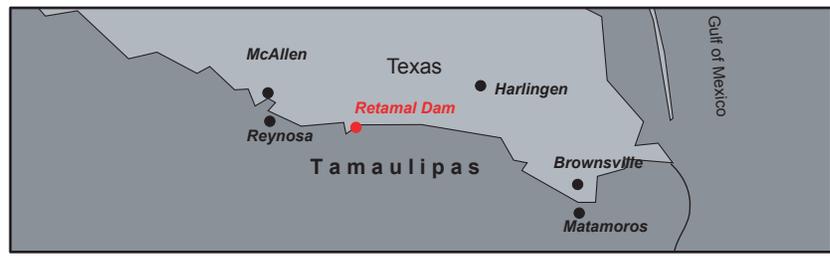
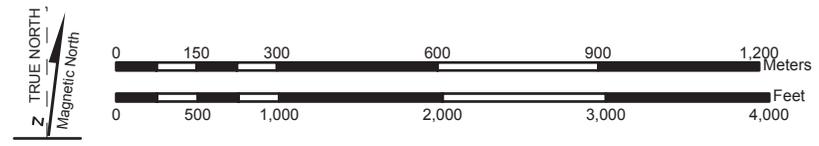
The production rates were based on Parsons experience concerning similar dredging operations, and by referring to the calculated production. The amount of time a 10-inch hydraulic pipeline dredge would be in use is a function of production rate (amount of sediment dredged per hour (cy/hr) and operational days. The maximum production rate for a 10-inch dredge ranges between 30-300 cy/hr, pumping up to 1,000 feet away. The production rate would be reduced substantially beyond 1,000 feet (to approximately 20 to 30 percent of the maximum rates), but could be increased by using booster pumps (Parsons 2002).

Assuming a cell height of 8 feet, the theoretical minimum cell area required to contain the 54,000 cy of sediment, *without the slurry water*, would be approximately 4.2 acres. However, the high sand content of the sediments suggests that the dredged material would settle rapidly out of the slurry. The area required for dewatering the sediments can be reduced by constructing more than one dewatering cell, so that sediments can be allowed to dewater while slurry is applied to another cell. It may also be desirable to have a final cell that is dedicated to settling any remaining suspended silt and clay sediment. The actual number and size of the dewatering cells would be dependent upon the dredging contractor's proposed method of operation, type of equipment, cell design, and dewatering time. A series of perforated lateral drains and pumps would greatly reduce the size of the dewatering cells. Alternatively, the dredged materials could be pumped into permeable geotextile tubes (geotubes) to contain the slurry, thus allowing the sediments to remain inside the tubes and water to drain from the porous material. Additionally, depending on the locations and characteristics of the BU or disposal sites, it may be possible to apply some of all of the slurry volume produced directly without dewatering.

A U.S. contractor would perform the dredging and cell design. A Mexican contractor would be responsible for construction and operation of the dewatering cells, and if necessary, transportation of the materials from the dewatering cells to the final destination. On the U.S. side of the river, USIBWC land would be available for field offices, storage yards, and other construction facilities. Private land would not be used. Contractor equipment lay-down area would be located in previously disturbed USIBWC owned areas, adjacent to the Lower Rio Grande Valley National Wildlife Refuge (La Coma Tract) area near Retamal Diversion Dam. The La Coma Tract is also known as the Arthur E. Beckwith Tract (Tract 369). Approximately 3,800 feet of Retamal Dike would be used to access the Project Area. The easement for the dike and surrounding land is owned and managed by the United States Fish and Wildlife Service (USFWS). Proposed project activities would not encroach on refuge boundary (See Appendix D for USIBWC response to the USFWS comments on the draft EA).



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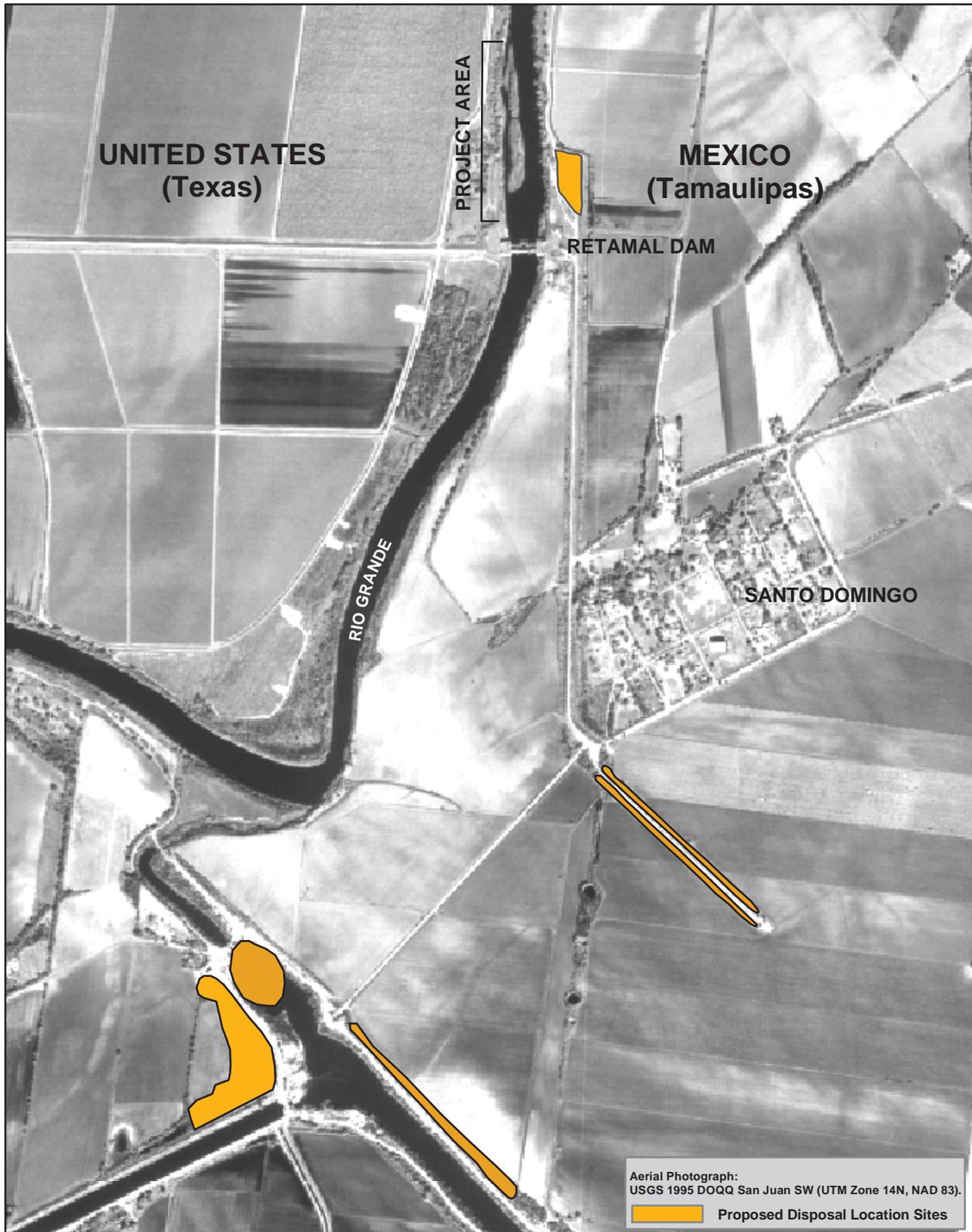


PARSONS

Figure 2.1 Detailed Location of the Study Area

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Aerial Photograph:
 USGS 1995 DOQQ San Juan SW (UTM Zone 14N, NAD 83).
 [Yellow Polygon] Proposed Disposal Location Sites

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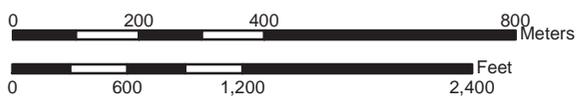


Figure 2.2 Proposed Disposal Location of Dredged Materials

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Option 1 would include the following activities:

- Clearing all trees, rubbish, and other vegetation as required for access to the Project Area, for the island prior to dredging, and possibly for construction of the temporary cells on the Mexican riverbank. Clearing would be limited to only the areas needed for the project. The USIBWC would conduct a boundary survey prior to project startup, clearly delineate adjacent refuge property, and notify all contractors to avoid refuge property. All vegetation resulting from clearing activities would be deposited on the Mexican riverbank and appropriately disposed by the Mexican Contractor. It is likely the material would be chipped in place on the island and managed along with the dredged sediment.
- Constructing transport piping and dewatering cells for dredged material on the Mexican riverbank, including retention dikes, drainage sumps and piping. The dewatering cells would ideally be located adjacent to the dredging area. It is anticipated that the cells would be located on Mexican Federal Government land adjacent to the river at the dredging location if sufficient area is available. It is likely that a piping system may be set up to transport the slurry mix directly to the final disposal area. The cells would be constructed by first clearing the land area, constructing dikes, and installing a discharge weir and discharge piping and/or structures.
- Setup and launch of dredge and support equipment. Vegetable base or approved biodegradable hydraulic oil would be used. Enough “oil boom” would be maintained in the immediate area to prevent contaminants from moving down stream more than 1 mile from a spill point. Engine room bilge fluids (contaminated oil, fuel, and water mix) would be contained and pumped into drums for legal disposal. No discharge from bilges would be allowed to discharge into the Rio Grande.
- Transporting and placing dredged material on the BU sites.
- Demobilization of dredge and associated support equipment from the site upon completion of the project.
- Restoration of land areas disturbed by project activities.

2.1.2 Mechanical Dredging – Option 2

Approximately 54,000 cy of materials would be removed by mechanical dredging with beneficial use of the excavated materials on the Mexican side of the border. Dredging operations would take approximately 20 to 180 days to complete depending on the production rate. River flow would be maintained at all times during the project work. Figure 2.2 shows the location of the proposed disposal area of the dredged materials. Mechanically dredged sediments typically have near *in situ* densities (USACE 1983). This would result in a total excavated volume approximately equal to the in-place volume, or 54,000 cy. The sediments would be expected to decrease in volume as they dry and/or are compacted.

The production rates were based on typical reported rates for mechanical dredging (USACE 1983). A mechanical dredge suitable for work at this site would be expected to produce from 30 to 300 cy/hr. The limiting factor for mechanical dredging may be transportation of the dredged sediments. Since a mechanical dredge would not be capable of transporting dredged material to the final destination, other means of transport would be required. Transport from the dredge site would be difficult because of access limitations caused by high, steep riverbanks and non-navigable river section. Direct truck access to the dredge site would most likely not be possible due to the steep terrain. A conveyor system could be used to transport dredged material to the top of the dike, where truck access would be possible. The material would then have to be hauled over the border to the Mexico BU sites. This would require approximately 2,700 truckloads with a capacity of 20-cy.

A U.S. contractor would perform the dredging and a Mexican contractor would be responsible for applying the dredged material to the BU sites. If the dredged materials are barged, a U.S. contractor would be responsible for loading, operating, and unloading the barges, and a Mexican contractor would be responsible for trucking on the Mexican side of the river. On the U.S. side of the river, USIBWC land would be available for field offices, storage yards, and other construction facilities. Private land would not be used. Contractor equipment lay-down area would be located in previously disturbed USIBWC owned areas, adjacent to the Lower Rio Grande Valley National Wildlife Refuge (La Coma Tract) area near Retamal Diversion Dam. Approximately 3,800 feet of Retamal Dike would be used to access the Project Area. The easement for the dike and surrounding land is owned and managed by the USFWS. Proposed project activities would not encroach on refuge boundary (See Appendix D for USIBWC response to the USFWS comments on the draft EA).

Option 2 would include the following activities:

- Cofferdam (metal or inflatable) construction to de-water alternate sides of the river.
- Operations of Diversion Dam gates to regulate alternate sides of river flow.
- Clearing all trees, rubbish, and other vegetation as required for access to the Project Area, for the island prior to dredging, and possibly for construction of the temporary cells on the Mexican riverbank. The USIBWC would conduct a boundary survey prior to project startup, clearly delineate adjacent refuge property, and notify all contractors to avoid refuge property. Clearing would be limited to only the areas needed for the project. All vegetation resulting from clearing activities would be deposited on the Mexican riverbank and appropriately disposed by the Mexican Contractor. It is likely the material would be chipped in place on the island and managed along with the dredged sediment.
- Potentially constructing a conveyor system on the U.S. or Mexican riverbank.
- Setup and launch of dredge and support equipment. Vegetable base or approved biodegradable hydraulic oil would be used. Enough “oil boom” would be maintained in the immediate area to prevent contaminants from moving down

stream more than 1 mile from a spill point. Engine room bilge fluids (contaminated oil, fuel, and water mix) would be contained and pumped into drums for legal disposal. No discharge from bilges would be allowed to discharge into the Rio Grande.

- Performing the required maintenance dredging at the designated locations within the project footprint. Depending on dredging equipment used, dredging operations would be performed with downstream areas enclosed with silt curtain, Gunderbooms®, or other appropriate means to prevent degradation of turbidity outside the dredging area. Sediments above the river water level may be excavated using traditional earthmoving equipment.
- Transporting and placing dredged material on the BU sites.
- Demobilization of dredge and associated support equipment from the site upon completion of the project.
- Restoration of land areas disturbed by project activities.

A variety of equipment would be used to perform the dredging and support activities. The dredge would likely be powered by a diesel engine, and the conveyors may be electric or diesel powered. There may also be support boats or barges that are diesel or gasoline powered. A crane may be required to put the dredge and support equipment on the river and remove it when the work is complete. There would also be trucks for delivering equipment and supplies to the site, and trucks for hauling dredged material. Bulldozers, chippers, and chainsaws would likely be used for clearing activities. Standard earthmoving equipment could be used to prepare the barge unloading site, and to excavate sediments that are above the water level.

2.2 DESCRIPTION OF THE NO ACTION ALTERNATIVE

The No Action Alternative is to not remove the sandbar and island downstream of the Retamal Diversion Dam. The accumulation of sediment would likely continue in the channel on the U.S. side of the Rio Grande and along the concrete apron beneath the flood gates, thus potentially impairing the ability of the gates to operate effectively to properly control flood events. The main channel in the river could continue shifting toward the Mexican side, potentially changing the boundary location between the two countries.

2.3 DREDGING METHODS OVERVIEW AND DEVELOPMENT

Dredging methods relevant to the Proposed Action can be categorized based on the type of excavation process used and the method of transporting and placement of the excavated material. In general, there are two main categories of excavation techniques, hydraulic dredging and mechanical dredging. Both methods are discussed below.

2.3.1 Hydraulic Dredging

Hydraulic dredges remove and transport sediment in liquid slurry form. Mechanical or hydraulic agitators can be installed to loosen sediment that is then captured with suction lines.

Hydraulic dredges are usually barge mounted and carry diesel or electric-powered centrifugal pumps with discharge pipes ranging from 6 to 48 inches in diameter. The slurry is transported by pipeline to a disposal area where the dredge material is allowed to settle out of the slurry, and the clarified water is discharged over a weir (U.S. Army Corps of Engineers [USACE] 1992). Hydraulic dredging generally results in less turbidity in the dredging area compared to mechanical dredging.

The advantage of hydraulic dredging is that it can excavate and move large volumes of sediment quickly. The material can be efficiently transported to dewatering cells at the disposal area. Hydraulic dredging requires less handling of the material from the point of excavation to the disposal area, thereby decreasing the chance of spillage as compared to mechanical dredging, which excavate and transport materials using some type of bucket.

2.3.2 Mechanical Dredging

Mechanical dredges remove bottom sediment through the direct application of mechanical force to dislodge and excavate the material at almost *in situ* densities. Backhoe, bucket (such as clamshell, orange-peel, and dragline), bucket ladder, bucket wheel, and dipper dredges are types of mechanical dredges. Sediments excavated with a mechanical dredge are generally placed into a barge or scow for transportation to the disposal site (USACE 1992).

The advantages of mechanical methods are the ability to excavate harder material than the hydraulic dredge can (including rock), and transport a more solid, dense material (as opposed to slurry) to disposal sites via truck or barge. Mechanically dredged materials typically have near in-place densities, and it may be possible to place them directly at the reuse or disposal site without further dewatering. This is a big advantage over hydraulic dredging, which produces a slurry that typically must be dewatered before the sediments can be reused or permanently disposed. Production rates for mechanical dredges are dependent on the material excavated, the depth of excavation, and the size of the bucket.

For this site, a significant disadvantage to mechanical dredging is the transport of dredge material from the dredging site due to access limitations. Mechanical dredges cannot efficiently transport dredged material, and therefore must place dredged material into a storage site or directly into transportation equipment at the dredging site. Since there is no convenient space for storing material at the dredge site, storage is not considered further for this project. Typically, barges or trucks would be used to transport mechanically dredged material. The steep dike banks would make truck access difficult, and the river may not be navigable for barge traffic during the September to February period. While it may be possible to use barges in the river in the vicinity of the dredge location, there may not be a convenient place with truck access, preferably on the Mexico-side of the river, for unloading the barges. It may be possible to use a conveyor system for moving the dredged material from the dredge site or barge unloading site to the top of the dikes where there is easier truck access. A disadvantage to using barges for transporting dredged material is that the material must be transferred to trucks for transport to the final BU or disposal location.

Bucket dredges are classified by the USACE as causing high turbidity. Bucket dredges, such as the clamshell, excavate a heaped bucket of material, some of which is washed away during the turbulence of the hoisting operation. Once the bucket clears the water surface, additional material loss occurs through the rapid draining of water. Loss of material is influenced by the fit and condition of the clamshell, the hoisting speed, and the properties of the sediment. Even under ideal conditions, substantial losses of loose and fine sediments will occur. Watertight buckets have been developed to minimize turbidity generated by the clamshell operation. Watertight buckets generate 30-70 percent less turbidity in the water column than typical buckets, primarily due to a 35 percent reduction in leakage of dredged material.

A second method to reduce turbidity around the clamshell dredge involves placing a silt curtain downstream or around the dredging operation. Silt curtains are impervious, vertical barriers that extend from the water surface to a specified depth. The flexible polyester-reinforced vinyl fabric forming the barrier is maintained in a vertical position by floatation material at the top and a ballast chain along the bottom. The curtain pieces are manufactured in 100-foot sections which are joined at the site.

2.3.3 Dredge Material Disposal Options

The three primary placement or disposal options for excavated materials are shown below:

- Open water disposal.
- Confined disposal.
- Beneficial use.

Open Water. Open water disposal is the placement of dredged material back into the rivers, via pipeline or release from hopper dredges or barges. The potential for environmental impacts is affected by the physical behavior of the open water discharge. Physical behavior is dependent on the type of dredging and disposal operation used, the nature of the material (physical characteristics), and the hydrodynamics of the disposal site (USACE 1992).

Open water disposal would involve placing excavated material back into the Rio Grande at another location. This is not recommended since adding sediment back into the river may cause or exacerbate problems downstream. Open water disposal is thus eliminated from consideration.

Confined Disposal. Confined disposal is the placement of dredged material within diked or upland confined disposal facilities via pipeline or other means. Confined disposal facilities may be constructed as upland sites, nearshore site with one or more sides in water, or as island containment areas (USACE 1992).

Upland confined disposal could be accomplished by constructing a diked facility to separate, store, and dewater the excavated material. The diked area would allow sediment to collect in the bottom and clarified water to exit over a weir or pumped from a sump collection

system. Dredge material could be piped to containment cells on the Mexican side of the river for dewatering. Permanent storage/disposal could be at a different location.

Beneficial Use (BU). Beneficial use includes a wide variety of options, which utilize the material for some productive purpose. Dredged material can be a manageable, valuable resource. Broad categories of possible beneficial uses include:

- Habitat restoration/enhancement.
- Aquaculture.
- Parks and recreation.
- Agriculture, forestry, and horticulture.
- Shoreline stabilization and erosion controls.
- Construction and industrial use.
- Material transfer (fill, dikes, levees, parking lots, and roads), and
- Multiple purpose.

Beneficial use of the dredge material has been identified on the Mexican side of the border. Since the material has been chemically tested and found to be suitable for BU, no special provisions would be required concerning disposal of the material in Mexico (USIBWC 2003b). In the case of hydraulic dredging, dredge material would be piped to temporary holding cells on the Mexican side of the river for dewatering. After dewatering, the material would be available for BU. The holding cells would be sized accordingly to allow the dredged material to settle out of the slurry, and allow the clarified water to be discharged. In the case of mechanical dredging, the dredged material will have a much lower water content, and may not require any dewatering prior to BU.

2.4 DESCRIPTION OF PAST AND REASONABLY FORESEEABLE FUTURE ACTIONS

Complete environmental impact analysis of the Proposed Action and alternatives must consider cumulative impacts due to other actions. A cumulative impact, as defined by the CEQ (40 CFR 1508.7), is the “impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of which agency (federal or non-federal) or person undertakes such actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time.” USIBWC staff identified one other past and reasonably foreseeable action that would occur concurrently with the Proposed Action.

The USIBWC reviewed a number of reasonably foreseeable actions and determined that there would be cumulative effects from three different projects:

- Operation Rio Grande by the ICE (formerly the INS);
- Brownsville Weir and Reservoir Project (BWR Project); and

- Alternative Vegetation Management Practices for the LRGFCP.

Operation Rio Grande and the Alternative Vegetation Management Practices for the LRGFCP are currently undergoing the NEPA review process. Brownsville Public Utilities Board (BPUB) has submitted an EA to the Texas Commission on Environmental Quality (TCEQ), formerly known as Texas Natural Resource Conservation Commission, describing proposed plans for the BWR Project. Based on reviews and understanding of these projects, the proposed activities would not be conducted in the vicinity of the Project Area and therefore, there would be no cumulative impacts associated with the Proposed Action.

2.5 ALTERNATIVE DISMISSED

Other related actions, which could occur concurrently with the Proposed Action, include the shoring up of the banks along the Mexican side of the Rio Grande directly across from the Project Area. Since this action is outside the jurisdiction of the USIBWC and boundary of the U.S, the analysis will not be included in the EA.

2.6 COMPARISON OF ENVIRONMENTAL EFFECTS OF ALL ALTERNATIVES

Table 2.6-1 is a summary of the potential impacts of the Proposed Action and the No Action Alternative on the natural and man-made environment.

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Table 2.6-1 Summary of Environmental Impacts

Resource (Applicable EA Section)	Proposed Action Option 1	Proposed Action Option 2	No Action Alternative
Water Rights (Section 4.1)	<p>Approximately 1,200 acre-feet of water rights would be needed for dredging operations to occur. Additional amounts will likely be necessary to allow for contingencies.</p> <p>Hydraulic dredging operations could not occur without water acquisitions. Currently, there are no U.S. water rights available. Water would have to be temporarily supplied by Mexico or purchased from water right holders.</p>	Water rights would not be required; therefore, impacts would not be expected.	There would be no impact on water rights.
River Hydrology (Section 4.2)	Long-term impacts would be negligible, as the Proposed Action would re-establish design channel configuration created during dam construction.	Impacts associated with implementation of Option 2 would be the same as those described under Option 1.	The main channel in the river could potentially continue to shift toward the Mexican side of the international boundary.
	<p>Dredging activities would not appreciably improve flood containment capacity. Modeling results indicate an approximate 0.05 foot increase in flood containment capacity would be achieved by dredging. Hydraulic dredging operations will result in less turbidity than mechanical dredging (Option 2).</p>	Impacts associated with implementation of Option 2 would be the same as those described under Option 1.	The accumulation of sediment would likely continue in the channel on the U.S. side of the Rio Grande and along the concrete apron beneath the flood gates, thus potentially impairing the ability of the gates to operate effectively to properly control flood events. Further modification to international boundary would likely occur as the river continues to cut into the Mexican side of the river bank. Long-term maintenance would likely be required to assure channel configuration is maintained in the future.

Table 2.6-1 Summary of Environmental Impacts (...continued)

Resource (Applicable EA Section)	Proposed Action Option 1	Proposed Action Option 2	No Action Alternative
	Dredging activities would result in re-establishment of international boundary. Long-term maintenance would likely be required to preserve boundary, to address re-occurring island formation and related sediment accretion at the dam apron, and to assure channel configuration is maintained in the future.	Impacts associated with implementation of Option 2 would be the same as those described under Option 1.	Currently, there is no appreciable impact to flood containment capacity. Bank stabilization (armoring with rip-rap) on the Mexican side would likely re-establish the former bank extent and international boundary.
Water and Dredge Material Quality (Section 4.3)	Potential short term impacts from total suspended solids (TSS) would be mitigated using BMPs during dredging operations.	Impacts associated with implementation of Option 2 would be the same as those described under Option 1.	No impacts would occur from the baseline activities.
Soils and Geology (Section 4.4)	Approximately 54,000 cy of fluvial terrace deposits (sandbar and island) would be removed. Short-term minor surface disturbances would occur at the contractor equipment lay down areas.	Impacts associated with implementation of Option 2 would be the same as those described under Option 1.	No impacts would occur from the baseline activities.
Wetlands (Section 4.5)	The Proposed Action would eliminate 2.1 acres of Riverine wetlands by dredging. Mitigation would be conducted to offset loss of jurisdictional wetlands. Heavy sediment loads and variable water regimes of the Rio Grande would continue to provide a source and means for sediment build-up.	Impacts associated with implementation of Option 2 would be the same as those described under Option 1.	A potential increase in wetlands could occur over time. Sediment accretion and subsequent colonization by early successional species would likely occur between the current island and US bank as well as longitudinally. Heavy sediment loads and variable water regimes of the Rio Grande would continue to provide a source and means for sediment build-up.

Table 2.6-1 Summary of Environmental Impacts (...continued)

Resource (Applicable EA Section)	Proposed Action Option 1	Proposed Action Option 2	No Action Alternative
Vegetation (Section 4.6)	The Proposed Action would eliminate 2.3 acres of Riverine vegetated island by dredging.	Impacts associated with implementation of Option 2 would be the same as those described under Option 1.	A potential increase in wetlands could occur.
Wildlife (Section 4.7)	The Proposed Action would eliminate 2.3 acres of vegetated island of which 2.1 acres is Riverine wetlands. Localized negative effects on wildlife would occur.	Impacts associated with implementation of Option 2 would be the same as those described under Option 1.	A potential increase in wetlands could occur. Sediment accretion and subsequent colonization by early successional species would likely occur between the current island and U.S. bank as well as longitudinally.
Threatened and Endangered Species (Section 4.8)	The Proposed Action is not likely to affect threatened and endangered (T&E) species near the Project Area. Although there is a possibility of T&E species within the Project Area, the Proposed Action is not likely to affect listed species.	Impacts associated with implementation of Option 2 would be the same as those described under Option 1.	No impacts would likely occur from the baseline activities.
Aquatic Resources (Section 4.9)	A decrease in aquatic diversity would occur due to dredging operations. Although the amount of backwater habitat is small (<1 acres), the limited amount of diverse aquatic habitat in the LRGV accentuate the importance of relatively small impacts. Fish would be minimally affected by dredging activities. Due to their mobile nature, fish would be able to avoid the dredging equipment and sustain no long-term ill effects from the Proposed Action.	Impacts associated with implementation of Option 2 would be the same as those described under Option 1.	A potential increase in backwater habitat and aquatic diversity would occur.

Table 2.6-1 Summary of Environmental Impacts (...continued)

Resource (Applicable EA Section)	Proposed Action Option 1	Proposed Action Option 2	No Action Alternative
Air Quality (Section 4.10)	Construction activities would result in the generation of air pollutant emissions during the construction period. The emissions would be temporary and would cease after completion of the activity. Therefore, the air emission impacts from the construction activities associated with the Proposed Action would not be considered significant.	Impacts associated with implementation of Option 2 would be the same as those described under Option 1.	No impacts would occur from the baseline activities.
Noise (Section 4.11)	Construction noise would be temporary, occurring only during daytime, and would cease when the project is completed. Outdoor noise from construction activity 50 feet from the noise source could be as high as 75 to 89 dB. Impacts to the noise environment would not be considered significant.	Impacts associated with implementation of Option 2 would be the same as those described under Option 1.	No impacts would occur from the baseline activities.
Cultural Resources (Section 4.12)	No archaeological or historical resources of cultural significance were identified within the Project Area according to previous cultural resource investigations within the Project Area or within a 1-mile radius.	Impacts associated with implementation of Option 2 would be the same as those described under Option 1.	No impacts would occur from the baseline activities.

Table 2.6-1 Summary of Environmental Impacts (...continued)

Resource (Applicable EA Section)	Proposed Action Option 1	Proposed Action Option 2	No Action Alternative
Hazardous and Toxic Waste (Section 4.13)	<p>Hazardous and toxic products (e.g., oil, grease, and hydraulic fluid) would be used in the heavy-duty dredging equipment during the proposed dredging. Standard industry practices regarding spill prevention should prevent any impact to the local environment. No impacts from hazardous and/or toxic waste would be expected from the proposed activities.</p> <p>No listed hazardous and/or toxic waste sites are known to occur in the Project Area.</p>	<p>Impacts associated with implementation of Option 2 would be the same as those described under Option 1.</p>	<p>No impacts would occur from the baseline activities.</p>
Socioeconomics (Section 4.14)	<p>Changes in population, housing, and community infrastructure would not occur. Beneficial impacts to employment would occur during the construction period; however, the benefits would be short-term and would not measurably affect the county-wide unemployment rate. The project would generate income to the local economy; however, the amount would be small compared to the county's total income; therefore, beneficial impacts to Hidalgo's economy would be negligible.</p>	<p>Impacts associated with implementation of Option 2 would be the same as those described under Option 1.</p>	<p>No impacts would occur from the baseline activities.</p>
Environmental Justice (Section 4.15)	<p>Data indicate that Hidalgo County has disproportionately high minority and low-income populations; however, land use adjacent to the Project Area is primarily rural and designated a wilderness area. Adverse consequences to disproportionately high minority and low-income populations resulting from construction activities associated would not occur.</p>	<p>Impacts associated with implementation of Option 2 would be the same as those described under Option 1.</p>	<p>No impacts would occur from the baseline activities.</p>

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