

## **MEMORANDUM**

**SUBJECT:** NADBank/BEIF Grant Funding  
Mercedes, Hidalgo County, Texas

**FROM:** John Blevins, Director  
Compliance Assurance and  
Enforcement Division

**TO:** Richard E. Greene  
Regional Administrator

Attached for your signature is the Environmental Assessment, Finding of No Significant Impact (EA/FNSI) package for the proposed awarding of Environmental Protection Agency grant funds to Mercedes, Hidalgo County, Texas, for its wastewater collection and treatment expansion project. The proposed funding will be provided from the Border Environment Infrastructure Fund administered by the North American Development Bank.

This EA is based on the environmental information document prepared for Mercedes by a consultant. No significant adverse environmental impacts associated with the awarding of the grant funds were identified. The EA/FNSI package will be issued for 30-day public notice to solicit comments regarding this decision not to prepare an Environmental Impact Statement (EIS). The decision will become final after the comment period expires and the comments received are addressed.

Attachment

## FINDING OF NO SIGNIFICANT IMPACT

### To Interested Agencies, Officials, Public Groups and Individuals:

The U.S. Environmental Protection Agency, Region 6 (EPA Region 6), has performed an environmental assessment (EA) of the following proposed action in accordance with the guidelines of the Council on Environmental Quality, at 40 Code of Federal Regulations (CFR), Part 1500, and the implementing procedures at 40 CFR Part 6, *Procedures for Implementing the Requirements of the Council on Environmental Quality of the National Environmental Policy Act*.

**Proposed Action:** Possible funding assistance for the proposed wastewater collection and treatment expansion project to serve sixteen colonias located north, east and southeast of Mercedes.

**Applicant:** City of Mercedes, Hidalgo County, Texas

**Background.** The city of Mercedes is located in the Lower Rio Grande Valley, mid-way between Harlingen and McAllen, Texas, just north of the Rio Grande. Mercedes is surrounded by unplanned communities characterized by small lots, substandard housing, substandard septic tanks, cesspools or pit privies, and little or no safe drinking water. These colonia communities have been cited by the Texas Department of Health for health hazard problems resulting from the on-site wastewater treatment systems. Mercedes proposes to extend its wastewater collection and treatment services to the colonias within its extraterritorial jurisdiction consisting of the Capisallo Park Nos. 1 and 2, Elizabeth, V&C, Heidelberg, High Land, Old Rebel Heights Nos. 1 and 2, Olympic, Lorenzana, Connor, Eastland Park, Sunrise, Southern Valley Estates, La Milpa, Chapa, La Mesa, and Los Cerritos through the year 2015. Implementation of the municipal wastewater treatment and public water supply projects within the lower Rio Grande border region are of primary importance in achieving the human and environmental health objectives established by the United States and Mexican governments. Financial assistance is being requested to enable the city of Mercedes to provide adequate wastewater services to current and future residents within the service area.

**Proposed Project.** The permitted average daily flow capacity of the wastewater treatment plant (WWTP) is 2.3 MGD. It currently receives an average daily flow of 1.75 MGD, representing 76 percent of its permitted capacity. The WWTP consists of two parallel treatment trains that share a common lift station, headworks, dechlorination facilities, outfall structure, and sludge drying beds. The first train was constructed in 1977, with a nominal capacity of 1.3 MGD. Train 2 was constructed in 1989, and has a nominal capacity of 1.0 MGD.

The population of the service area is estimated to be 13,500, projected to increase to about 33,334 by the year 2015. Based on the projected population, and an average flow rate of 120 gallons per day per capita, the capacity of the WWTP would have to be expanded to 4.0 MGD to serve the service area through the design year. The proposed expansion project would re-rate the existing 2.3 MGD WWTP to a combined capacity of 3.2 MGD. The 1.3 MGD treatment train would be retrofitted with new floating brush aerators to increase its capacity to 1.5 MGD. The 1.0 MGD train would be increased to a capacity of 1.7 MGD. To increase the total capacity of the WWTP to 4.0 MGD, a conventional biological treatment plant with a capacity of 0.8 MGD would be constructed within the footprint of the existing plant on a 23-acre site. The treated effluent will continue to be discharged into an unnamed drainage ditch that parallels Mile ½ East Road and bisects the plant. This drainage ditch discharges into Arroyo Anacuitas which discharges into the Arroyo Colorado above Tidal Segment No. 2202 of the Nueces-Rio Grande Coastal Basin. Currently, the facility produces Class B sludge that is land-applied offsite under contract. There is a 150-foot buffer zone between the WWTP and residential structures.

**Findings.** The EPA Region 6 has performed an environmental review and assessment of the proposed action pursuant to the project certification process established by the Border Environment Cooperation Commission (BECC) for the financing of projects through the Border Environmental Infrastructure Fund (BEIF). On the basis of the EA, the EPA Region 6 has determined that the authorization for release of the BEIF funds will not constitute an action significantly impacting the quality of the human or natural environment, and that the preparation of an Environmental Impact Statement is not warranted.

The total cost of the proposed expansion is estimated to be \$9,178,950. The city of Mercedes has received grant and loan assistance through the Texas Water Development Board Economically Distressed Areas Program and the Colonias Wastewater Treatment Assistance Program. Mercedes has also received financial assistance through the BECC for preparation of the Engineering Facility Plan which identified the need to expand the WWTP. EPA funds have been provided from the BEIF to assist colonia residents in connecting to the system. The city has also applied for additional BEIF funding for the proposed expansion of the wastewater treatment and collection service. Comments regarding this determination not to prepare an EIS will be accepted during the thirty (30) day comment period following the public notice of this FNSI. All comments will be considered by the EPA prior to taking any administrative action on the release of the grant funds. Address all comments and requests for review of the administrative record supporting this determination to: Office of Planning and Coordination (6EN-XP), U.S. Environmental Protection Agency, 1445 Ross Avenue, Suite 1200, Dallas, Texas 75202-2733, Telephone: (214) 665-8150.

Responsible Official,

Richard E. Greene  
Regional Administrator

**ENVIRONMENTAL ASSESSMENT  
FOR THE  
WASTEWATER TREATMENT AND COLLECTION SYSTEM  
IMPROVEMENT PROJECT  
CITY OF MERCEDES, HIDALGO COUNTY, TEXAS**

**1.0 GENERAL PROJECT INFORMATION.**

**1.1 Purpose and Need for the Proposed Project.** The city of Mercedes is situated in Hidalgo County, in the Lower Rio Grande Valley and is located mid-way between Harlingen and McAllen, Texas, along US 83. The Rio Grande is just to the south and forms the international boundary between the United States and the Republic of Mexico (*Figure 1-1*). The city is surrounded by colonias (unplanned communities characterized by small lots, substandard housing, substandard septic tanks, cesspools or pit privies, and little or no safe drinking water). The Texas Department of Health (TDH) has cited these colonias for health hazard problems resulting from the on-site wastewater treatment systems. Mercedes proposes to extend its wastewater collection and treatment services to an area that includes the colonias within its extraterritorial jurisdiction (ETJ) consisting of the Capisallo Park Nos. 1 and 2, Elizabeth, V&C, Heidelberg, High Land, Old Rebel Heights Nos. 1 and 2, Olympic, Lorenzana, Connor, Eastland Park, Sunrise, Southern Valley Estates, La Milpa, Chapa, La Mesa, and Los Cerritos. Financial assistance is being requested to enable the city of Mercedes to provide adequate wastewater services to current and future residents of the area.

Implementation of the municipal wastewater treatment and public water supply projects within the lower Rio Grande border region are of primary importance in achieving human and environmental health objectives. Long-term regional development mandates that the water and wastewater needs of the area be considered in terms of their impacts on the present infrastructure of the city of Mercedes and the future patterns of urban growth and development. The proposed project supports environmental and human health directives established by the United States and Mexican governments.

The existing wastewater treatment plant (WWTP) consists of two parallel treatment trains and has a permitted average daily flow capacity of 2.3 MGD. Train 1 was constructed in 1977, and consists of an oxidation ditch, clarifier, chlorine contact basin, and sludge drying beds. It has a capacity of 1.3 MGD. Train 2 was constructed in 1989, adjacent to the first train and has a capacity of 1.0 MGD. The two treatment trains share a common lift station, headworks, dechlorination facilities, outfall structure, and sludge drying beds. The WWTP currently receives an average daily flow of 1.75 MGD, which represents 76 percent of its permitted capacity. The Texas Commission on Environmental Quality (TCEQ) requires that plant expansion plans be developed when the actual inflows approach 75 percent of the permitted plant capacity.

**1.2 Proposed Project Description.** The city of Mercedes is proposing to fund the proposed wastewater improvement project through a combination of TWDB grants and loans, BECC funding, and NADBank Border Environment Infrastructure Fund monies. The total cost of construction for proposed wastewater improvements is \$9,178,950.

The proposed service area has a population estimated at 13,500, and is projected to increase to about 33,334 by the year 2015. Based on the projected population, and an average flow rate of 120 gallons per day per capita (gpcd), the capacity of the WWTP would have to be expanded to 4.0 MGD to serve the service area through the design year. The proposed expansion would consist of re-rating the existing 2.3 MGD WWTP to a combined capacity of 3.2 MGD. The 1.3 MGD treatment train would be retrofitted with new floating brush aerators to increase its capacity to 1.50 MGD. The 1.0 MGD train would be increased to a capacity of 1.70 MGD. To increase the total capacity of the WWTP to 4.0 MGD, a conventional biological treatment plant with a capacity of 0.8 MGD would be constructed within the footprint of the existing plant on a 23-acre site located on both sides of Mile ½ East Road at its intersection with Mile 8 North Road.

The wastewater collection system would be extended to serve the service area and would include installation of 12,000 linear feet of gravity sewer and force main (FM) lines, replacement of three lift stations (LS), and rehabilitation of a fourth LS. The existing collection system includes 20 LS equipped with pumps and a network of FMs and gravity lines. A return sludge pump station would be constructed adjacent to the proposed 0.8 mgd treatment plant to recycle return sludge within the plant and convey digested sludge to the drying beds.

The treated effluent will continue to be discharged into an unnamed drainage ditch that parallels Mile ½ East Road and bisects the plant. This drainage ditch discharges into Arroyo Anacuitas which discharges into the Arroyo Colorado above Tidal Segment No. 2202 of the Nueces-Rio Grande Coastal Basin. Currently, the facility produces Class B sludge that is land-applied offsite under contract. There is a 150-foot buffer zone between the WWTP and residential structures.

**1.3 Recommendation.** On the basis of the environmental review and assessment of the proposed action, the EPA Region 6 has determined that the authorization for release of the BEIF funds will not constitute an action significantly impacting the quality of the human or natural environment, and that the preparation of an Environmental Impact Statement (EIS) is not warranted. The total cost of the proposed expansion is estimated to be \$9,178,950.

The city of Mercedes has received grant and loan assistance through the Texas Water Development Board (TWDB) Economically Distressed Areas Program (EDAP) and the Colonias Wastewater Treatment Assistance Program (CWTAAP). Mercedes has also received financial assistance through the Border Environment Cooperation Commission (BECC) for preparation of the Engineering Facility Plan which identified the need to expand the WWTP. EPA funds have been provided from the Border Environmental Infrastructure Fund (BEIF) to assist colonia

residents in connecting to the system. The city has also applied for additional BEIF funding for the proposed expansion of the wastewater treatment and collection service.

## **2.0 ALTERNATIVES**

### **2.1 Alternatives Available to the EPA.**

2.1.1 Approve the Funding for the Project as Proposed. EPA can recommend approval of the grant funding for the proposed purpose.

2.1.2 Funding of a Modified Project. Information received during the EA process could result in the identification of significant adverse impacts that require mitigation through modification of the proposed action. Modification of the project to mitigate the impacts may allow the EPA to accept the project as modified and recommend approval of the grant funding.

2.1.3 No Action. A determination that the project as proposed could result in potentially significant adverse impacts to the environment that cannot be satisfactorily mitigated would preclude a recommendation of approval of the grant funding. Instead, an EIS would be recommended to evaluate the potentially significant impacts. The EIS process includes a scoping meeting to identify critical facts and issues, a Draft EIS, a public comment period on the Draft EIS, a public hearing on the Draft EIS, the Final EIS, a public comment period on the Final EIS, and a Record of Decision.

**2.2 Alternatives Considered by the Applicant.** The alternatives considered were screened with respect to physical and legal constraints, regulatory requirements, cost-effectiveness, and significant primary and secondary environmental impacts over the design life of the project.

2.2.1 No-Action Alternative. The No-Action Alternative was not evaluated in detail because it is not consistent with the purpose and need of the project, and would not comply with TCEQ regulations which require that plant expansion planning be initiated when the actual plant flows approach 75 percent of the permitted capacity. The in-flow has reached 1.75 MGD which represents 76 percent of the permitted plant capacity. As the colonias continue to grow and expand, the lack of an adequate wastewater system would have a greater impact on infrastructure, erode land values and the quality of life, and impede the long-range development goals of the city and the environmental and human health protection goals developed by the governments of the United States and Mexico.

2.2.2 On-site or Individual Systems Alternative. Under EDAP regulations, the TWDB is required to determine “that it is not feasible in the area covered by the application to use septic tanks as a method for providing sewer service” before funds are provided for centralized wastewater treatment facilities. Since a centralized wastewater treatment plant and collection system currently provides wastewater service to the city of Mercedes, the provision of on-site or individual septic tank systems would not meet project design criteria and are not considered further. Addressing the problems through individual or cluster on-site wastewater treatment systems would allow the adverse health and safety conditions to continue. There would be an

increase in the potential for surface water and groundwater contamination, and biotic resources would be adversely impacted from the seepage and overflow of the septic systems.

2.2.3 Wastewater Treatment Alternatives. Treatment alternatives considered included processes such as facultative lagoons, submerged flow, constructed wetlands, and extended aeration systems for each colonia and various clusters of colonias. These system combinations were found to be less cost effective, but would require more land and would likely entail more environmental impacts because of the more numerous discharges at varying levels of treatment. The two potential wastewater treatment alternatives considered during the engineering feasibility analysis would involve re-rating the existing trains to a combined capacity of 3.2 MGD to reduce the size of the expansion train to 0.8 MGD and achieve the proposed 4.0 MGD average daily flow capacity. For both alternatives, the brush aerators at Train 1 and the equipment located within the concrete clarifier would be replaced. The existing basins at the plant would be re-rated for an average daily flow of 1.5 MGD. Train 2 would be re-rated to achieve a capacity of 1.7 MGD with the existing aeration and clarification equipment remaining in use.

*Wastewater Treatment Alternative 1.* This alternative would construct a 0.8 MGD conventional biological treatment plant requiring significantly less space than the existing oxidation ditches. It could be easily expanded to meet future needs, and would allow sufficient on-site space to continue sludge processing with conventional sand drying beds. The disadvantages of this alternative would be the operation and maintenance of three separate treatment trains and the required filling of the holding ponds to create space.

*Wastewater Treatment Alternative 2.* This alternative would construct a 0.8 MGD Aero-Mod© Treatment System with modular aeration basins and clarifiers. Under this alternative, all processes would be driven by air, reducing the number of mechanical systems required. The disadvantages of this alternative would be the inefficient airlift pumps and the significantly higher operation costs due to the higher energy demands.

2.2.4 Wastewater Collection Systems Considered. Wastewater collection systems considered included conventional gravity sewers and small diameter gravity systems which require septic tanks and function best when there is some slope. These systems were removed from consideration due to the nearly level terrain and the probability that many of the existing septic tanks would need to be replaced or installed.

2.2.5 Recommended Wastewater Treatment Alternative. The recommended alternative is *Wastewater Treatment Alternative 1.* It would provide wastewater service to the service area by expansion of the conventional collection system. This alternative would re-rate the existing WWTP treatment trains to a combined capacity of 3.2 MGD, and construct a 0.8 MGD conventional biological treatment plant for a total WWTP capacity of 4.0 MGD. The proposed expansion would install or construct 200 linear feet (lf) of 18-inch gravity sanitary sewer lines, 6,100 lf of 12-inch FMs, and 5,700 lf of 6-inch FMs, rehabilitate one LS and replace three LS.

## **2.3 Wastewater/Sludge Disposal Alternatives.**

2.3.1 Land Application Alternative. Land application as a mode of wastewater management is not a feasible alternative and was dismissed from consideration early in the engineering evaluation process due to the urban nature of the project and presence of unsuitable soils.

2.3.2 Wastewater or Solids Reuse Alternatives. Reuse alternatives for the effluent and waste solids from the WWTP was not considered due to the minimal increase in the amount of discharge, small volume of sludge expected to be produced by the proposed project, and the success of existing wastewater and solids reuse procedures.

2.3.3 Sludge Disposal Alternatives. Sludge is treated to Class B requirements in accordance with TCEQ Chapter 312 regulations and EPA 503 regulations. Class B pathogen and vector attraction reduction requirements are achieved by aerobic digestion. In general, sludge can either be disposed of at a licensed sanitary landfill or can be used for agricultural land application. The existing permit requires that disposal occur only at a TCEQ registered or permitted land application site, commercial land application site, or co-disposal landfill. The increase in the amount of sludge generated as a result of the proposed project is expected to be insignificant. Mercedes currently contracts with a private hauler for sludge removal and land application and alternative sludge management methods were not considered.

## **3.0 AFFECTED ENVIRONMENT AND PREDICTED ENVIRONMENTAL IMPACTS**

### **3.1 Land Resources.**

3.1.1 Land Use. Land use in the proposed project area consists primarily of single-family residential, agricultural and undeveloped pasture land, with some commercial, manufacturing and public facilities, irrigation and drainage ditches, resacas, and a flood control levee. The expansion of the WWTP would occur within the existing property boundaries, and the 150-foot buffer zone would be maintained. Line work would occur within existing roadway right-of-ways (ROWs), wherever possible. FM-A would be constructed within the existing ROW for the Hidalgo and Cameron County Irrigation District drainage and irrigation structures, and would cross the Texas Department of Transportation (TxDOT) ROW for US Expressway 83. Coordination with both TxDOT and the Hidalgo-Cameron County Irrigation District has been initiated to determine permit requirements. FM-B would be constructed along Mile 7 North Road within existing city ROW, and would cross the International Boundary and Water Commission (IBWC) North Floodway. A license and coordination with the IBWC would be needed to cross the floodway. FM-C would be installed along an existing city ROW.

Three lift stations would be decommissioned and retired as part of the proposed project. The replacement of LS-1 would be constructed adjacent to the existing lift station on the site of the former city WWTP on land owned by the city of Mercedes. The replacement of LS-4 would be constructed within the boundaries of the existing WWTP, and the replacement LS-16 would be constructed adjacent to the current lift station on land currently used for a parking lot, beyond the IBWC ROW. The rehabilitation of LS-18 would occur at the existing location and would

require no new land. All proposed LS construction would occur on less than one acre of land. No new land would be acquired for the WWTP expansion and no residences would be relocated as a result of the proposed project. There would be no expected land use changes in the area as a result of the proposed project, although increases in population have resulted in additional conversion of agricultural land to urban land uses.

3.1.2 Geology. Mercedes is located in the Lower Rio Grande Valley (LRGV) in extreme south Texas, within the Coastal Plain of Texas. The area is underlain by sediments deposited during two Pleistocene fluvial and deltaic episodes. The older depositional systems, the Lissie fluvial Beaumont delta systems, were deposited more than 100,000 years ago. Structurally, the project area is located within the Rio Grande Embayment. Surface faulting is related to the seaward progression of sediments over an unstable clay substrate. These surface faults are known as growth faults or gravity faults and generally parallel the coastline. There is a mapped growth fault that parallels the coastline in the vicinity of the project area.

3.1.3 Topography. The city of Mercedes is located within the Rio Grande delta, north of the Arroyo Colorado and west of the Arroyo Anacuitas. The North Floodway of the Arroyo Colorado is located along the western portion of the project area. The delta is a broad, relatively flat area with the exception of areas in the vicinity of the extensive drainage and irrigation systems defined by levees and drainage channels. The major topographic features are the Rio Grande and numerous oxbow channels, although the northern portion of the study area contains some low hills, remnants of a Holocene stabilized dune system. The topography has been significantly altered by leveling needed to allow for irrigation. In the project area, land surface elevations range from 60 to 75 feet above sea level.

Construction of the proposed project would result in short-term, negligible impacts to the topography from trenching, site grading, and construction activities. Disturbed areas would be restored to their original pre-construction state to the extent possible. Adjustment of existing waterlines may be necessary where there is difficulty installing new wastewater collection lines within the roadway ROW and maintain the required separation between lines.

3.1.4 Soils. There are twenty-one soil series mapped within the ETJ of the city of Mercedes. In the proposed project area, there is a mosaic patchwork of Hidalgo-Raymondville and Harlingen soil series, characterized by deep sandy clay loams and calcareous clays that are well drained. With the exception of some small areas associated with the remnant dune system, the Natural Resource Conservation Service (NRCS) has classified soils in the project area as having moderate to severe limitations for septic tank use. Limitations on the use of soils for septic tank absorption fields are characterized by the NRCS as slight, moderate, and severe. Classification as severe indicates that soil properties or site features are so unfavorable or so difficult to overcome that special design, significant increases in construction costs, and possibly increased maintenance are required.

3.1.5 Prime and Unique Agricultural Land. The proposed project would have no impact on prime farmland soils. The Raymondville clay loam and Hidalgo sandy clay loam soils in the proposed project area are considered prime farmland<sup>1</sup> when irrigated. FM-B crosses Hidalgo fine sandy loam, Hidalgo sandy clay loam, Raymondville clay loam, and Hebbronville sandy loam soils. Prime farmland soils are protected under the Farmlands Protection Policy Act (FPPA) to minimize the extent to which federal programs contribute to the unnecessary and irreversible conversion of prime farmland. However, lands committed to urban development or water storage, and lands identified as ‘urbanized area’ on Census Bureau maps are not excluded from the FPPA. Soils affected by the proposed project are considered urban land and are, therefore, not considered prime farmland and coordination with the NRCS is not required.

## 3.2 Water Resources.

3.2.1 Surface Water. The Rio Grande and the Arroyo Colorado are the major fluvial influences in south Texas. The Arroyo Colorado is part of the IBWC flood control system and includes the Main Floodway and North Floodway. The project area is located north of the Arroyo Colorado and west of the Arroyo Anacuitas. The Arroyo Colorado extends 90 miles from Mission, Texas, to the Laguna Madre, and is the major source of fresh water to the lower Laguna Madre, an economically and ecologically important resource to the region. The Main Floodway extends through the project area on the west side of Mercedes. The Llano Grande Lake and the Campanulas are arroyos and floodplain lakes present in the project area.

Flow in the Arroyo Colorado is mostly wastewater discharge, irrigation return flows, storm water runoff, and base flow from shallow groundwater. Rio Grande water is only diverted into the Arroyo Colorado during major flood events. The Mercedes WWTP discharges to an unnamed drainage ditch to the Arroyo Anacuitas, to Segment 2202-03 of the Arroyo Colorado Above Tidal, and eventually into Segment 2491 of the Laguna Madre Estuary. The draft Texas 303(d) List, issued by the TCEQ on January 15, 2004, lists Segment 2202 as an impaired water body not meeting the applicable water quality standards or is threatened for one or more designated uses by one or more pollutants. In 2000, the TCEQ listed 86 permitted domestic outfalls and 6 industrial outfalls for Segment 2202.

The proposed improvement of the wastewater systems will result in improved quality of effluent discharge. The expansion and modification of municipal infrastructure would help ensure that area growth is supported and surface water quality is protected through the 2015 design year. Watercourses near the construction sites would likely be temporarily affected by siltation and sedimentation as a result of the construction phase of the proposed project. Erosion and sediment controls, including interim and permanent stabilization practices and the possible use of silt fences, hay bales, check dams, and temporary vegetation or straw cover would minimize impacts to surface water in the area and would be kept in place until native vegetation is re-established.

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<sup>1</sup>The NRCS defines prime farmland soils as soils that are best suited for producing food, feed, forage, fiber, and oilseed crops because of their quality, growing season, and moisture supply.

Mercedes operates a drinking water treatment plant (WTP) with a capacity of 4.5 MGD and does not require modification to meet the demands of this project. However, an additional 34 acre-feet (ac-ft) of surface water rights will have to be acquired as part of the project, of which 24 ac-ft will be for the existing population of the colonias. Raw water for the WTP is obtained from the Rio Grande under water right permit number 823-000, and from the Hidalgo and Cameron Counties Irrigation District No. 9, under permit number 812-002.

3.2.2 Groundwater. The LRGV aquifer system consists of the Goliad Sand, the Lissie Formation, the Beaumont Clay, and recent alluvial deposits. The recent deposits, the Beaumont and Lissie Formations, comprise the Chicot Aquifer, which yields moderate to large quantities of fresh to moderately saline water. On a regional scale, the complex vertical and horizontal interbedded nature of sand and gravel units cause the entire sequence to act as one aquifer. As a result, within a narrow band along the Rio Grande in Starr and Hidalgo Counties, the entire water-bearing sequence, extending from the surface to 400 to 500 feet below surface, is considered one aquifer unit known as the LRGV aquifer.

The LRGV aquifer consists of clay, silt, sand, and gravel of fluvial or deltaic origin. Generally useable water is restricted to the upper 500 feet of the aquifer. No fresh water containing less than 3,000 milligrams per liter (mg/l) of dissolved solids is known to occur at depths greater than 300 feet in Hidalgo County. In the Mercedes area, the shallow water-producing zone, within 75 feet of the ground surface, contains extremely poor quality water with a total dissolved solid content of 30,000 mg/l. Recharge to this aquifer is from the percolation of precipitation and irrigation water and seepage from canals, channels, ditches, drains, resacas, and the Rio Grande. Water normally moves from the Rio Grande to the aquifer, except when water levels drop.

### **3.3 Air Quality.**

3.3.1 Climatic Elements. The climate in the Mercedes area is subtropical and subhumid, and influenced by the Gulf of Mexico. Summers are hot and humid with occasional heavy rains late in the season. The average precipitation is 25.5 inches per year, with peaks in September and secondary peaks in May and June. The average temperature is 74 degrees Fahrenheit and average relative humidity is 75.2 percent. The prevailing winds in the region are from the south and southeast. Freezing temperatures are unusual and the growing season lasts 341 days, but freezes capable of damaging the citrus orchards have occurred twice during the 1980's. The EPA has established primary and secondary National Ambient Air Quality Standards (NAAQS) for the six criteria pollutants carbon monoxide, ozone, nitrogen dioxide, lead, particulate matter 10 and 2.5 micrometers or less in diameter, and sulfur dioxide. Hidalgo County is currently an attainment area for all NAAQS.

#### 3.3.2 Ambient Air Quality.

*Fugitive Dust Emissions*. Some streets within the colonias are unpaved, and dust and mud could become problems. During construction there would be a slight, temporary increase in emissions from the construction equipment and fugitive dust. During operation of the facility, dust may be

generated from grounds maintenance. Dust will be controlled by periodic sprinkling of the disturbed areas. Erosion and sedimentation of area waterways will be controlled by temporary settling pits, dikes and berms. Prompt backfilling of trenches and protecting soil stockpiles will also serve to reduce any potential problems. No secondary effects on air quality would be expected as a result of the proposed project. Incineration is not part of the proposed action.

*Odor.* The four LS and increase capacity of the existing WWTP may periodically have a slight odor during periodic maintenance or operation. The prevailing wind direction blows in the direction of an RV park near LS-18, an adjacent trailer park near the WWTP and LS 4, the IBWC office and agricultural land near LS-16, and the Hidalgo and Cameron County Irrigation District canal and downtown Mercedes near LS-1. Impacts on area residents would not be expected to be significant.

*Noise.* Noise will be generated during construction through the use of trenchers, graders, backhoes, cranes, and other construction equipment and machinery that would increase the ambient noise levels. Construction activities will be confined to standard daylight operating hours in order to minimize disturbance of area residents, although wastewater line tie-ins would be performed during evening hours to capitalize on typical low flow conditions. These noise impacts will be temporary and short-lived.

### **3.4 Biotic Resources.**

3.4.1 Flora. Hidalgo County is in the Matamorán District of the Tamaulipan Biotic Province. Thorny brush is the predominant vegetation type of Tamaulipan province. In Hidalgo County, brushlands are more luxuriant and are characterized by the predominance of several species of plants and animals that decrease in abundance northward. Vegetation includes plants with western desert, northern coastal, and tropical affinities. Estimates of the number of native plant species that exist range from 170 to 265 species. Undeveloped areas contain a mixture of mesquite, acacia, and prickly pear. Surrounding land use, where not otherwise urban, is irrigated agriculture. The proposed project area has been converted to agricultural use such as orchards or pastureland. Native vegetation has largely been removed and replaced by pasture, row crops and citrus orchards.

The vegetation in its native state was defined as mid-delta thorn forest, a mesquite-granjeno association mixed with various brush species, including Texas ebony, anacua, and brasil. Little of this is present in the project area which is dominated by agricultural operations. Species commonly noted during the site visit included silver leaf nightshade (*Solanum eleagnifolium*), mesquite (*Prosopis glandulosa*), Texas prickly pear (*Opuntia engelmannii*), saltcedar (*Tamarix aphylla*), sabal palm (*Sabal texana*), huisache (*Acacia farnesiana*), blackbrush acacia (*Acacia rigidula*), and live oak (*Quercus virginiana*). Species commonly noted adjacent to irrigation and drainage ditches include retama (*Parkinsonia aculeate*), giant reed (*Arundo donax*), black willow (*Salix nigra*), joint flatsedge (*Cyperus articulatus*), and various rush species (*Juncus* spp.). The remainder of the vegetation observed consisted of ornamental grasses such as Bermuda grass (*Cynodon dactylon*) and crops such as milo (*Sorghum bicolor*).

Short-term impacts from the disposal of soil and vegetation spoil would be negligible. The proposed lines would be installed primarily in existing ROWs that lack significant vegetation. The proposed expansion of the WWTP will occur on the existing property and would only require the removal of herbaceous ground cover, such as Bermuda grass. The removal of native thornscrub and dense brush habitat will not occur. Additionally, in accordance with the U.S. Fish and Wildlife Service (FWS), clearing of vegetation would not occur during the nesting season for migratory birds. These impacts are expected to be temporary since disturbed areas would be allowed to naturally re-vegetate following installation. Construction would not increase fragmentation of native vegetation within the region. The impacted habitat is located in a previously disturbed urban setting. The direct, short-term impact to native vegetation would be negligible. The FWS has recommended that future landscaping be limited to seeding and replacing plants with native species, where possible. The FWS also recommends native trees, shrubs, and herbaceous plants should be drought-tolerant adaptable plants. Herbicides, defoliant and on-site burning will not be used to clear the land.

3.4.2 Fauna. The FWS recognizes 11 biotic communities in the LRGV. The combination of climate, vegetation, and associated wildlife species makes this a unique area. The variety of habitat types in the area results in a diverse vertebrate fauna, including species of subtropical, southwestern desert, prairie, coastal marshlands, eastern forest, and marine affinities. About 700 vertebrate species have been found in the Hidalgo County area including some not found in any other region of the United States, namely the ocelot, jaguarundi, blue spiny lizard, olivaceous cormorant, red-billed pigeon, and black-bellied whistling-duck.

Sixty-one species of mammals, 36 species of snakes, 19 species of lizards, 2 land turtles, 19 frogs and toads, 2 tortoises, and 3 newts and salamanders occur within this region. There are more than 350 bird species that occur in the LRGV. Twenty-one bird species in Mexico and Central America reach the northern limits of their range in the LRGV (Jahrsdoerfer 1988). Mammals include the jaguarundi (*Felis yaguarundi*), Coue's rice rat (*Oryzomys couesi aquaticus*), the Mexican spiny pocket mouse (*Liomys irroratus*), and the Gulf Coast hog-nosed skunk (*Conepatus leuconotus texensis*). Snakes unique to this region include the speckled racer (*Drymobius margaritiferus*), the northern cat eye snake (*Leptodeira septentrionalis*), the black-striped snake (*Coniophanes imperialis*), and the Mexican hooknose snake (*Ficimia streckeri*). Lizard species within a few miles from the Rio Grande include the mesquite lizard (*Sceloporus grammicus microlepidotus*), the blue spiny lizard (*Sceloporus cyanogenys*), and the reticulate collared lizard (*Crotaphytus reticulatus*). One species of land turtle, the Texas tortoise (*Gopherus berlandieri*), occurs only in the South Texas brush country region. The newts and salamanders that occur in this region include the South Texas siren (*Siren* sp.) and the black-spotted newt (*Notophthalmus meridionalis*). Anurans (toads and frogs) include the Mexican burrowing toad (*Rhynophrynus dorsalis*), the giant toad (*Bufo marinus*), the Mexican treefrog (*Smilisca baudinii*), and the white-lipped frog (*Leptodactylus fragilis*) (Blair 1950; Dixon 1987).

Because of the urban and semi-urban environment of the project area, wildlife would be typical of that found within the city of Mercedes. Mammals such as rats, mice, ground squirrels, and various reptiles and amphibians may be present. Resident and migratory bird species, particularly passerine species, can be expected in the vicinity. Birds were the only species of

wildlife observed during a site reconnaissance (windshield) survey performed in January 2004. Birds commonly noted during the reconnaissance included the common grackle (*Quiscalus quiscula*), mourning dove (*Zenaida macroura*), and northern mockingbird (*Mimus polyglottos*). The American white pelican (*Pelecanus occidentalis*) was observed near the WWTP facilities. No species of concern were noted during the site reconnaissance.

Wildlife refuges in the region include Las Palomas Wildlife Management Area (WMA)-Adams and MacWhorter Units located adjacent to and north of the Arroyo Colorado. The Las Palomas WMA has a total of 3,311 acres of the land purchased to preserve native brush habitat, some farmland and wetlands. It is comprised of eighteen units located in Hidalgo and Presidio counties and is operated by the Texas Parks and Wildlife Department (TPWD). The Adams Unit is approximately 0.8 miles west-southwest of the FM-C and LS-16, and the MacWhorter Unit is approximately 2.6 miles west-southwest of the FM-C and LS-16. Parks and Natural Areas located within the project area include Llano Grande Lake Golf Course, Mercedes Fairgrounds, and Melton Park. The Mercedes Fairgrounds and Melton Park are located directly adjacent to FM-A; the Llano Grande Golf Course is located directly adjacent to FM-C.

There are no state or national parks, preserves or federal refuges located within the project area. Birding Site 54 is located approximately 1.5 miles west-southwest from FM-C and LS-16, and is within the Estero Llano Grande Loop of the Lower Coastal Birding Trail. Birding Site 54 is home to the World Birding Center (WBC), a preservation effort of the TPWD, the FWS, and nine valley communities. The WBC is a network of nine sites along 120 miles of river road from South Padre Island west to Roma.

Direct effect on wildlife and recreational areas would not be expected because the proposed construction sites are at a distance from these recreational areas. Minor LS construction and installation of sanitary sewer lines along roadway ROWs are not expected to impact these recreational areas. Disruptive noise and movement of construction equipment may temporarily displace wildlife species in the vicinity of construction activities. These disruptions will be temporary and wildlife will be expected to return to the area after construction activities are completed and the area is re-vegetated. No negative long-term impacts to resident or migratory wildlife species or the human environment are anticipated.

3.4.3 Aquatic Life. Aquatic life would benefit from the increased capacity of the WWTP and the connection of area colonias to the system through the reduction of pollutants entering area water resources. Also, the proposed project would not significantly impact these resources by restriction of construction to previously disturbed areas. The four LS would be equipped with back-up electrical systems to prevent by-passes during power failures, and submerged effluent pipes would be screened to prevent entrance and injury to waterfowl.

3.4.4 Threatened and Endangered Species. The TPWD has jurisdiction over species on the State list of threatened and endangered species which includes 37 mammals, birds, reptiles, amphibians, fish and plants. The FWS has jurisdiction over species that are federally listed as threatened or endangered. Seven federally listed proposed, threatened or endangered species potentially occur in Hidalgo County. These include the northern aplomado falcon (*Falco*

*femorialis septentrionalis*), the interior least tern (*Sterna antillarum athalassos*), jaguarundi (*Herpailurus yaguarondi*), ocelot (*Leopardus pardalis*), the star cactus (*Astrophytum asterias*), Texas Ayaenia (*Ayenia limitaris*) and Walker's manioc (*Manihot walkerae*). The northern aplomado falcon and the interior least tern may be present in the region, but not expected to consistently use habitats within the project area.

Critical habitat<sup>2</sup> for the threatened and endangered animal species within the proposed project area has not been designated. The dense thorn scrub habitat prevalent in extreme south Texas represents the historic and current range of both the jaguarundi and the ocelot. Ocelots tend to prefer the cover of dense thickets while the jaguarundi may tolerate interspersed cleared areas. The lack of vegetative cover, agriculture, and fruit trees in the project and surrounding residential and urban areas are factors limiting the possibility of ocelot or jaguarundi from occurring. The endangered Walker's manioc is known to occur only in Hidalgo County and is represented by one individual plant, not located in the project area. There are no known occurrences of star cactus, Texas ayaenia, or South Texas ambrosia (*Ambrosia cheiranthifolia*) in the project area. The speckled racer (*Drymobius margaritiferus*) is listed by TPWD as a threatened species for Hidalgo County and has been documented within 1.5 miles of the project route.

The FWS concurs that Federally listed species are not likely to be impacted by the proposed project. In accordance with the Migratory Bird Treaty Act, any vegetation disturbances in trees with nests or other suitable habitat should be avoided especially in March-August. If vegetation disturbance is required for habitat that could be nesting areas, the area should be surveyed first for nesting birds. See the TPWD and FWS response letters in Section 5.0.

### **3.5 Floodplain and Wetland Protection.**

3.5.1 Floodplain Management. Floodplains within the project area are generally restricted to the Rio Grande and the floodway control structures and irrigation and drainage ditches. There are no floodplain or jurisdictional wetland resources within the WWTP site except for two areas which are considered man-made and not naturally occurring. Collector lines from the colonias would cross several floodplain areas, but none of the colonias are within the 100-year floodplain. None of the proposed lift station replacements or rehabilitations, and none of the improvements at the WWTP would be within the 100-year floodplain.

The IBWC flood control project consists of reservoirs, dams, levees, floodways, and flow diversion structures, and includes the North Floodway. The three FMs would cross the 100-year floodplain. FM-B, associated with LS-18, would cross the 100-year floodplain east of Mile 2 West Road and north of US 83, and the North Floodway. FM-A would be located within the Hidalgo and Cameron County Irrigation District easement and extend south from the northern city limit, crossing US 83. The existing LS-16 and a six-inch FM are within the IBWC ROW.

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<sup>2</sup>As defined in the Endangered Species Act of 1973, as amended, includes those specific areas within the current or historic geographical range of a species proposed for listing on which are found those physical or biological features: (1) deemed essential to the conservation of the species; and (2), that may require special management considerations or protection.

The replacement LS would be located outside the ROW, but the FM would continue to be used. The IBWC would require licensing for the installation and operation of the proposed FM-A and FM-B. The FM-C is outside the Lower Rio Grande Flood Control Program (LRGFCP).

There is no practicable alternative to installation or construction of "necessary and integral" wastewater collection system lines, FMs, and lift stations that cross or occur within the 100-year floodplain, various elevated drainage ditches, or the North Floodway (Arroyo Colorado) of the LRGFCP. Construction or installation of lines adjacent to or within jurisdictional waters of the United States must be coordinated with the U.S. Army Corps of Engineers (COE). The COE has reviewed the proposed project and determined that it will not impact areas subject to their jurisdiction and no permit will be required. No dredging will occur in area surface water bodies, although incidental discharges of dredged or fill material may occur and would be authorized by the COE under Nationwide Permit (NWP) 12, provided that the site is restored to pre-existing conditions. Hidalgo County and the city of Mercedes participate in the National Flood Insurance Program and have both adopted floodplain protection regulations. The Director of Planning is the Floodplain Administrator for the city of Mercedes and has approval authority for projects affecting the floodplains within the city.

3.5.2 Wetlands Protection. The FWS National Wetlands Inventory (NWI) has mapped the canals and ditches associated with the LRGFCP as R4SBKCX (riverine, intermittent, streambed, artificially flooded, saturated, seasonally flooded and excavated wetlands). According to NWI map 26097-B8 for the area, published in 2000, wetlands are present along the banks of drainage and irrigation canals within the project area. The WWTP encompasses two areas categorized as palustrine, unconsolidated bottom, artificially flooded, diked/impounded (PUBKh). FM-A is immediately adjacent to the FM 491 ROW and an irrigation canal area categorized as riverine, lower perennial, unconsolidated bottom, permanently flooded, excavated (R2UBHx). Both of the wetland categories are man-made. All other FMs are located in areas categorized as upland and all proposed LS replacements and rehabilitations are on areas categorized as upland. The city of Mercedes will avoid and minimize impacts to wetlands and other waters of the U.S. as required by COE Section 404 or Section 10 permits. During the rainy season, levees of the LRGFCP cannot be open cut between the months of June and November.

**3.6 Cultural Resources.** The National Register of Historic Places (NRHP) lists sixteen sites in Mercedes and Hidalgo counties that are considered historic resources. None of these sites are located in the vicinity of the proposed project area. An archeological background search was performed by SWCA Environmental Consultants in March 2004, for any previously recorded surveys and historic or prehistoric archaeological sites located near the project area. The search included review of site files and maps at the Texas Archeological Research Laboratory (TARL) and the Texas Historic Sites Atlas online database of the Texas Historical Commission. In addition to identifying recorded archaeological sites, the review included State Archaeological Landmarks (SALs), Official Texas Historical Markers, Registered Texas Historic Landmarks, cemeteries, and local neighborhood surveys.

Except for the survey of the LS-16 area and the North Floodway area in the vicinity of Llano Grande Lake conducted by the IBWC in 1998, the project area has not been surveyed for

archaeological resources. No archaeological sites are recorded in this area. One isolated find is recorded on the east side of the North Floodway, presumably found during the 1998 survey, but no information is available regarding this artifact. Another survey was performed approximately 2.5 miles west of LS-16, and one recorded site is noted (41HG170). This site is not in the project area. Another archaeological-recorded site is near the project area, at the confluence of the Arroyo Colorado and Arroyo Anacuitas. No information is available regarding this site.

No SALs were determined to be within one mile of the project area, but several historic markers are located within one mile of the project area. These include the markers for the 1st North Dakota Infantry (Marker No. 1156), Hidalgo County Bank and Trust Company (Marker No. 2469), Immanuel Lutheran Cemetery (Marker No. 2621), Mercedes City Hall (Marker No. 3342), and American Rio Grande Land and Irrigation System (Marker No. 5285). The Mercedes City Hall is also recorded as a Texas Historic Landmark.

The USGS map revealed several cemeteries located within or adjacent to the project area. The Anacuitas (Wild Olive Tree) cemetery is located directly adjacent to FM-A. In the 1850s, the Anacuitas Ranch owned by Ramon and Manuel Cavazos covered much of what is known today as the city of Mercedes (Handbook of Texas 2004). There are three other historic cemeteries, Emmanuel Cemetery (Marker No. 2621), Our Lady of Mercy Cemetery and Cemeterio Bautista (*Figure 1-1*) in the project area located at the eastern end of FM-B.

The Project Area is urban in nature and cultural or historic resources would not be expected along existing roadway easements including areas of the proposed sewer line installation or LS. The proposed project would occur within existing ROWs where previous development and soil disturbance has occurred. The THC has been contacted concerning the potential for cultural and historical resources and has agreed to consult with the TWDB and the IBWC after the TWDB has conducted an assessment of potential cultural resources within the project area. Cultural resources discovered during construction of the proposed project will be protected from further disturbance, and the State Historic Preservation Officer will be afforded the opportunity to evaluate the site in accordance with the regulations of the Advisory Council on Historic Preservation (36 CFR Part 800) prior to taking any action that would affect the cultural resources.

### 3.7 Socio-economics and Environmental Justice.

3.7.1 Pursuant to Executive Order 12898, a basic Environmental Justice<sup>3</sup> (EJ) analysis was performed utilizing the EJ Index<sup>4</sup> to assess potential disproportionately high and adverse effects of the proposed project on minority and low income communities. The EJ study was based on three criteria: (1) whether the community currently suffers, or has historically suffered, from environmental and health risks or hazards, (2) whether a potential for disproportionate risk exists, and (3) whether the community has been sufficiently involved in the decision-making process.

The EJ analysis uses a comparison of (1) the percentage of minority people, (2) the percentage of economically stressed households earning less than \$20,000 a year, and (3) the population within a one-half and four mile radius of the site in comparison with state-wide percentages. The index for the one square mile area around the proposed project was calculated at "48", and the index for the 50 square mile area around the facility was calculated at "36". A high EJ indicator, coupled with the beneficial nature of the environmental impacts associated with the project, in this case serves to give the project high priority and makes it a prime target for assistance.

The total population for the service area which includes the city of Mercedes and the ETJ in 2004 was approximately 13,500 people, projected to increase to 33,334 by the design year 2015. In 1990, Hidalgo County had a total population of 383,545, with 84 percent of that population being of Hispanic descent. The median household income of Hidalgo County residents is \$16,703, roughly 60 percent of the median income of \$27,016 reported for the state of Texas. Approximately 159,216 people in Hidalgo County were considered to be living below the poverty level. From 1990 to 1996, the unemployment rate in Hidalgo County declined from 22.4 percent to 19 percent. For the colonias surveyed, the average household size is 4.05 persons and the average annual household income is \$13,269, well below the U.S. Department of Health and Human Service's 2004 poverty threshold of \$18,850 and the U.S. Census Bureau's 1999 poverty threshold of \$17,029, for a family of four. In comparison, the average persons household size in the city of Mercedes is 3.60 persons and the median 1999 annual household income was \$25,339.

3.7.2 Socio-economic. The social and economic impacts of the project would primarily affect the finances and the socioeconomic conditions of the residents. The implementation of the water

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<sup>3</sup> The EPA defines environmental justice as conveyed by the Executive Order, as the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies. The goal of fair treatment is not to shift risks among populations, but to identify potential disproportionately high and adverse human health and environmental effects on minority populations and low income populations and identify alternatives to mitigate those impacts.

<sup>4</sup> The EPA Region 6 EJ Index Methodology defines demographic criteria and applies basic principles of science to evaluate the potential impacts on minority and low-income communities. The methodology uses Geographical Information System maps, U.S. Census demographic data, and a mathematical formula to analyze one square mile and 50 square mile geographic areas around a project site. The index indicators range from 0, where the factors affecting minorities are considered to be in proportion when compared to the state average, to 100, where the factors are considered to be greatly disproportionate when compared to the state average.

and wastewater projects will result in an increased cost to area residents by way of the tie-in fees and the monthly water and sewer bills. Some type or degree of financial assistance will be required to enable area residents to benefit from the project. The financial impact of the project would be limited to the payment of additional rates for wastewater service. User charges, taxes, tap and connection fees, and other economic costs such as the cost of debt retirement would be minimized to the maximum extent possible. The typical bill for monthly wastewater treatment for each household would be \$21.60 per month.

No home, business or public facility would be displaced as a result of the implementation of the proposed project. In accordance with Executive Order 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations*, potential disproportionately high and adverse human health, or environmental effects of the proposed project on minority and low-income populations have been assessed. Although a high percentage of the city of Mercedes is classified as minority or low-income, there would be no disproportionate adverse impacts to minority or low-income populations as a result of the proposed project. The entire population of the city of Mercedes and the ETJ would benefit from the proposed wastewater treatment system improvements. Due to the beneficial nature of this project, there will be no significant adverse impacts to minority or low income communities as a result of the proposed project.

**3.7.3 Public Service.** Border communities are among the poorest in the United States and affected by substandard environmental and health conditions. The implementation of wastewater and water quality improvements and services would enhance the quality of life for area residents. The proposed project may indirectly increase the demand for public services, increase property values resulting in potential increases in property taxes. The labor force of the Mercedes area may experience a short-term increase in available, non-skilled laborer job opportunities and would be beneficially affected by the project.

**3.7.4 Traffic.** The proposed project includes the installation of FM-A beneath US 83. The utility line will be bored under the expressway and should not cause traffic delays or congestion. Ingress and egress will be maintained at all times during construction and will comply with the requirements of State and federal agencies. Traffic and pedestrian safety will be provided for by prompt backfilling and the use of barricades and warning lights during construction.

### **3.8 Other Environmental Considerations.**

**3.8.1 Cumulative Impacts.** There are no other programs or projects currently underway or planned for construction that may impact or be impacted by the proposed project. There are several other water and wastewater planned in the general region of Hidalgo County intended to address health and safety issues associated with colonias. These actions will have a positive effect on the public health and services of receiving communities and the region.

**3.8.2 Coastal Zone.** Under federal law, federal agency activities and actions affecting the Texas coastal zone must be consistent with the Coastal Management Program (CMP). The public has the opportunity to comment on the consistency of proposed activities in the coastal zone

undertaken or authorized by federal agencies. The project area and the proposed WWTP system improvements are not located in the coastal zone and, therefore, the proposed project does not require a consistency review.

3.8.3 Unavoidable Adverse Effects. Minimal dust, noise, and traffic impacts may occur during construction. Some water quality degradation may result from the secondary growth. There may be an increase in development in the city of Mercedes and the surrounding areas which would be expected to be consistent with predicted and existing growth patterns. Pollutants such as oil, grease, fecal coliform, nutrients, toxic chemicals, metals, sediment, and pesticides may enter receiving waters as a result of secondary development. Population and land use changes from secondary development are expected to have minimal impacts on air quality. No secondary development will take place within the 100-year floodplain because Hidalgo County has a floodplain management program.

No significant adverse impacts on natural resources, water, wastewater, and other community infrastructure such as public schools, emergency medical care, or public safety, recreation or transportation are expected to result from the direct, secondary, or cumulative effects of the operation of the facility. The adverse impacts of trenching to install FMs and gravity lines on local soils would occur on a temporary basis. The installation of line work would be primarily along paved and unpaved street ROWs. Extensive measures to minimize soil erosion and siltation to nearby aquatic habitats include the use of hay bales, silt screens, or similar erosion prevention techniques. A negligible increase in energy consumption and use of chemicals (for sewage treatment) would be expected as a result of the implementation of the proposed project.

3.8.4 Relationship Between Short Term Use of the Environment and the Maintenance and/or Enhancement of Long Term Beneficial Uses. The proposed construction, operation, and maintenance of the proposed project will require short-term commitment of various resources including labor, biological resources, and land. Short-term disturbances to agricultural land, soil disturbances, and removal of vegetation associated with the construction and installation of wastewater lines compare favorably to the long-term human health and safety benefits of the elimination of malfunctioning on-site wastewater systems.

Long-term commitment of resources will result from the installation, operation, and maintenance of proposed facilities and indirectly from the provision of water, sewage, electricity, and solid waste. The project would provide wastewater collection and treatment services to service area residents and would eliminate or decrease the long-term risk to the health and safety of area residents by providing adequate wastewater treatment services. The presence of the proposed wastewater treatment facility adds a measure of long-term water quality protection to the area, resulting in a decrease in health problems. The largest long-term impact of the proposed project is the substantial cost associated with its development and implementation. Land values in the project area would be expected to increase as the land becomes more marketable for residential or commercial development. Financial resources expended by the TWDB, NADBank and BECC will provide a long-term financial commitment to the project; for the most part, these resources are considered irretrievable.

3.8.5 Irreversible and Irretrievable Commitment of Resources. Irreversibly and irretrievably committed resources including labor, capital, energy, and building materials. The primary committed resources are financial and energy resources, but the proposed improvements represent a cost-efficient response to the wastewater needs of the area. Building materials committed to construction can be reduced by removing and reusing some materials.

#### **4.0 ENTITIES TO WHOM COPIES OF THIS ENVIRONMENTAL ASSESSMENT WERE MAILED FOR REVIEW AND COMMENT**

The following agencies and governmental entities were sent a copy of the draft EID:

- U.S. Army Corps of Engineers, Corpus Christi District
- U.S. Fish and Wildlife Service
- U.S. International Boundary and Water Commission, El Paso Office
- U.S. International Boundary and Water Commission, Mercedes Field Office
- U.S. Natural Resources Conservation Service
- Border Environment Cooperation Commission
- North American Development Bank
- Texas Water Development Board
- Texas Commission on Environmental Quality, NFIP State Coordinator
- Texas Department of Transportation, Pharr District
- Texas Historical Commission
- State Historic Preservation Officer
- Texas Parks and Wildlife Department
- Coastal Coordination Council
- South Texas Development Council
- Hidalgo and Cameron County Irrigation District
- Hidalgo County Drainage District
- Hidalgo County Planning Department
- Hidalgo County Commissioners Court
- City of Mercedes Planning Director

## **5.0 FIGURES AND COORDINATION LETTERS**

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