APPENDIX D

Compliance and Coordination

Contents:

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APPENDIX D-1-a

Tribal Nation and Cultural Coordination

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Kiowa Tribe of Oklahoma
Office of Historic Preservation
P.O. Box 50
100 Kiowa Way
Carnegie, OK 73015

July 21, 2016

Douglas Sims, RPA
Chief, Environmental Compliance Branch
Fort Worth District COE
PO Box 17300
Fort Worth, TX 76102-0300

RE: Section 106 Consultation and Review for Resacas Feasibility Study (RFS) in Brownsville, Cameron County, TX

Dear Mr Sims,

The Kiowa Tribe Office of Historic Preservation has received the information and materials requested for our Section 106 Review and Consultation. Section 106 of the National Historic Preservation Act of 1966 (NHPA), and 36 CFR Part 800 requires consultation with the Kiowa Tribe.

Given the information provided, you are hereby notified that the proposal project location should have minimal potential to adversely affect any known Archaeological, Historical, or Sacred Kiowa sites. Therefore, in accordance with 36 CFR 800.4(d) (1), you may proceed with your proposed project. However, please be advised undiscovered properties may be encountered and must be immediately reported to the Kiowa Tribe Office of Historic Preservation under both the NHPA and NAGPRA regulations.

This information is provided to assist you in complying with 36 CFR Part 800 for Section 106 Consultation procedures. Please retain this correspondence to show compliance. Should you have any questions, please do not hesitate to contact me at kellie@tribaladminservices.org. Thank you for your time and consideration.

Sincerely,

Kellie J. Poolaw,
Acting Tribal Historic Preservation Officer (THPO)

Kellie J. Poolaw
Acting Tribal Historic Preservation Officer (THPO)
Phone: (405) 435-1650 ***kellie@tribaladminservices.org*** ***Complex: (580) 654-2300***

TONKAWA TRIBE OF OKLAHOMA
NATIVE AMERICAN GRAVES PROTECTION
AND REPATRIATION ACT
1 RUSH BUFFALO ROAD • PHONE (580) 628-2561 • FAX (580) 628-9903
WEB SITE: www.tonkawatribe.com
TONKAWA, OKLAHOMA 74653

July 11, 2016

Dear Sir or Madam,

Regarding the Resacas Feasibility Study (RFS) in Brownsville, Cameron County Texas. The Tonkawa Tribe of Indians of Oklahoma submits the following:

The Tonkawa Tribe has no specifically designated historical or cultural sites identified in the above listed project area. However if any human remains, funerary objects, or other evidence of historical or cultural significance is inadvertently discovered then the Tonkawa Tribe would certainly be interested in proper disposition thereof.

We appreciate notification by your office of the many projects on-going, and as always the Tonkawa Tribe is willing to work with your representatives in any manner to uphold the provisions of NAGPRA to the extent of our capability.

Respectfully,

Miranda "Nax'ce" Myer

NAGPRA Representative

TEXAS HISTORICAL COMMISSION
real places telling real stories

July 7, 2016

Douglas Sims, RPA
Chief, Environmental Compliance Branch
Department of the Army
Fort Worth District, Corps of Engineers
P.O. Box 17300
Fort Worth, Texas 76102-0300

Re: Project review under Section 106 of the National Historic Preservation Act of 1966 and the Antiquities Code of Texas: Resacas Feasibility Study

Dear Mr. Sims:

Thank you for your correspondence describing the above referenced project. This letter serves as comment on the proposed federal undertaking from the State Historic Preservation Officer, the Executive Director of the Texas Historical Commission which is also the state agency responsible for administering the Antiquities Code of Texas.

The Archaeology Division (AD) review staff, led by Casey Hanson, has completed its review of the proposed project and concurs that there are six recorded archeological sites immediately adjacent to the resacas and numerous recorded archeological sites in the vicinity of the resacas. Furthermore, although the resacas are situated in urban settings, the landforms adjacent to the resacas generally display a high probability for containing buried archeological resources. Due to the limited and shallow impacts associated with the proposed restoration activities, the THC recommends that the archeological Area of Potential Effect (APE) include areas of significant ground disturbance including the construction of nesting structures, modification of bank slopes and excavation of accumulated sediments, or any hydrologic restoration efforts that have the potential to affect archeological resources. Please note that if any of the proposed APE requiring archeological survey is located on land owned or controlled by an entity of the state including the City of Brownsville, an Antiquities Permit must be secured from our office before fieldwork may begin.

The History Programs Division (HPD) staff, led by Justin Kockritz, has completed its review of the preliminary project proposal and concurs that Brownsville City Cemetery, Fort Brown, and the Resaca de la Palma Battlefield are located adjacent to the project areas and are each listed in the National Register of Historic Places. To adequately identify any additional historic properties, and to assess the potential effect of the project on historic properties, THC recommends that the APE include any areas of ground disturbance and enough of a buffer to account for potential visual and indirect effects. Given the limited scope of work, this APE may not need to extend more than 200 feet from the project limits, although any areas of work that are particularly visible, especially at the Cemetery or Battlefield, should be taken into account.

Thank you for your cooperation in this federal review process, and for your efforts to preserve the irreplaceable heritage of Texas. **If you have any questions concerning our review or if we can be of further assistance, please contact Casey Hanson at 512.463.5915.**

Sincerely,

for
Mark Wolfe, State Historic Preservation Officer

MW/ch, jk

DEPARTMENT OF THE ARMY
FORT WORTH DISTRICT, CORPS OF ENGINEERS
P. O. BOX 17300
FORT WORTH, TEXAS 76102-0300

June 24, 2016

Sue Masica, Regional Director
National Park Service
12795 Alameda Parkway
Denver, CO 80225

Dear Ms Masica,

The U.S. Army Corps of Engineers (USACE) is currently conducting a Resacas Feasibility Study (RFS) in Brownsville, Cameron County, Texas. Resacas are rare ecosystems comprised of water bodies that were once part of the Rio Grande River system. Approximately 1,500 acres of resacas occur within the City of Brownsville varying in size from 5 - 200 acres, with widths between 100 to 350 feet. The resacas have become disconnected from one another due to urbanization (roadway crossings, development, utility lines) and would dry out for extended time periods without effective water management.

The RFS identifies and evaluates alternatives that provide improvements in the interest of flood control, watershed management, environmental restoration and protection, water quality and other allied purposes. The RFS will result in a decision document recommending a solution for resacas ecosystem restoration within the study area.

The study area consists of three resacas systems within the Rio Grande watershed – Town Resaca, Resaca de la Guerra and Resaca del Rancho Viejo. Although urban and residential development has occurred along many of the resacas, a narrow 50- to 300-foot remnant band of riparian habitat occurs along resacas interspersed throughout the study area (Enclosure).

The RFS will reevaluate opportunities for aquatic ecosystem restoration within the resaca systems of the Brownsville by restoring the native aquatic and riparian habitat to sustainably support native fish and wildlife species over the next 50 years. Structural and nonstructural measures will be considered to restore degraded resaca habitat where feasible and to control and/or minimize the siltation and improve the hydrology distribution within the system. These measures may include the following:

- Plantings to restore natural native riparian, aquatic, and emergent resaca vegetation community structure and function
- Establishment of nesting structures for birds, including rare species that utilize the resacas
- Modification of bank slopes and excavation of accumulated sediment to restore natural resaca geomorphology

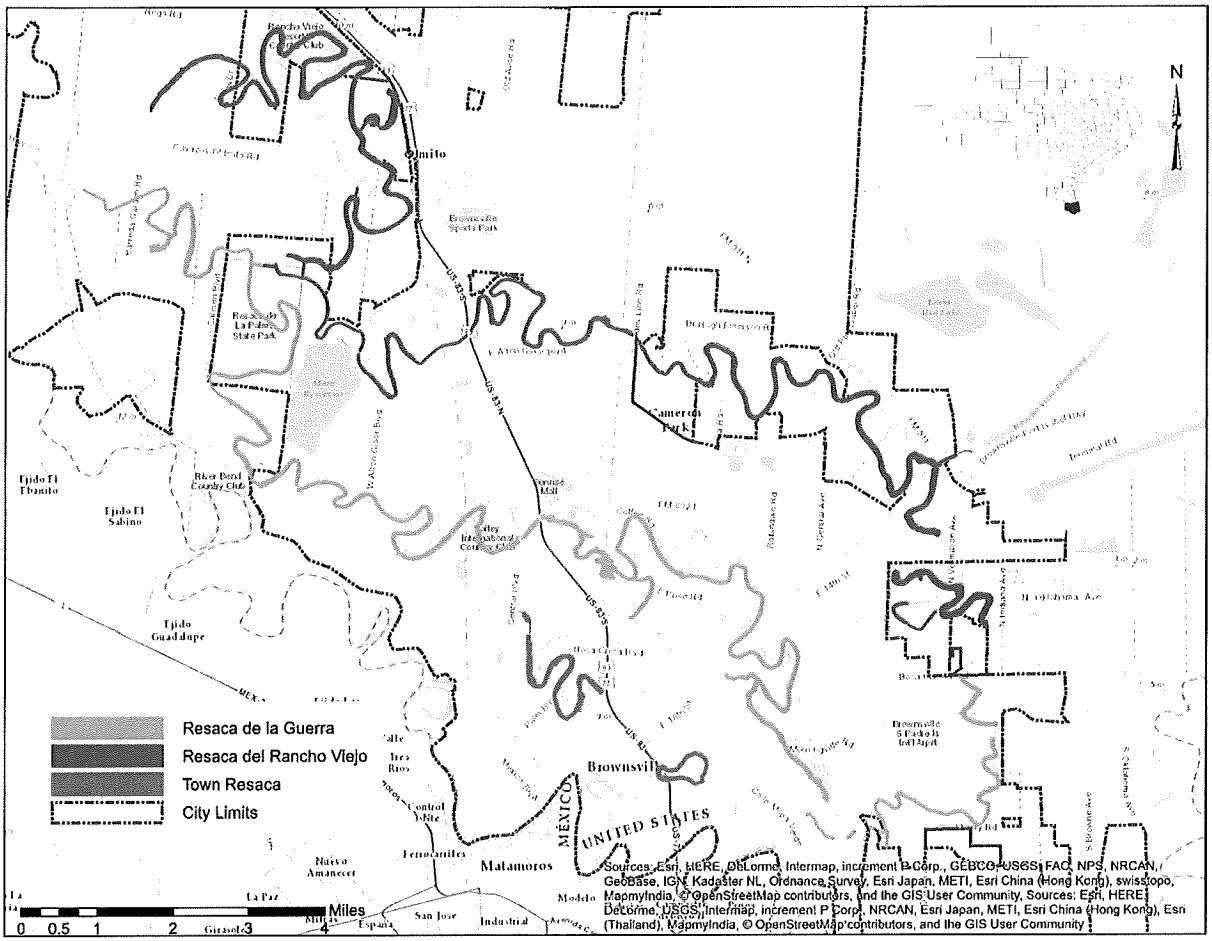
- Hydrologic restoration and management
- Invasive species management (plants and animals)

A preliminary review of the Texas Archeological Sites Atlas shows numerous resources; archeological sites, National Register Properties and National Register Districts within the study area, which is much larger than the anticipated Area of Potential Effect (APE). Approximately six known archeological sites and three National Register Districts (Resaca de la Palma Battlefield, Brownsville City Cemetery/Hebrew Cemetery and Fort Brown) are immediately adjacent to resacas and have a high probability of being within the project's APE. Impacts to cultural resources are expected to be minimal due to the scarcity of built resources within the anticipated APE and the shallow impacts of the proposed restoration activities in areas that have been repeatedly disturbed by riverbank erosion.

We welcome your input regarding defining the APE and the presence of cultural resources within the APE to assist USACE in making an informed decision regarding potential impacts early in the study phase. We look forward to working with your office throughout this process. If you have questions or comments on the RFS or information on historic properties present within the study area, please contact Joseph Murphey, Historic Architect, 817-229-1956, or via email at joseph.s.murphey@usace.army.mil.

Douglas Sims, RPA
Chief, Environmental Compliance Branch

Enclosure



Resacas Feasibility Study Project Area, Brownsville, Cameron County, Texas.

DEPARTMENT OF THE ARMY
GALVESTON DISTRICT, CORPS OF ENGINEERS
P. O. BOX 1229
GALVESTON, TEXAS 77553-1229

August 17, 2017

Mr. Mark Wolfe
State Historic Preservation Officer
Texas Historical Commission
P.O. Box 12276
Austin, TX 78711-2276

Dear Mr. Wolfe:

The U.S. Army Corps of Engineers, Galveston District (USACE) and the Brownsville Public Utilities Board (BPUB) are continuing the Resacas Feasibility Study (RFS) in Brownsville, Cameron County, Texas. Because effects on historic properties cannot be fully determined prior to approval of the undertaking, it is necessary to address identification and evaluation of historic properties programmatically pursuant to 36 CFR 800.14 in the design phase of the study to meet the agency's Section 106 obligations.

The enclosed draft Programmatic Agreement (PA) (Enclosure 1) provides the study authorization, purpose, a description of proposed restoration measures including aerial imagery, and a description of the area of potential effect (APE), which will be finalized in consultation with the signatories of the PA. Previously recorded historic properties and cultural resource surveys within the study area are also discussed in the draft PA, as well as your comment letter dated 7 July 2016 (Enclosure 2).

We request your review and comment on the enclosed draft PA. We are also inviting the Advisory Council on Historic Preservation and the non-Federal sponsor, the Brownsville Public Utilities Board, to consult as signatories to the PA.

We look forward to continuing to work with your office throughout this process. If you have any questions concerning or comments regarding this project or the attached PA, please contact Leslie Crippen, Archeologist, at 817-886-1470, or via email at Leslie.Crippen@usace.army.mil.

Sincerely,

Douglas C. Sims, RPA
Chief, Environmental Compliance Branch
Regional Planning and Environmental Center

Enclosures

APPENDIX D-1-b

Tribal Nation and Cultural Coordination

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PROGRAMMATIC AGREEMENT
REGARDING COMPLIANCE WITH SECTION 106 OF THE NATIONAL HISTORIC PRESERVATION ACT FOR
THE RESACAS AT BROWNSVILLE ECOSYSTEM RESTORATION PROJECT
IN
CAMERON COUNTY, TEXAS
AMONG
THE U.S. ARMY CORPS OF ENGINEERS, GALVESTON DISTRICT,
THE TEXAS STATE HISTORIC PRESERVATION OFFICER,
THE CITY OF BROWNSVILLE
AND
THE BROWNSVILLE PUBLIC UTILITIES BOARD

WHEREAS, the Resacas at Brownsville, Texas Ecosystem Restoration Study was authorized by resolution by the Committee of Transportation and Infrastructure of the United States House of Representatives dated November 10, 1999, in accordance with Section 110 of the Rivers and Harbors Act of 1962 requesting the Secretary of the Army to review the feasibility of providing improvements to the resacas in the vicinity of the City of Brownsville, Texas in the interest of flood control, watershed management, environmental restoration and protection, water quality, and other allied purposes; and

WHEREAS, the Brownsville Public Utilities Board (BPUB) and the City of Brownsville are the non-Federal sponsor (NFS) with the U.S. Army Corps of Engineers, Galveston District (USACE) for construction and maintenance of this undertaking, and is providing the necessary lands, easements, relocations and rights-of-way; and

WHEREAS, the Area of Potential Effects (APE) includes the footprint of all areas of direct impacts and a 200-foot buffer for indirect impacts; and

WHEREAS, the USACE, has determined that ecosystem restoration proposed for resacas within the city of Brownsville, Texas (hereinafter, "undertaking") may have an effect on historic properties eligible for listing in the National Register of Historic Places (NRHP) (hereinafter, "historic properties") pursuant to Section 106 of the National Historic Preservation Act (54 U.S.C. § 306108) (NHPA), as amended, and its implementing regulations (36 CFR 800); and

WHEREAS, this Programmatic Agreement (PA) is being executed to describe the process the USACE and NFS will utilize to identify and evaluate potential effects on historic properties related to the undertaking; and

WHEREAS, the USACE, the Texas State Historic Preservation Officer (SHPO), and the NFS have agreed that it is advisable to execute this PA for the purposes stated above in accordance with 36 CFR 800.6 and 36 CFR 800.14(b)(1)(ii); and

WHEREAS, the USACE has invited the Advisory Council on Historic Preservation (Council) to participate and the Council has declined to enter into the Section 106 process; and

WHEREAS, in accordance with 36 C.F.R. § 800.14(b), the USACE has notified the following Federally recognized Indian Tribes of Cameron County, Texas of the proposed undertaking: the Tonkawa Tribe of Oklahoma, the Mescalero Apache Tribe, the Comanche Nation of Oklahoma, the Kiowa Tribe of Oklahoma, the Alabama-Coushatta Tribe of Texas, the San Carlos Apache Tribe, and the Kikapoo Traditional Tribe of Texas and;

WHEREAS, the two responding tribes, the Tonkawa Tribe of Oklahoma and the Kiowa Tribe of Oklahoma, stated there were no known historic properties in the APE and no further tribal consultation is warranted, provided that any inadvertent discoveries be treated in accordance with the NHPA and the Native American Graves Protection and Repatriation Act (NAGPRA).

NOW, THEREFORE, the USACE, the SHPO, and NFS agree that the proposed undertaking shall be implemented and administered in accordance with the following stipulations in order to take into account for the effects of the undertaking on historic properties and to satisfy the USACE's Section 106 responsibilities for all individual aspects of the undertaking.

STIPULATIONS

I. Identification, Evaluation, Effect Determination, and Resolution

A. Scope of Undertaking. This PA shall be applicable to all excavation, bank modification, planting areas, and any other ground disturbing activities related to the proposed Resacas at Brownsville, Texas Ecosystem Restoration project. The APE shall be established by the USACE in consultation with the SHPO and shall include all areas to be directly and indirectly affected by the undertaking.

B. Qualifications and Standards. The USACE shall ensure that all work conducted in conjunction with this PA is performed in a manner consistent with the Secretary of Interior's "Standards and Guidelines for Archeology and Historic Preservation" (48 FR 44716-44740; September 23, 1983), as amended, or the Secretary of the Interior's "Standards for the Treatment of Historic Properties" (36 CFR 68), as appropriate.

C. Definitions. The definitions set forth in 36 CFR 800.16 are incorporated herein by reference and apply throughout this PA.

D. Identification of Historic Properties. During the pre-construction, engineering and design phase (PED), and prior to the initiation of construction, the USACE shall identify historic properties located within the APE. These steps may include, but

are not limited to, background research, consultation, oral history interviews, sample field investigations, and field survey. The level of effort for these activities shall be determined in consultation with the SHPO and any Native American Indian Tribe or Tribes (Tribes) that attach religious and cultural significance to identified properties. All draft reports of survey or site testing investigations shall be submitted to the SHPO for review and comment. If the SHPO comments are not received by the USACE within thirty (30) days of receipt, the reports and their recommendations shall be considered adequate and the reports may be finalized. Comments received by the USACE from the SHPO or Tribes shall be addressed in the final reports, which shall be provided to all consulting parties. If no historic properties are identified in the APE, the USACE shall document this finding pursuant to 36 CFR 800.11(d), and provide this documentation to the SHPO.

E. Evaluation of National Register Eligibility. If historic properties are identified within the APE, the USACE shall determine their eligibility for the NRHP in accordance with the process described in 36 CFR 800.4(c) and criteria established in 36 CFR 60. All draft reports of NRHP site testing or other NRHP investigations shall be submitted to the SHPO and Tribes for review and comment. If SHPO comments are not received by the USACE within 30 days of receipt, the reports or investigations and their recommendations shall be considered adequate and the reports may be finalized. Comments received by the USACE from the SHPO or Tribes shall be addressed in the final report, which shall be provided to all consulting parties. The determinations of significance shall be conducted in consultation with the SHPO and Tribes. Should the USACE and the SHPO agree that a property is or is not eligible, then such consensus shall be deemed conclusive for the purpose of this PA. Should the USACE and the SHPO not agree regarding the eligibility of a property, the USACE shall obtain a determination of eligibility from the Keeper of the National Register pursuant to 36 CFR 63. For historic properties found not eligible for the NRHP, no further protection or consideration of the site will be afforded for compliance purposes.

F. Other applicable laws and regulations. This PA does not obviate any requirements for a party to otherwise comply with applicable state and/or Federal laws and regulations.

G. Assessment of Adverse Effects.

1. No Historic Properties Affected. The USACE shall evaluate the effect of each undertaking on historic properties in the APE. The USACE may conclude that no historic properties are affected by an undertaking if no historic properties are present in the APE, or the undertaking will have no effect as defined in 36 CFR 800.16(i). This finding shall be documented in compliance with 36 CFR 800.11(d) and the documentation shall be provided to the SHPO and retained by the USACE for at least seven (7) years. The USACE shall provide

information on the finding to the public upon request, consistent with the confidentiality requirements or 36 CFR 800.11(c).

2. Finding of No Adverse Effect. The USACE, in consultation with the SHPO, and Tribes shall apply the criteria of adverse effect to historic properties within the APE in accordance with 36 CFR 800.5. The USACE may propose a finding of no adverse effect if the undertaking's effects do not meet the criteria of 36 CFR 800.5(a)(1) or the undertaking is modified to avoid adverse effects in accordance with 36 CFR 68. The USACE shall provide to the SHPO documentation of this finding meeting the requirements of 36 CFR 800.11(e). The SHPO shall have 30 days in which to review the findings and provide a written response to the USACE. The USACE may proceed upon receipt of written concurrence from the SHPO. Failure of the SHPO to respond with 30 calendar days of receipt of the finding shall be considered agreement with the finding. The USACE shall maintain a record of the finding and provide information on the finding to the public upon request, consistent with the confidentiality requirements of 36 CFR 800.11(c).

3. Resolution of Adverse Effect. If the USACE determines that the undertaking will have an adverse effect on historic properties as measured by criteria in 36 CFR 800.5(a)(1), the USACE shall consult with the SHPO and Tribes to resolve adverse effects in accordance with 36 CFR 800.6.

    a) For historic properties that the USACE and the SHPO agree will be adversely affected, the USACE shall:

        (1) Consult with the SHPO to identify other individuals or organizations to be invited to become consulting parties. If additional consulting parties are identified, the USACE shall provide them copies of documentation specified in 36 CFR 800.11(e) subject to confidentiality provisions of 36 CFR 800.11(c).

        (2) Afford the public an opportunity to express their views on resolving adverse effects in a manner appropriate to the magnitude of the project and its likely effects on historic properties.

        (3) Consult with the SHPO, Tribes, and any additional consulting parties to seek ways to avoid, minimize or mitigate adverse effects.

        (4) Prepare an historic property plan (Plan) which describes mitigation measures the USACE proposes to resolve the undertaking's adverse effects and provide this Plan for review and comment to all consulting parties. All parties have thirty (30) days in which to provide a written response to the USACE.

b) If the USACE and the SHPO fail to agree on how adverse effects will be resolved, the USACE shall request that the Council join the consultation and provide the Council and all consulting parties with documentation pursuant to 36 CFR 800.11(g).

c) If the Council agrees to join the consultation, the USACE shall proceed in accordance with 36 CFR 800.9.

d) If, after consulting to resolve adverse effects, the Council, the USACE, or the SHPO determines that further consultation will not be productive, then any party may terminate consultation in accordance with the notification requirements and processes prescribed in 36 CFR 800.7.

II. Post Review Changes and Discoveries

A. Changes in the Undertaking. If construction on the undertaking has not commenced and the USACE determines that it will not conduct the undertaking as originally coordinated, the USACE shall reopen consultation pursuant to Stipulation I. D-F.

B. Unanticipated Discoveries or Effects. Pursuant to 36 CFR 800.13(b)(3), if historic properties are discovered or unanticipated effects on historic properties are found after construction on an undertaking has commenced, the USACE shall develop a treatment plan to resolve adverse effects and notify the SHPO and Tribes within 48 hours of the discovery. The notification shall include the USACE assessment of the NRHP eligibility of affected properties and proposed actions to resolve the adverse effects. Comments received from the SHPO and Tribes within 48 hours of the notification shall be taken into account by the USACE in carrying out the proposed treatment plan. The USACE may assume SHPO concurrence in its eligibility assessment and treatment plan unless otherwise notified by the SHPO within 48 hours of notification. USACE shall provide the SHPO and Tribes a report of the USACE actions when they are completed.

III. Curation and Disposition of Recovered Materials, Records, and Reports

A. Curation. The USACE shall ensure that all archeological materials and associated records owned by the State of Texas or NFS, which result from identification, evaluation, and treatment efforts conducted under this PA, are accessioned into a curation facility in accordance with the standards of 36 CFR 79, the Antiquities Code of Texas (Texas Natural Resource Code, Chapter 191), the Texas Administrative Code 13 TAC §29.5, and the Council of Texas Archeologists Guidelines and Standards for Curation, except as specified in Stipulation IV for human remains. The curation of items owned by the State of Texas or the NFS shall be maintained in perpetuity by the NFS. Archeological items and materials from privately owned lands shall be returned to their owners upon completion of analyses required for Section 106 compliance under this PA.

B. Reports. The USACE shall provide copies of final technical reports of investigations and mitigation to the consulting parties and the SHPO, as well as additional copies for public distribution. All consulting parties shall withhold site location information or other data that may be of a confidential or sensitive nature pursuant to 36 CFR 800.11(c).

IV. Treatment of Native American Human Remains

A. Prior Consultation. If the USACE's investigations, conducted pursuant to Stipulation I of this PA, indicate a high likelihood that Native American Indian human remains may be encountered, the USACE shall develop a treatment plan for these remains in consultation with the SHPO and Tribes. The USACE shall ensure that Tribes indicating an interest in the undertaking are afforded a reasonable opportunity to identify concerns, provide advice on identification and evaluation, and participation in the resolution of adverse effects in compliance with the terms of this PA.

B. Inadvertent Discovery. Immediately upon the inadvertent discovery of human remains during historic properties investigations or construction activities conducted pursuant to this PA, the USACE shall ensure that all ground disturbing activities cease in the vicinity of the human remains and any associated grave goods and that the site is secured from further disturbance or vandalism. The USACE shall be responsible for immediately notifying local law enforcement officials, and within 48 hours of the discovery, shall initiate consultation with the SHPO and Tribes to develop a plan for resolving the adverse effects.

C. Dispute Resolution. If, during consultation conducted under paragraphs A and B of Stipulation IV, all consulting parties cannot agree upon a consensus plan for resolving adverse effects, the matter shall be referred to the Council for resolution in accordance with the procedures outlines in 36 CFR 800.9.

V. PA Amendments, Disputes and Termination

A. Amendments. Any party to the PA may propose to the other parties that it be amended, whereupon the parties will consult in accordance with 36 CFR 800.6(c)(7) to consider such an amendment.

B. Disputes. Disputes regarding the completion of the terms of this agreement shall be resolved by the signatories. If the signatories cannot agree regarding a dispute, any one of the signatories may request the participation of the Council in resolving the dispute in accordance with the procedures outlined in 36 CFR 800.9. The USACE shall forward to the Council and all consulting parties within fifteen (15) days of such a request all documentation relevant to the dispute, including the USACE's proposed resolution of the dispute. The Council will respond to the request within thirty (30) days of receiving all documentation. The USACE will

take any recommendations or comments from the Council into account in resolving the dispute. In the event that the Council fails to respond to the request within thirty (30) days of receiving all documentation, the USACE may assume the Council's concurrence with its proposed resolution and proceed with resolving the dispute.

C. Termination of PA. Any party to this PA may terminate it by providing a sixty (60) day notice to the other parties, provided that the parties will consult during the period prior to the termination to seek agreement on amendments or other actions that will avoid termination. In the event of termination of this PA the USACE shall comply with the provisions of 36 CFR 800, Subpart B.

VI. Term of this Agreement

A. This PA remains in force for a period of ten (10) years from the date of its execution by all signatories, unless terminated pursuant to Stipulation V.C. Sixty (60) days prior to the conclusion of the ten (10) year period, the USACE shall notify all parties in writing of the end of the ten year period to determine if they have any objections to extending the term of this PA. If there are no objections received prior to expiration, the PA will continue to remain in force for one (1) new ten (10) year period.

Execution of this PA and implementation of its terms evidences that the USACE has afforded the Council an opportunity to comment on the undertaking and its effects on historic properties, and that the USACE has taken into account those effects and fulfilled Section 106 responsibilities regarding the undertaking.

Signature Page for U.S. Army Corps of Engineers District Engineer

PROGRAMMATIC AGREEMENT
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THE U.S. ARMY CORPS OF ENGINEERS, REGIONAL PLANNING AND ENVIRONMENTAL CENTER,
THE TEXAS STATE HISTORIC PRESERVATION OFFICER,
THE CITY OF BROWNSVILLE,
AND
THE BROWNSVILLE PUBLIC UTILITIES BOARD

1 MAR 18

Colonel Lars N. Zetterstrom, District Engineer **Date**

Signature Page for State Historic Preservation Officer

PROGRAMMATIC AGREEMENT
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AND
THE BROWNSVILLE PUBLIC UTILITIES BOARD

Mark Wolfe 10/4/17

Mark Wolfe, Texas State Historic Preservation Officer **Date**

Signature Page for the City of Brownsville, Texas

PROGRAMMATIC AGREEMENT
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AND
THE BROWNSVILLE PUBLIC UTILITIES BOARD

Pete Gonzalez — 10-18-17

Pete Gonzalez, Deputy City Manager **Date**
City of Brownsville, Texas

"Approved as to Form and Legality
This 18 day of OCT 2017
T SAMPECK
Title ASST CITY ATTY
Office of the Brownsville City Attorney"

Signature Page for Brownsville Public Utilities Board, Texas

PROGRAMMATIC AGREEMENT
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THE CITY OF BROWNSVILLE,
AND
THE BROWNSVILLE PUBLIC UTILITIES BOARD

11/2/18

John Bruciak, General Manager and CEO **Date**
Brownsville Public Utilities Board, Texas

The Resacas at Brownsville Ecosystem Restoration Project
Cameron County, Texas

Cultural Resources and Project Summary for the Programmatic Agreement
U.S. Army Corps of Engineers, Galveston District

Study Purpose and Authorization

The U.S. Army Corps of Engineers (USACE) has prepared an Integrated Feasibility Report and Environmental Impact Statement (IFR_EIS) that presents the results of a feasibility study, which was authorized by the resolution by the Committee of Transportation and Infrastructure of the United States House of Representatives dated November 10, 1999, requesting the Secretary of the Army to review the feasibility of providing improvements to the resacas in the vicinity of the City of Brownsville, Texas in the interest of flood control, watershed management, environmental restoration and protection, water quality, and other allied purposes. Under the authority provided, the USACE may participate in planning, engineering and design, and construction of projects to restore degraded aquatic ecosystem structure, function, and dynamic processes to a less degraded, more natural condition when the restoration would improve the environment, is in the public interest, and is cost-effective, as described in the USACE Planning Guidance Notebook (Engineering Regulation [ER] 1105-2-100.

Under natural processes, resacas are formed during extreme flooding events when the Rio Grande diverts from its course and forms a new connection with the Gulf of Mexico. The rerouted river leaves behind a disconnected waterbody up to 40 miles long. Sediments deposited between these extreme floods, and during more frequent minor floods, segmented the relict channel into a series of ponded areas referred to as resacas. In terms of National significance, Resaca ecosystems are found nowhere else on earth. The loss of resacas due to natural sedimentation was historically mitigated by the formation of new resacas in other areas of the floodplain as the active Rio Grande channel formed new pathways. However, the construction of Falcon (1954) and Amistad Dams (1968), the construction of Anzalduas (1960) and Retamal (1975) water diversion dams, and the construction of approximately 102 miles of levees altered the hydrology of the Rio Grande.

The purpose of the Resacas at Brownsville, Texas Ecosystem Restoration Study is to restore, at a landscape level, the resacas within the study area to sustainably support native fish and wildlife species in perpetuity. Specifically, the goal of the study is to identify degraded areas for potential habitat restoration that would facilitate the creation of valuable yet limited wildlife transportation corridors through the City of Brownsville.

Existing Project

The Brownsville Resacas Ecosystem Restoration study area is located along the southern Texas coast, which has been occupied by humans since the Paleoindian period, dating to around 11,500 BP (Hester, 1995). It is situated in the Lower Rio Grande Valley, on the

Texas Gulf Coastal Plain, and is described as a moisture-deficient region with a semiarid, subtropical climate (Blair, 1950; Griffiths and Bryan, 1987). The resacas, which are abandoned meandering channels of the Rio Grande River, are generally filled with clays and silts, and surrounded by overbank flood deposits. Throughout the lower Rio Grande River Basin, hundreds of archaeology sites have been recorded in the silty clay dunes surrounding these abandoned river channels (Anderson, 1932; Terneny, 2005). Because of the dynamic nature of the Rio Grande Delta and the abundance of karst topography, these sites occur anywhere between 10 and 30 feet amsl. They are identifiable by their unique artifact assemblages, including a vast array of shell tools and ornaments, trade goods, and ceramic styles, many of which indicate interaction with people of the Huastec peoples of Mexico (Terneny, 2005).

Conflicting colonial interests and aggressive Indian removal by settlers and agents of the United States dramatically impacted the cultural landscape of Brownsville in the Historic Period. The first and second battles of the Mexican American War were fought at Palo Alto Battlefield and at Resaca de la Palma in May of 1846. Although the area has had extensive residential development, one of the resacas proposed for restoration borders the National Historic District of the Battle at Resaca de la Palma. Records indicate Mexican soldiers were buried in graves of 50-100 men after the battle. One of these graves was discovered and excavated in 1967, during the construction of a nearby reservoir (Wescott et al. 2012). During the Civil War, Union and Confederate troops fought in the Battle of Brownsville in 1863, as well as the final battle of the Civil War, the Battle of Palmito Ranch in May of 1865, more than a month after the official surrender of the Confederacy. Existing earthworks from the Mexican American War were reinforced by enslaved laborers, while rock piles, sunken vessels, chains, and other means were used to block Union troops from coming upriver (Barr 1961).

Recommended Plan

The restoration measures proposed for each restoration area depend on the needs of the individual area. The ecosystem restoration measures available for each area include dredging of sediments to increase the depth of the resaca to historical depth or 6 feet, whichever is less; the sculpting of the resaca bank slope to reduce the slope to reference conditions; the planting of aquatic and emergent vegetation along the edge of the dredged resacas and modified bank slopes; the planting of native riparian vegetation consistent with the three critically imperiled with extinction vegetation associations; and the management and control of non-native, invasive plant species. The map set provided herein indicates the restoration activities proposed for each segment of the project.

In order to maintain aquatic connectivity, modifications to existing water control features may be required. The existing features are within Brownsville Irrigation District 5 and Cameron County Irrigation District 6, which have been determined not eligible for listing in the NRHP as a historic district. Individual features are unlikely to be eligible for listing in the NRHP, but will be evaluated by USACE in consultation with the SHPO, as water control measures are finalized in the planning, engineering, and design phase.

Previous Archaeological Investigations

Numerous surveys have been conducted across the central area of Brownsville. Two of the linear projects that overlap the project area did not include any survey; these were conducted by the Texas Department of Transportation (TXDOT) in 1982 and the Farmer's Home Administration in 1994. A third linear project, conducted by Hicks & Company on behalf of the City of Brownsville in 2006, surveyed the route of the proposed Texas Historic Battlefield Trails Southern Pacific Linear Park. Survey methods included intensive pedestrian survey, shovel testing, and backhoe trenching. No historic properties were recorded during the survey and the report is on file at the Texas Archaeological Research Laboratory. Finally, a 2004 survey conducted on behalf of the Federal Highway Administration and TXDOT at the Brownsville Airport also crosses the proposed project area. One historic debris scatter was recorded and recommended as ineligible for the NRHP during the investigation.

A report detailing the excavation of the Resaca de la Palma Battlefield grave in 1967 was never published (R. Garza, personal communication, July 13, 2017). However, reports on the analyses of the excavated skeletal remains were published in 1978, 1983, 1993, and 2012 (Wescott, et al. 2012). Archaeological survey conducted at the Battlefield site in 2004 identified cultural modifications to the site since the 1846 battle, including fill placement and other land alterations associated with the 1960s construction of a polo field and horse corrals, dumping of highway construction debris, and the structural remains of the ca. 1940s Wells family residence.

Previously Recorded Historic Properties

Two historic properties have been recorded in areas where proposed restoration activities would occur. Site 41CF3 is the Resaca de la Palma Battlefield, which is part of the Palo Alto Battlefield National Historic Landmark and is managed by the National Park Service. In addition to the historic construction and fill activities described above, the site has been more recently disturbed by extensive residential development. Dredging of recently deposited silts, which will occur at least 15 feet away from either shoreline, is proposed for the resaca bordering the publicly accessible battlefield site. Shoreline sculpting and planting of riparian and emergent vegetation are proposed for the Resaca bordering Hanna High School. The northeast corner of the property falls within the Resaca de la Palma Battlefield site boundary. Site 41CF188 is a scatter of fragmentary historic debris, located in the vicinity of the Brownsville airport, and has been recommended as ineligible for listing in the NRHP. Riparian vegetation planting is proposed for this location. Numerous above-ground historic properties occur within the study area, but will not be impacted by the proposed restoration measures. The determination of no impacts to standing historic structures is discussed below.

Recommendations

Based on the current information for the ecosystem restoration measures proposed for the Brownsville resacas, there is a potential to affect historic properties. These effects consist

of direct impacts from earth moving and excavation activities associated with bank slope modification, invasive plant species removal, and planting of emergent and riparian vegetation. The USACE recommends cultural resource investigations as described in Stipulation I(D) of this agreement to identify and evaluate any historic properties within proposed construction areas. Proposed ecosystem restoration activities will restore the visual character of the resacas to that which existed before the lower Rio Grande delta became urbanized and the resacas were isolated from the migrating river. As such, there are no impacts to the historic viewshed and the USACE does not recommend cultural resource investigations of surrounding historic structures and cemeteries.

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APPENDIX D-2a

USFWS Fish and Wildlife Planning Aid Letter/Coordination Act Report

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United States Department of the Interior

FISH AND WILDLIFE SERVICE

Texas Coastal Ecological Services Field Office
4444 Corona, Suite 215
Corpus Christi, Texas 78418
361/994-9005/ (Fax) 361/994-8262

August 10, 2017

Douglas C. Sims, RPA, Acting Chief
Attention: Danny Allen
U.S. Army Corps of Engineers
Regional Planning & Environmental Center, Coastal Section
819 Taylor St., Room 3A12
Fort Worth, Texas 76102

Dear Mr. Sims:

The purpose of this joint planning aid letter and Fish and Wildlife Coordination Act report is to describe the existing fish and wildlife resources within the Brownsville Resaca Ecosystem Restoration Study area (study area); describe currently proposed alternatives; identify potentially significant impacts; identify modifications or alternatives that address fish and wildlife related problems, opportunities, or planning objectives; and recommend preliminary measures for resource protection. This planning assistance is provided to the U.S. Army Corps of Engineers (USACE), pursuant to the Fish and Wildlife Coordination Act (FWCA) (48 Stat. 401, as amended; 16 U.S.C. 661 et seq). This information does not represent a final report of the Secretary of the Interior within the meaning of Section 2(b) of the Act. A complete FWCA report will be prepared by the U.S. Fish and Wildlife Service (Service) to accompany the feasibility report after all pertinent information, including review comments from the Texas Parks and Wildlife Department (TPWD) and proposed project alternatives, has been received and reviewed. To streamline the FWCA process, this letter serves as both the Planning Aid Letter (PAL) and the Coordination Act Report (CAR).

Service involvement with the Brownsville Resaca Ecosystem Restoration Study (study) has occurred regularly and throughout the study's lifespan. Important dates of past Service involvement are summarized below. The USACE met with the Service and TPWD staff on 15-18 December 2015 to develop an ecological conceptual model and identify potential measures and model metrics, and the data collection reference areas for the development of a reference condition model. Ongoing discussions with the resource agencies continued during model development, refinement, and QA/QC of the resulting habitat model prior to data sampling of the restoration areas. Data sampling of the study area occurred 25 July and 1 August 2016.

Description of the Project Area

The environmental study area within the Brownsville Resaca Ecosystem Restoration Study is the city of Brownsville, located at the southern tip of Texas within Cameron County, Texas. The study area includes three separate resaca systems: Resaca del Ranch Viejo stretching west to east across the northern portion of the city of Brownsville, Resaca de la Guerra transecting the middle portion of the city, and the Town Resaca system located at the southern end of the city. The study area encompasses the portions of the resaca systems located within the city limits of Brownsville.

The topography of the resaca study area is consistent with the flat topography associated with large river delta areas ranging from an elevation of 40 feet above mean seal level (amsl) in the northwestern corner of the study area to an elevation of 20 feet amsl in the southeastern portion. Localized drainage swales, drains, and irrigation canals direct local storm water runoff and water throughout the study area.

The vegetation communities that have evolved in the Lower Rio Grande Valley (LRGV) and around the resaca ecosystems are unique, representing a distinctive transition between temperate and tropical conditions. These areas exhibit high biodiversity of plants and animals, some of which are found in few other places, if any, and are restricted to the LRGV of Texas (Cameron, Hidalgo, and Willacy counties) and Mexico. Since the early 1870s and the introduction of irrigation, the loss of native desert thorn-scrub vegetation, including resaca habitats, to cultivated agriculture uses has resulted in the loss of 95% of thorn-scrub habitat in the LRGV and 99% of riparian resaca habitats. Over the last 25 years, agricultural lands and remaining thorn-scrub habitat has also been lost to urbanization with Cameron County populations increased over 60% from 1990 to 2014. The agricultural history and rapid urbanization of the area has resulted in the loss of 99% of resaca dependent habitats in Texas. Because of these losses, the vegetation communities associated with the resacas are globally imperiled with extinction (G1: Texas Ebony Resaca Forest; G2: Subtropical Texas Palmetto Woodland and Texas Ebony/Snake-eyes Shrubland; NatureServe 2015). NatureServe's G1 ranking is designated for critically imperiled species or communities that are at a very high risk of extinction due to extreme rarity, very steep declines, or other factors. The G2 ranking is for imperiled species or communities at high risk of extinction or elimination due to very restricted range, very few populations, steep declines, or other factors. The three vegetation associations of the resacas have evolved specifically with the dynamics of the resacas and the Rio Grande and are found nowhere else on earth. The restricted range, threat of extinction due to the loss of hydrologic function, and the very steep decline in the extent of the vegetation are major factors in the NatureServe rankings. The Rio Grande Delta physiographic zone, where the resacas are found, faces the greatest future conservation challenges because it has the highest human densities and growth within the LRGV.

Migratory Birds and Other Wildlife Resources

The migratory bird and other wildlife use of resacas are as diverse as the high biodiversity found in the vegetation communities described above. Because of the loss of so much natural habitat in the LRGV, the remaining resacas provide crucial habitat resources for numerous species, including species of conservation concern and state and federally listed threatened and endangered species. Specifically, resacas provide loafing, breeding, and refuge habitat for a

variety of resident and migratory birds. There are 50 species of migratory birds of conservation concern found within Cameron County. The Service's *Birds of Conservation Concern* (2008) lists 27 avian species that may utilize Tamaulipan brushlands and may be found within the resacas. The LRGV is considered one of the most species-rich butterfly areas in the United States (Wauer 2004) with >50% of observed species considered LRGV specialists or rarely found elsewhere (Leslie 2016). Remnant resacas also provide stepping stones of quality habitat for wildlife within the urban conditions of Cameron County, thus connecting remaining habitat parcels in the LRGV. Fragmentation is a major cause of decline in many native species from different Orders, making restoration and connectivity more critical to conserving wildlife.

Threatened and Endangered Species

The following species are listed as threatened (T), endangered (E), or delisted (D) for Cameron County (w/CH = with critical habitat in Texas; w/CHI = with critical habitat outside of Texas):

Brown pelican	(D)	*Pelecanus occidentalis*
Piping plover	(T w/CH)	*Charadrius melodus*
Red-crowned parrot	(C)	*Amazona viridigenalis*
Red knot	(T)	*Calidris canutus rufa*
Northern aplomado falcon	(E)	*Falco femoralis septentrionalis*
Gulf Coast jaguarundi	(E)	*Herpailurus yagouaroundi cacomitli*
Ocelot	(E)	*Leopardus pardalis*
West Indian manatee	(T)	*Trichechus manatus*
Green sea turtle	(T)	*Chelonia mydas*
Hawksbill sea turtle	(E w/CHI)	*Eretmochelys imbricata*
Kemp's Ridley sea turtle	(E)	*Lepidochelys kempii*
Leatherback sea turtle	(E w/CHI)	*Dermochelys coriacea*
Loggerhead sea turtle	(T)	*Caretta caretta*
South Texas ambrosia	(E)	*Ambrosia cheiranthifolia*
Texas ayenia	(E)	*Ayenia limitaris*

Alternatives Under Consideration

Seven alternatives, including the no action alternative were considered and are described in detail in the *City of Brownsville Resaca Ecosystem Restoration Study, Feasibility Report/Environmental Assessment.* Ecosystem restoration for consideration included dredging, riparian soil supplementation with thin layer dredge material, planting riparian vegetation consistent with the three rare vegetation associations, relaxing the bank slope, bank stabilization, planting of aquatic and emergent vegetation, modification/construction of water control structures, and invasive plant species management.

Because each alternative is cost effective and economically justified, USACE utilized the Institute of Water Resource's Planning Suite cost effective/incremental cost analysis methodology to identify the national ecosystem restoration (NER) plan. Based on this analysis, Alternative 5 was identified as the federally justified Alternative for the NER plan.

Future Without Project (FWOP)

This Alternative presumes that there would be no Proposed Action for the study area. The Brownsville resaca study area includes urban, suburban, and rural areas and future conditions would include the continued development of undeveloped areas over time. The existing habitat would continue to be maintained as a park-like landscape dominated by non-native and invasive species. The non-native plant species would continue to overtake the remaining native vegetation in the study area. For a while, the study area would continue to provide marginal habitat for a small number of generalist fish and wildlife species that are tolerant of low quality habitats, including non-natives. Under the FWOP, the resacas would continue to accumulate sediments and eventually would be incapable of impounding water.

Proposed Action Alternative

This Alternative restores 523 acres of resaca riparian habitat consisting of vegetation representative of Texas Ebony Forest, Subtropical Texas Palmetto Woodland, or Texas Ebony/Snake-eyes vegetation associations; 57 acres of native aquatic and emergent vegetation within the resacas; and invasive species control for 619 acres for a total of 780 acres of resaca restoration. In addition, the project would include the bank shaping along 33 miles of resacas shoreline. The sculpting of the banks provides optimal habitat connection for rare amphibian species as they transition from their aquatic to terrestrial life stage. Bank sculpting will also discourage colonization of the non-native, invasive vermiculated sailfin catfish (*Pterygoplichthys disjunctivus*), which prefers steeper slopes. The restoration of dense vegetation also provides habitat for a diverse invertebrate community that serves a vital role in the food web for avian and amphibian species in the study area. In addition, several rare invertebrate species such as the royal moth (*Sphingicampa blanchardi*) and the Tamaulipan agapema (*Agapema galbina*) require Texas Ebony (*Ebenopsis ebano*) and Brasil (*Condalia hookeri*), respectively, as host plants during their caterpillar stage. These two species are important components of the Texas Ebony Resaca Forest and Subtropical Texas Palmetto Woodland.

The recovery plans for the ocelot and Gulf Coast jaguarondi, both endangered species, identify the importance of stepping stone habitats that serve as transportation corridors for dispersing animals. Although the study area would not serve as permanent habitat for these species, should the Service, TPWD, or other NGO restore cat habitat near the eastern and western city limits, the study area could provide a transportation corridor for dispersing cats to move east/west across the city.

In Year 0, 914.5 acres of existing marginal and moderate quality habitat will be temporarily impacted by dredging, grading, and soil bed preparation activities for the implementation of the restoration measures of the proposed action. The immediate loss of habitat quality would then increase gradually over time as the restored habitats begin developing. Habitat quality would increase the quickest over the first 10 to 15 years as the woody vegetation matured in size and canopy coverage; however, habitat benefits would not maximize until the development of later successional climax vegetation such as Sierra Madre torchwood (*Amyris madrensis*), Texas torchwood (*A. texana*), guayacan (*Guaiacum angustifolium*), and other climax species.

Summary and Recommendations

While the Service recognizes that the bank slope restoration should negatively affect the non-native, invasive vermiculated sailfin catfish within the resacas, please consider whether the described benefit to amphibians will be long-term without implementing additional actions to controlling the invasive fish population. This fish species consumes algae and detritus and most certainly impacts the food base for both vertebrates and invertebrates within the resacas. We see that the Average Annual Cost for the Proposed Action Selected is substantially less than the Alternative including the same benefits plus fish control. However, if all of the Alternatives are cost effective and economically justified, please justify utilizing bank restoration without fish control.

The Service recommends installing artificial nest cavities for the candidate red-crowned parrot and managing trees present within the study area for the benefit of this species. The red-crowned parrot depends upon existing cavities in trees for nest sites; therefore, woodpecker holes in dead palm trees are often used by the parrots. If the non-native Washingtonia palm (*Washingtonia robusta*) is present, consider leaving the palms in place and incorporating them into the restoration plans for future red-crowned parrot habitat needs. Live, existing Washingtonia palms could be killed to speed the development of red-crowned parrot cavities in the restoration areas.

The Texas ayenia, an endangered plant, should be included in the restoration plan wherever possible. Texas ayenia has a restricted range in the U.S., only occurring in isolated fragments of Texas Ebony/Anacua/Brasil Shrubland and Texas Ebony/Snake-eyes Shrubland in the Rio Grande Delta in Cameron, Hidalgo, and Willacy counties.

Given the Proposed Action Alternative, the following specific measures could be beneficial for the restoration of the aquatic and riparian habitats of the Brownsville resacas.

1. Widen the riparian corridors along the resacas as much as possible by planting native plant species consistent with the rare vegetation associated with the resacas (Texas Ebony Riparian Forest, Texas Ebony/Anacua Shrubland, and Subtropical Texas Palmetto Woodland vegetation associations). The riparian buffer zones provide several benefits for terrestrial and aquatic resources:
    a. First, riparian zones stabilize eroding banks by absorbing the erosive force of flowing water and fetch along the resacas while roots hold the soil in place.
    b. Second, riparian zones filter sediment, nutrients, pesticides, and animal waste runoff.
    c. Third, riparian zones provide shade, shelter, and food for wildlife and aquatic organisms.
    d. Finally, the connection of riparian zones along the resaca provides habitat connectivity to facilitate the dispersal of organisms and genetic material along these "travel corridors".

    Native plant species should be utilized in the expanded portion of the riparian habitats to improve canopy cover and wildlife food base.

2. Mimic floodplain processes by beneficially utilizing dredge material to augment soils in the riparian habitat planting areas with nutrients.

3. Plant native aquatic and emergent plant species along the resaca edges, including woody emergent vegetation such as giant sensitive tree (*Mimosa pigra*), retama (*Parkinsonia aculeata*), bald cypress (*Taxodium distichum*), and willow (*Salix* sp.). Consider planting other native trees such as sugarberry (*Celtis laevigata*) and Mexican elm (*Ulmus mexicana*), as needed.

4. The Service requests that you develop a written monitoring and management plan to track the progress of restoration over time, with monitoring at specific intervals. The plan should provide for invasive species control over time and opportunities for implementation of adaptive management as needed.

We appreciate the opportunity to participate in the planning of this project and look forward to working with your staff on this and future federal projects. If you have any questions or comments concerning this report, please contact staff biologist Gretchen Nareff at (361) 994-9005, extension 242.

Sincerely,

E. Dawn Gardiner

for Charles Ardizzone
Project Leader

APPENDIX D-2-b

The USACE Response to USFWS Recommendations Provided in the Fish and Wildlife Coordination Act Report

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Appendix D-2-b

The USACE Response to USFWS Recommendations Provided in the Fish and Wildlife Coordination Act Report

The U.S. Fish and Wildlife Service (USFWS) provided recommendations for the Resacas Ecosystem Restoration study in the Fish and Wildlife Coordination Act Report dated 10 August 2017. These recommendations identify measures that would increase the ecological benefits, both captured and uncaptured, of the proposed restoration project. The following is a list of the USFWS recommendations and a description of how the USACE addressed them in the Feasibility/EA report. All responses were considered for effectiveness, efficiency, completeness, and acceptability. Most recommendations reflect the measures and ecosystem processes identified by the USACE and proposed for restoration implementation

Recommendation 1 – The USFWS requested justification for utilizing the bank slope measure without further control of the invasive vermiculated sailfin catfish.

The USACE Response – The bank slope measure discussed in the feasibility report identifies the laying back of the banks as a passive catfish control measure. Although the physical or chemical control of catfish would further provide ecological benefits, including benefits to amphibian species, the higher cost of additional catfish control did not result in alternatives that were cost effective and economically justified. This analysis was conducted during the Section 206 Resaca Boulevard Resaca Ecosystem Restoration study and used to inform the Interim Ecosystem Restoration feasibility study.

Recommendation 2 – The USFWS recommended that the study include the installation of artificial nesting structures for the Red-crowned parrot, a candidate species. The USFWS also recommended creating standing snags by killing non-native Washington palms and leaving the trunks for cavity nesters, including the Red-crowned parrot.

The USACE Response – The use of artificial nest boxes for Red-crowned parrots has not been successful although research in this area continues. The implementation plan includes leaving existing palm snags in place for cavity nesters and incorporates killing selected Washington palms in the riparian planting measure to serve as cavity nesting structures for the red-crowned parrot.

Recommendation 3 – The USFWS recommended the inclusion of Texas ayenia, an endangered plant, in the restoration plan wherever possible.

The USACE Response – The Texas ayenia is included in the riparian planting measure by incorporating Texas ayenia in the plant species mix of the restoration plan.

Recommendation 4 – The USFWS recommended that the riparian corridors along the resacas be widened as much as possible to serve as habitat and buffer zones to the resacas.

The USACE Response – The USACE restoration strategy for the identification of restoration areas was based on the concept of widening the resaca's riparian habitats as much as feasible and to maximize the connectivity between restoration areas as much as possible based on reference resaca habitat conditions.

Recommendation 5 –The USFWS recommends the mimicking of floodplain processes by beneficially utilizing dredge material to augment soils in the riparian habitat planting areas with nutrients.

The USACE Response – The beneficial use of dredged materials to augment riparian planting areas was proposed as a measure in the development of alternatives, and coordinated with the USFWS for their review.

Recommendation 6 – The USFWS recommends planting native aquatic and emergent plant species along the resaca edges, including woody emergent vegetation.

The USACE Response – The planting of native aquatic and emergent plant species was proposed as a measure in the development of alternatives and was coordinated with the USFWS for their review. The aquatic planting measure is incorporated in the recommended plan.

Recommendation 7 – The USFWS requested that a written monitoring and adaptive management plan be developed to track restoration progress over time. The plan should include provisions for the control of invasive species.

The USACE Response – The feasibility report contains a draft monitoring and adaptive management plan that would be further developed during the PED phase of the project. Measures dealing with the monitoring and control of invasive species are incorporated into this plan.

APPENDIX D-3

Clean Water Act Section 404(b)1 Guidelines – Short Form

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EVALUATION OF SECTION 404(b)(1) GUIDELINES (SHORT FORM)

PROPOSED PROJECT: Brownsville Resacas Ecosystem Restoration Integrated Feasibility Report and Environmental Assessment

	Yes	No*
1. Review of Compliance (230.10(a)-(d))		
A review of the proposed project indicates that:		
a. The placement represents the least environmentally damaging practicable alternative and, if in a special aquatic site, the activity associated with the placement must have direct access or proximity to, or be located in the aquatic ecosystem, to fulfill its basic purpose (if no, see section 2 and information gathered for EA alternative).	X	
b. The activity does not appear to:		
1) Violate applicable state water quality standards or effluent standards prohibited under Section 307 of the Clean Water Act;	X	
2) Jeopardize the existence of Federally-listed endangered or threatened species or their habitat; and	X	
3) Violate requirements of any Federally-designated marine sanctuary (if no, see section 2b and check responses from resource and water quality certifying agencies).	X	
c. The activity will not cause or contribute to significant degradation of waters of the U.S. including adverse effects on human health, life stages of organisms dependent on the aquatic ecosystem, ecosystem diversity, productivity and stability, and recreational, aesthetic, an economic values (if no, see values, Section 2)	X	
d. Appropriate and practicable steps have been taken to minimize potential adverse impacts of the discharge on the aquatic ecosystem (if no, see Section 5)	X	

	Not Applicable	Not Significant	Significant*
2. Technical Evaluation Factors (Subparts C-F) (where a 'Significant' category is checked, add explanation below.)			
a. Physical and Chemical Characteristics of the Aquatic Ecosystem (Subpart C)			
1) Substrate impacts		X	
2) Suspended particulates/turbidity impacts		X	
3) Water column impacts		X	
4) Alteration of current patterns and water circulation		X	
5) Alteration of normal water fluctuation/hydroperiod		X	
6) Alteration of salinity gradients		X	
b. Biological Characteristics of the Aquatic Ecosystem (Subpart D)			
1) Effect on threatened/endangered species and their habitat		X	
2) Effect on the aquatic food web		X	
3) Effect on other wildlife (mammals, birds, reptiles and amphibians)		X	

	Not Applicable	Not Significant	Significant*
2. Technical Evaluation Factors (Subparts C-F) (where a 'Significant' category is checked, add explanation below.)			
c. Special Aquatic Sites (Subpart E)			
1) Sanctuaries and refuges	X		
2) Wetlands	X		
3) Mud flats	X		
4) Vegetated shallows	X		
5) Coral reefs	X		
6) Riffle and pool complexes	X		
d. Human Use Characteristics (Subpart F)			
1) Effects on municipal and private water supplies		X	
2) Recreational and Commercial fisheries impacts		X	
3) Effects on water-related recreation		X	
4) Aesthetic impacts		X	
5) Effects on parks, national and historical monuments, national seashores, wilderness areas, research sites, and similar preserves		X	

List appropriate references:
Interim Ecosystem Restoration Feasibility Study and Environmental Assessment for the resacas in the vicinity of the City of Brownsville, Texas. Appendix A, Environmental Consequences Section.

	Yes
3. Evaluation of Dredged or Fill Material (Subpart G)	
a. The following information has been considered in evaluating the biological availability of possible contaminants in dredged or fill material (check only those appropriate)	
1) Physical characteristics	X
2) Hydrography in relation to known or anticipated sources of contaminants	X
3) Results from previous testing of the material or similar material in the vicinity of the project	X
4) Known, significant sources of persistent pesticides from land runoff or percolation	
5) Spill records for petroleum products or designated (Section 311 of Clean Water Act) hazardous substances	X
6) Other public records of significant introduction of contaminants from industries, municipalities or other sources	X
7) Known existence of substantial material deposits of substances which could be released in harmful quantities to the aquatic environment by man-induced discharge activities	

	Yes	No
b. An evaluation of the appropriate information in 3a above indicates that there is reason to believe the proposed dredged or fill material is not a carrier of contaminants, or that levels of contaminants are substantively similar at extraction and placement sites and not likely to degrade the placement sites, or the material meets the testing exclusion criteria.	X	

List appropriate references:
Interim Ecosystem Restoration Feasibility Study and Environmental Assessment for the resacas in the vicinity of the City of Brownsville, Texas. Appendix A, Environmental Consequences Section, HTRW Subsection.

	Yes
4. Placement Site Delineation (230.11(f))	
a. The following factors as appropriate, have been considered in evaluating the placement site:	
1) Depth of water at placement site	N/A
2) Current velocity, direction, and variability at placement site	N/A
3) Degree of turbulence	N/A
4) Water column stratification	N/A
5) Discharge vessel speed and direction	N/A
6) Rate of discharge	N/A
7) Fill material characteristics (constituents, amount, and type of material, settling velocities)	N/A
8) Number of discharges per unit of time	N/A
9) Other factors affecting rates and patterns of mixing (specify)	N/A

List appropriate references: The dredged material will be treated at a mobile onsite dewatering/flocculation facility and the dredged material hauled to the landfill by truck. The placement area is an existing landfill in the City of Brownsville. The dredge material will be used as cover for the landfill facility. As stated in the "Interim Ecosystem Restoration Feasibility Study and Environmental Assessment for the resacas in the vicinity of the City of Brownsville, Texas. Appendix A, Environmental Consequences Section", some of the dredged material will be used as a soil supplement for the riparian planting areas.

	Yes	No
b. An evaluation of the appropriate factors in 4a above indicates that the placement site and/or size of mixing zone are acceptable.	N/A	

	Yes	No
5. Actions to Minimize Adverse Effects (Subpart H)		
All appropriate and practicable steps have been taken, through application of recommendations of 230.70-230.77 to ensure minimal adverse effects of the proposed discharge.	X	

List actions taken:

1) **Impacts to the physical substrate from discharge of dredged material were minimized through a treatment facility that flocculates sediments from discharge waters and disposes the sediments to an existing upland disposal area. Some of the dredged material will be used as soil supplements for the riparian planting areas of the project area, see Interim Ecosystem Restoration Feasibility Study and Environmental Assessment for the resacas in the vicinity of the City of Brownsville, Texas. Appendix A, Environmental Consequences Section**

	Yes	No*
6. Factual Determination (230.11)		
A review of appropriate information as identified in items 2-5 above indicates that there is minimal potential for short- or long-term environmental effects of the proposed discharge as related to:		
a. Physical substrate at the placement site (review Sections 2a. 3, 4, and 5 above)	X	
b. Water circulation, fluctuation and salinity (review Sections 2a. 3, 4, and 5)	X	
c. Suspended particulates/turbidity (review Sections 2a. 3, 4, and 5)	X	
d. Contaminant availability (review Sections 2a. 3, and 4)	X	
e. Aquatic ecosystem structure and function (review Sections 2b and c, 3, and 5)	X	
f. Placement site (review Sections 2, 4, and 5)	X	
g. Cumulative impacts on the aquatic ecosystem	X	
h. Secondary impacts on the aquatic ecosystem	X	

7. Evaluation Responsibility	
a. This evaluation was prepared by:	**Daniel Allen**
Position:	**Regional Technical Specialist, Coastal Section, CESWF-PEC-CC**

8. Findings	Yes
a. The proposed placement site for discharge of or fill material complies with the Section 404(b)(1) Guidelines.	X
b. The proposed placement site for discharge of dredged or fill material complies with the Section 404(b)(1) Guidelines with the inclusion of the following conditions:	

List of conditions:

c. The proposed placement site for discharge of dredged or fill material does not comply with the Section 404(b)(1) Guidelines for the following reason(s):	
1) There is a less damaging practicable alternative	
2) The proposed discharge will result in significant degradation of the aquatic ecosystem	

3) The proposed discharge does not include all practicable and appropriate measures to minimize potential harm to the aquatic ecosystem	
2/7/18 Date	Douglas C. Sims Chief, Environmental Compliance Branch, Regional Planning and Environmental Center

NOTES:

* A negative, significant, or unknown response indicates that the permit application may not be in compliance with the Section 404(b)(1) Guidelines.

Negative responses to three or more of the compliance criteria at the preliminary stage indicate that the proposed projects may not be evaluated using this "short form" procedure. Care should be used in assessing pertinent portions of the technical information of items 2a-e before completing the final review of compliance.

Negative response to one of the compliance criteria at the final stage indicates that the proposed project does not comply with the Guidelines. If the economics of navigation and anchorage of Section 404(b)(2) are to be evaluated in the decision-making process, the "short form" evaluation process is inappropriate.

APPENDIX D-4

Federal Aviation Administration Coordination

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U.S. Department
of Transportation
**Federal Aviation
Administration**

Federal Aviation Administration
Southwest Region, Airports Division
Texas Airports Development Office

FAA-ASW-650
10101 Hillwood Parkway
Fort Worth, Texas 76177

September 5, 2017

Douglas C. Sims, RPA
Chief, Environmental Compliance Branch
Regional Planning and Environmental Center
P.O. Box 17300
Fort Worth, TX 76102-0300

VIA EMAIL

Subject: Brownsville Resacas Ecosystem Restoration Study Feasibility Report/ Environmental Assessment Wildlife Hazard Mitigation

Per your letter dated August 22, 2017, the U.S. Army Corps of Engineers, Galveston District (USACE) and the Brownsville Public Utilities Board are requesting FAA concurrence on the following mitigation measures for the Brownsville Resacas Restoration Project:

1. The bank restoration and emergent planting measures will be removed from a 1,000-foot buffer from the flight paths of runways 13/31 and 18/36. Restoration measures in this area will consist of invasive plant management and native riparian shrub plantings only.

2. The Feasibility Report/Environmental Assessment (FR/EA) for the Brownsville resaca ecosystem restoration study will address the commitment to conduct bird surveys during the initial Preconstruction Engineering and Design (PED) phase of the project. USACE will coordinate the results of the bird surveys with the FAA, and if possible, coordinate the surveys to coincide with the development of the wildlife hazard report update for the Brownsville airport.

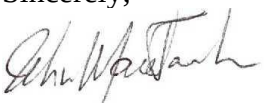
3. A conditional Finding of No Significant Impact will be drafted to include the two requirements listed above.

4. USACE will coordinate the changes to the Draft FR/EA and the conditional FONSI with the FAA prior to the publication of the Final FR/EA.

If the project incorporates the measures above, the FAA concurs that the project will be in compliance with FAA Advisory Circular 150/5200-33B, Hazardous Wildlife Attractants on or Near Airports.

Thank you for your cooperation in this matter. If you need any additional assistance, feel free to contact this office.

Sincerely,



John MacFarlane
Environmental Protection Specialist
Texas Airports District Office

cc: Richard Middleton
Daniel Allen, USACE

APPENDIX D-5

Texas Coastal Management Program Coordination

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TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Protecting Texas by Reducing and Preventing Pollution

July 26, 2017

CERTIFIED MAIL

Mr. Douglas Sims
Chief, Environmental Compliance Branch
Fort Worth District
U.S. Army Corps of Engineers
P.O. Box 17300
Fort Worth, Texas 76012-0300

Re: Draft Feasibility Report and Integrated Environmental Assessment for the Resacas at Brownsville Ecosystem Restoration Study (EA)

Dear Mr. Sims:

This letter is in response to the EA dated June 7, 2017, and the U.S. Army Corps of Engineers' (Corps) request for certification received July 20, 2017, on the Brownsville Public Utilities Board proposed Brownsville Resacas Ecosystem Restoration project. The project is located in Brownsville, Cameron County, Texas.

The Texas Commission on Environmental Quality (TCEQ) has reviewed the EA. On behalf of the Executive Director and based on our evaluation of the information contained in these documents, the TCEQ certifies that there is reasonable assurance that the project will be conducted in a way that will not violate water quality standards.

The purpose of the Resacas at Brownsville, Texas Ecosystem Restoration Study is to restore, at a landscape level, the resacas within the study area to sustainably support native fish and wildlife species in perpetuity. Specifically, the goal of the study is to identify degraded areas for potential habitat restoration that would facilitate the creation of valuable yet limited wildlife transportation corridors through the City of Brownsville. The study area includes three separate Resaca systems: Resaca del Rancho Viejo stretching west to east across the northern portion of the city of Brownsville, Resaca de la Guerra transecting the middle portion of the city, and the Town Resaca system located at the southern end of the city. The study area encompasses the portions of the resaca systems from the edge of the western Brownsville city limit to the eastern city limit boundary, inclusive of Cameron County inholdings.

The TCEQ has reviewed this proposed action for consistency with the Texas Coastal Management Program (CMP) goals and policies in accordance with the CMP regulations (Title 31, Texas Administrative Code (TAC), Section (§)505.30) and has determined that the action is consistent with the applicable CMP goals and policies.

This certification was reviewed for consistency with the CMP's development in critical areas policy (31 TAC §501.23) and dredging and dredged material disposal and placement policy (31 TAC §501.25). This certification complies with the CMP goals (31 TAC §501.12(1, 2, 3, 5)) applicable to these policies.

No review of property rights, location of property lines, nor the distinction between public and private ownership has been made, and this certification may not be used in any way with regard to questions of ownership.

If you require additional information or further assistance, please contact Ms. Jenna R. Lueg, Water Quality Assessment Section, Water Quality Division (MC-150), at (512) 239-4590 or by email at jenna.lueg@tceq.texas.gov.

Sincerely,

David W. Galindo
Water Quality Division Director
Texas Commission on Environmental Quality

DWG/JRL/sh

cc: Mr. Daniel Allen, Fort Worth District U.S. Army Corps of Engineers, P.O. Box 17300, Fort Worth, Texas 76012-0300

APPENDIX D-6

Hazardous, Toxic, and Radioactive Waste

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Hazardous, Toxic, and Radioactive Waste

Introduction

The purpose of this report is to discuss the HTRW investigation for the Resacas in the Vicinity of Brownsville, Texas, Interim Ecosystem Restoration Study. This report identifies both HTRW and non-HTRW environmental issues, and presents appropriate measures to resolve these issues. The methods used in performing the investigation are described in detail. Conclusions and recommendations regarding potential impacts due to HTRW and non-HTRW issues associated with the project site are provided. The purpose of the evaluation is to identify and avoid hazardous, toxic, or radiological wastes (HTRW) sites during planning or implementation of a USACE project, to the extent practicable.

Records Review

A records review gathers and analyzes existing information to identify potential HTRW sites within or near a project area. The records review correlated the standard ASTM environmental record sources and search distances to the proposed footprint of the study alternatives. The recognized environmental conditions (RECs) are discussed below.

Authority

Engineer Regulation (ER) 1165-2-132, Hazardous, Toxic, and Radioactive Waste (HTRW) Guidance for Civil Works projects, requires that a site investigation be conducted as early as possible to identify and evaluate potential HTRW problems. According to ER 1165-2-132, non-HTRW issues that do not comply with the federal, state, and local regulations should be discussed in the HTRW investigation along with HTRW issues.

The HTRW investigation presented in this report was conducted during the feasibility phase of the project. This report was performed at the level of detail required and relies on existing information, observations made through database research, and aerial photograph, topographic map, and historical document review, a site visit, and information provided by the local sponsor.

Hazardous, Toxic, and Radioactive Waste

The objective of ER 1165-2-132 is to outline procedure to facilitate early identification and appropriate consideration of HTRW. This investigation, therefore, identifies potential HTRW and discusses resolutions and/or provides recommendations regarding the HTRW identified.

Non-Hazardous, Toxic, and Radioactive Waste

According to ER 1165-2-132, non-HTRW environmental issues that do not comply with federal, state, and local regulations should be discussed in the HTRW investigation along with HTRW. For example, solid waste is a non-HTRW issue considered. Petroleum releases from leaking underground storage tanks (LUSTs) are not considered HTRW but are regulated under state law. These sites have the potential to impose environmental hazards. Non-HTRW issues identified during the investigation are also discussed in this report, along with resolutions and/or recommendations for resolution.

GUIDANCE

Supplemental guidance was provided by the Standard Practice for Environmental Assessments: Phase I Environmental Site Assessment Process (Designation: E 1527-13) prepared by the American Society for Testing of Materials (ASTM). See Table D-6-1. The purpose of this guidance is to define good commercial and customary practice in the United State of America for conducting an environmental site assessment of a parcel of commercial real estate with respect to the range of contaminants within the scope of the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) (42 U.S.C. § 9601) and petroleum products. These standards recommend that an environmental assessment include a records review, site visit, and interviews.

The goal of the environmental site assessment process is to identify RECs on a property. The term recognized environmental conditions means the presence or likely presence of any hazardous substances or petroleum products in, on, or at a property: (1) due to any release to the environment; (2) under conditions indicative of a release to the environment; or (3) under conditions that pose a material threat of a future release to the environment. De minimis conditions are not recognized environmental conditions; background concentrations of anthropogenic compounds are de minimis.

LAWS AND REGULATIONS

Federal

The definition of HTRW according to ER 1165-2-132, page 1, paragraph 4(a) is as follows: *"Except for dredged material and sediments beneath navigable waters proposed for dredging, for purposes of this guidance, HTRW includes any material listed as 'hazardous substance' under the Comprehensive Environmental Response, Compensation and liability Act, 42 U.S.C. 9601 et seq (CERCLA). (See 42 U.S.C. 9601 (14).) Hazardous substances regulated under CERCLA include 'hazardous wastes' under Sec. 3001 of the Resource Conservation and Recovery Act, 42 U.S.C. 6921 et seq; 'hazardous substances' identified under Section 311 of the Clean Air Act, 33 U.S.C. 1321, 'toxic pollutants' designated under Section 307 of the Clean Water Act, 33 U.S.C. 1317, 'hazardous air pollutants' designated under Section 112 of the Clean Air Act 42, U.S.C. 7412; and 'imminently hazardous chemical substances or mixtures' on which EPA has taken action under Section 7 of the Toxic Substance Contol Act, 15 U.S.C. 2606; these do not include petroleum or natural gas unless already included in the above categories. (See 42 U.S.C. 9601(14).)"*

As noted in 42 U.S.C. 9601(14), the term "hazardous substance" does not include crude oil or any fraction thereof which is not otherwise specifically listed or designated as a hazardous substance, nor does the term include natural gas liquids, liquefied natural gas, or synthetic gas usable for fuel. Underground storage tanks (USTs) are federally regulated under 40 CFR Part 280, which includes technical standards and corrective action requirements for owners and operators of USTs.

Table D-6-1: Standard ASTM Search Distances, Records Review Results, and Sources

ASTM Source	ASTM Distance (miles)	Number of Results	Source Name
Federal National Priorities List (NPL) site list	1.0	0	Environmental Protection Agency (EPA) Cleanups In My Community
Federal Delisted NPL site list	0.5	0	EPA Cleanups In My Community
Federal Comprehensive Environmental Response, Compensation, and Liability, Information System (CERCLIS) (SEMS) list	0.5	0	EPA EnviroFacts
Federal No Further Remedial Action Planned (NFRAP) (SEMS archive) site list	0.5	0	EPA EnviroFacts
Federal Resource Conservation and Recovery Act (RCRA) Corrective Action facilities list	1.0	0	EPA Cleanups In My Community
Federal RCRA TSD facilities list	0.5	0	EPA EnviroFacts
Federal RCRA generators list	Property and adjacent properties only	3	EPA EnviroFacts
Federal ICs/Engineering Control registry	Property only	0	Source not found*
Federal Emergency Response Notification System (ERNS) list	Property only	594*	Right To Know database (rtk.net)
State and tribal equivalent National Priority List (NPL) list	1.0	0	Texas Commission on Environmental Quality (TCEQ) Central Registry
State and tribal equivalent CERCLIS	0.5	0	TCEQ Central Registry
State and tribal landfill and/or solid waste disposal sites	0.5	1	TCEQ Central Registry
State and tribal leaking AST/UST sites	0.5	4	TCEQ Central Registry
State and tribal registered storage tank list	Property and adjacent properties only	326*	TCEQ Central Registry
State and tribal ICs/Engineering Control registry	Property only	0	Source could not be accessed*
State and tribal voluntary cleanup sites	0.5	0	TCEQ Central Registry
Federal, State and tribal Brownfields site list	0.5	1	EPA Cleanups In My Community

** Denotes a data failure*

Federal Resource Conservation and Recovery Act (RCRA) Generators List

The Resource Conservation and Recovery Act (RCRA) generators list identifies sites that generate quantities of waste classified as hazardous under RCRA. Three sites adjacent to resacas to be restored under Alternative 5 were classified as conditionally exempt. The first was classified as a conditionally exempt small quantity generator, the second as a small quantity generator, and the third as unknown. Even with their proximity to the resacas to be restored, no impact is expected to the proposed project from these sites. Their generator status is not sufficient to expect an impact. The site with the unknown generator status is located at 3501 N Vermillion rd., Brownsville, Texas, immediately adjacent to the resaca. The facility is used as an auto parts manufacturer's warehouse, and is not expected to interact with the proposed project.

Site Name	Location	RCRA Status	Latitude	Longitude
Express Cleaners	1601 E. Alton Gloor Blvd.	CESQG	25.98192	-97.48584
Walmart # 5493	7480 Padre Island Blvd.	SQG	25.94492	-97.42556
Inteva Products LLC Warehouse	3501 N. Vermillion Rd.	Unknown	25.95292	-97.41927

Federal Emergency Response Notification System (ERNS) List

The Federal Emergency Response Notification System (ERNS) records and stores information on reported releases of oil and hazardous substances. A search of available ERNS records show that 594 release incidents have been reported to the National Response Center (NRC) from 1982-2016. However, due to the quality of the data, it is impossible to discern whether these releases occurred in any of the resacas being considered for restoration. A review of specific 2016 data showed that all reported releases for that year occurred in the Brownsville Ship Channel, well away from the proposed project. It is reasonable to believe that some of the releases from 1982-2016 occurred in the resacas; however, without specific data showing this, it is impossible to determine the risk to the proposed project.

The failure of this data set to provide enough information is called a data failure.

Federal Institutional Controls/Engineering Controls Database

This search is designed to look for sites where institutional or engineering controls are in place to prevent exposure to contaminants that are left on the site. These controls are typically implemented as part of response or remediation efforts at cleanups sites where the remedy keeps contaminants onsite, such as a capping or groundwater containment and extraction system. No database was found on this topic, and no data could be found for this search. However, the proposed project takes place in areas where no remediation has occurred in the past. Therefore it’s reasonable to deduce that no institutional or engineering controls are in place at the proposed project properties.

State and Tribal Solid Waste Facilities/Landfill Sites

This search is designed to check any state or tribal databases for solid waste handling facilities or landfills in the project vicinity. A site was identified, located at the intersection of W Alton Gloor Blvd. and State Highway 281. The site is referred to as the Flor De Mayo pit, and appears to have an active municipal solid waste permit. However, no other information about this site could be found, including exact location, waste accepted, or contact information. This site is about 0.5 miles from a potential restoration area, but no impact is expected.

State and Tribal Leaking Above Ground Storage Tank (AST) Underground Storage Tank (UST) Sites

This database is a list of leaking petroleum storage tank incidents, maintained by the State of Texas. A search of this database identified 4 sites where active remediation is underway for leaking petroleum storage tanks within a half mile of any of the resacas. None of the sites are expected to impact the proposed project.

Site Name	Location
City Stop 22	5405 South Padre Island Hwy
Dan's Quick Stop	7878 Boca Chica Blvd.
Magic Mart	2100 E Price Rd.
Four Corners Texaco	3375 Boca Chica Blvd.

State and Tribal Registered Storage Tanks

This list is a combination of the State of Texas registered UST and AST databases, representing sites with storage tanks registered with the State of Texas. 326 registered underground storage tanks (USTs) and/or aboveground storage tanks (ASTs) sites were identified within the City of Brownsville.The existence of a registered storage tank (UST or AST) is not sufficient to believe that contamination is likely to be generated, and therefore none of these sites will be carried forward as RECs.

State and Tribal ICs/Engineering Control registry

The State of Texas maintains a database called the Activity Use Limitations (AUL) List, which functions as the state's IC list. This database is proprietary and could not be accessed. Similar to the federal IC database, sites on this list would likely be areas where remediation had been completed and contamination was left in place. No documentation of cleanup sites was found within the proposed action area. Therefore, no ICs or engineering controls are expected.

Brownfields List

The Brownfields database is a list of sites where information has been reported back to EPA Brownfields Assessment office. This does not mean these sites were selected as Brownfields for redevelopment, or that. A site was found in the search area, located at 5800 Stagecoach Trail, which currently houses a church. EPA documentation shows that the site was investigated, but no further action was taken. This site is not expected to impact the proposed project.

3.0 Site Visit

The site visit in environmental investigations is designed to identify environmental conditions that would otherwise not be identified in the records search. The site visit

also is used to look at indoor areas and area usages on the subject property. A site visit was not conducted for this phase of the investigation.

4.0 Interviews

The objective of the interviews is to discover environmental conditions that could not be obtained in the records search, as well as to determine past uses of the subject property. Due to time constraints, no interviews were conducted. If necessary, for further investigation potential interviewees can be identified in the future.

5.0 Conclusion

No sites with recognized environmental condition, were identified within the footprint of the alternatives evaluated.

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APPENDIX D-7

Public Review Comments and USACE Responses

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The Resacas at Brownsville, Texas

Ecosystem Restoration Study

Draft Report and Integrated Environmental Assessment

- Public Comments, and
- District Responses

The public comments that follow are in response to the June 2017 joint notice of availability (Figure D-7-1) and public meeting held 14 June 2017. The notice indicated comments could be provided by email or letter. Three comments were received by email and one by letter.

Attachment A provides the comments.

Attachment B provides the USACE responses to comment.

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DEPARTMENT OF THE ARMY
GALVESTON DISTRICT, CORPS OF ENGINEERS
P. O. BOX 1229
GALVESTON, TEXAS 77553-1229

JOINT NOTICE OF AVAILABILITY
DRAFT FEASIBILITY STUDY AND INTEGRATED ENVIRONMENTAL ASSESSMENT
FOR THE PROPOSED U.S. ARMY CORPS OF ENGINEERS
RESACAS AT BROWNSVILLE ECOSYSTEM RESOTRATION
CAMERON COUNTY, TEXAS
June 2017

The public is hereby notified of the draft Integrated Feasibility Report and Environmental Assessment (EA) for the Resacas at Brownsville Ecosystem Restoration Study (Cameron County, Texas), prepared by the U.S. Army Corps of Engineers, Galveston District (USACE), in partnership with Brownsville Public Utilities Board (BPUB). Authorized by Congress in a resolution from the House Committee on Transportation and Infrastructure dated November 10, 1999, the study is a vital tool produced and used by the U.S. Army Corps of Engineers (USACE) to guide the responsible stewardship of USACE administered resources for the benefit of present and future generations. The report is also available for download at the following URL address:

http://www.swg.usace.army.mil/BusinessWithUs/PlanningEnvironmentalBranch/DocumentsforPublicReview.aspx

Compact disc (CD) copies of the report can be requested from Mr. Harmon Brown at the address above. In addition, CDs of the report are available for viewing at the following libraries:

- Brownsville Public Library (Main Branch), 2600 Central Blvd., Brownsville, TX 78520
- Brownsville Public Library (Southmost Branch), 4320 Southmost Blvd., Brownsville, TX 78521

A public information meeting will be held in the Brownsville area during the public comment period. Please refer to the Galveston District website at http://www.swg.usace.army.mil/ for the upcoming announcement of a meeting date and location.

The USACE will accept written public comments on the integrated report for a 30-day period starting on June 12, 2017 and continuing through July 12, 2017. Comments on the report must be postmarked by July 12, 2017. You may send written comments or questions to the USACE, Galveston District, Attn: Harmon Brown, P.O. Box 1229, Galveston, TX 77553-1229, or you may email comments or questions to Harmon.Brown@usace.army.mil.

This public notice is also issued for the purpose of advising all known interested persons that there is pending before the TCEQ a decision on water quality certification. Any comments concerning this application may be submitted to the TCEQ, 401 Coordinator, MSC-150, P.O. Box 13087, Austin, Texas 78711-3087. A copy of the public notice, with a description of work, has been made available for review in the TCEQ's Austin office.

07 June 2017
Date

Brian Harper
Chief, Civil Planning Branch

Figure D-7-1: Joint Notice of Availability

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Attachment A – Public Comments

Comment provided at the public meeting.

June 14, 2017

Dear U.S. Army Corp. of Engineers and Brownsville PUB,

My name is Melissa Landin, and I am an executive board member for Hooked for Life, Kids Gone Fish'n. We organize an annual event held at one of Brownsville's beautiful resacas. This year marked our 8th annual event.

Each year, more than 5,000 people attend our event where many learn to fish for the first time. It is an all-free, community event. Each child -- ages 0-16 -- goes home with a free fishing rod, bait, lunch, a goodie bag and more. But more importantly, they begin to develop a love for fishing.

The Brownsville Public Utilities Board has been a tremendous partner with helping us to provide this quality-of-life event for our City. And, with the event being held at one of Brownsville's beautiful resacas, Hooked for Life fully supports the city's efforts to restore and improve upon our resaca system.

Brownsville's resacas are a jewel in the community – from kayak use to fishing.

Oftentimes, I see children and families enjoying some fishing on our resacas. And oftentimes, you'll see a group of kiddoes balancing their bicycles' handles with one hand as they hold a rod in the other. Where are they going? Fishing with friends at one of our many resacas. We have a saying: "Trade in that Xbox for a Tackle Box." And, it is because our resacas are plentiful and accessible that Brownsville's children can enjoy this virtually free pastime. Restoring and improving our resacas will allow more families to enjoy some quality time fishing.

Hooked for Life fully and wholeheartedly supports the Brownsville Public Utilities Board and the U.S. Army Corp. of Engineers in all efforts to restore and improve our resacas.

Sincerely,

Melissa Landin

From: Elizabeth Caro
Sent: Thursday, July 13, 2017 1:58 PM
To: Brown, Harmon III CIV USARMY CESWF (US)
Subject: Resaca Restoration Brownsville, Texas

To whom my concern:

Hello to all, my name is Elizabeth Caro I'm an activist, I 'm doing a project to protect the wildlife in the Resacas in Brownsville, Texas.

In the past, I contact many people working in different Agencies and areas, PUB, CITY OF BROWNSVILLE, WILDLIFE, US ARMY expressing my concerns about the Resacas, my biggest concern is all the Wildlife around the Resacas, ducks, birds, turtles, nutrias fishes etc.....

I'm really concern regarding the ducks and bird's because the population is shrinking, to the point in some resacas you don't see any ducks anymore.

The quality of water is very important too, contamination and all kinds of garbage is a serious problem, in the past after conversation with different people with PUB, CITY OF BROWNSVILLE, WILDLIFE, WAS NOT CLEAR WHAT HAPPEN WITH THE FISHES AND TURTLES, WHEN PEOPLE IS WORKING IN THE RESACAS, BUT SAME TIME ABOUT THE TRIMMING WITH NOT SUPERVISION AND CONTROL, I ASK SOME PEOPLE AND EACH TELL ME THAT THEY ARE NOT RESPONSABLE.

FOR PRESERVATION WE NEED TO WORK TOGETHER WITH PROTECTING THE NATIVE, GRASS, PLANTS BUSHES AND TREES, THEY ARE TRIMING WITH NO CONTROL AND SUPERVISION AND IT’S DESTROYING THE WILDLIFE HABITAT.

CONSERVATION IS VERY IMPORTANT TOO AND HELP THE HABITAT FOR ALL DIFFERENT SPECIES CREATING THE NATURAL HABITAT AND HELPING THEM WITH THE FOOD SOURCES.

In 2016, I send an email to several people expressing my concerns with no answer from the city of Brownsville, sad very sad.

I'M REQUESTING THE FOLLOWING:

1-Short time projects, long time projects affect the wildlife habitat.

2-Please do by parts, no all in the same time, because do a lot damage to the animals. Ducks and birds turtles are walking in the street looking for food and people are running over them.

3-Protect natural grass, plants, trees and bushes, THIS IS SO IMPORTANTAS A FOOD SOURCE AND FOR SHELTER.

4-CREATING SMALL ISLANDS IN THE RESACAS THIS CAN HELP A LOT TO PROTECT THE EGS AND THE NEST, FOR THE DUCKS AND BIRDS AND HELPING THEM IN THE SAME TIME for a place to rest and protect themselves from people, predators, street dogs etc...

5-Keep bushes and plants in the surrounding areas, somebody working for the city of Pub, in the past they trim and they cut a lot of plants and trees leaving some of the resacas with few or nothing and this resacas you don't see ducks or big birds any more.

6-SUPER IMPORTANT ALEGATORS; The local news make a report from alligators in the resacas. I'm requesting to remove them and placed in one place to have a control of them, before is a social problem with out of control, this is very important to help for preservation, for the local ducks birds, turtles and all the wildlife around. Also this can cause a lot of problems for family's who own a house with a Resaca property, other places remove the alligators or crocodiles to keep track of them. The City of Brownsville need to take action before is too late.

7-Garbage, sample Resaca cemetery is done and It's so sad the amount of garbage around for months I don't' see any agency cleaning inside the Resaca, I go every day is how I know this is happening. I'm requesting a plan to maintain clean with out of garbage, the contamination is a serious problem.

8-Fishing: I see people fishing with a fishing net in the resacas and taken the fish in trucks, in the weekends in some places people do that, putting the fish population in risk and to other wildlife depending in fish, like pelicans, ducks etc. I'm requesting a plan to help the wildlife in the resacas with laws about fishing, but also ducks and birds kill from people intentionally with no mercy. REQUESTING SIGNS IN ENGLISH AND SPANISH WITH RULES AND PENALITIES ALSO IS GOOD TO TECH PEOPLE, WHAT NOT TO DO IN THE RESACAS.

9-THE DUCKS POPULATION AND BIRDS HAVE BEEN DECLINING NOW FOR MANY REASONS AND WE NEED TO DO SOMETHING TO HELP THE POPULATION GROW...THIS IS WHAT I'M DOING BY MY SELF FOR YEARS IN SOME RESACAS, BUT WE NEED TO WORK TOGETHER TO HELP THE HABITAT. NOTE: Sometimes people forget the animals and birds, like us, they need food sources, shelter, place for rest, in hot or cold weather, plants, trees and bushes for shade, places to have the eggs protected, clean water, the Ducks are always looking for clean fresh water.

This is a sample and I tell Rene with PUB and Ellie with the army, the Resaca in Bernard is one of my biggest concern.

10-TRAFIC Some streets have a busy traffic but others no, the sad thing some people speed and run over ducks or turtles, some areas need signs from duck crossing and

turtle crossing too. Requesting the police, check very close to resacas the people speed when they driving, near Resacas.

I'm ready to help. I love to do my part of this project with the resacas, because I love our Resacas and the Wildlife, but the Ducks and birds are my number one concern.

Thanks to all for taken the time reading this email, so let’s do something together.

Any question please call me at 956-204-1930 <tel:(956)%20204-1930> or send me an email to, thanks so much, to hope you have a great day!!

Sincerely,

Elizabeth Caro.

From: Kenneth Teague
Sent: Wednesday, June 28, 2017 2:42 PM
To: Brown, Harmon III CIV USARMY CESWF (US)

Subject: Fw: DRAFT FEASIBILITY STUDY AND INTEGRATED ENVIRONMENTAL ASSESSMENT FOR THE PROPOSED U.S. ARMY CORPS OF ENGINEERS RESACAS AT BROWNSVILLE ECOSYSTEM RESOTRATION CAMERON COUNTY, TEXAS

Dear Mr. Brown: I reviewed the DRAFT FEASIBILITY STUDY AND INTEGRATED ENVIRONMENTAL ASSESSMENT FOR THE PROPOSED U.S. ARMY CORPS OF ENGINEERS RESACAS AT BROWNSVILLE ECOSYSTEM RESOTRATION CAMERON COUNTY, TEXAS, and I have the following comments:

* While it seems reasonably likely the proposed project will have significantly positive impacts, if the sediments proposed to be dredged and disposed are not contaminated, apparently nobody has appropriately evaluated this latter critical question.

* The resacas have received decades of runoff from urban, residential, and agricultural landscapes. It is reasonably likely that some of the sediments are excessively contaminated with metals, PAHs, and /or pesticides. This analysis did not address these risks.

* I recommend a revised EA or EIS, including the results of a high quality sediment contaminant study conducted as per the requirements of the Inland Testing Manual and/or the Upland Testing Manual. Potential effects of dredged material disposal on water quality and sediment quality should be evaluated.

* In addition, depending on the proposed dredged material disposal location and management, the potential for upland soil contamination should be evaluated.

* If such evaluations are not conducted prior to finalization of NEPA compliance documents for this project, the Corps will not be in compliance with the National Environmental Policy Act.

I hope the Corps and the local sponsor have the wisdom, ethical compass, and technical strength to see that the absence of a robust evaluation of resaca sediment quality is a very unfortunate oversight that must be corrected prior to making a determination that the proposed project will not have a significant impact on the human environment.

Sincerely,

Kenneth G. Teague, PWS, Certified Senior Ecologist

From: Jude Benavides
Sent: Wednesday, July 12, 2017 5:01 PM
To: Brown, Harmon III CIV USARMY CESWF
Subject: comments - Brownsville Resacas

Where to start – hmmmmmm. I've been working on and off on resacas since 1990 and have been through several rounds of USACE involvement. I realized too late the deadline for submitting comments is today.

There are too many details and issues to go into to discuss in one comment entry, but I will attempt to briefly summarize one major point here.

Any attempt to study and/or restore ecosystems of Brownsville area resacas must be conducted via a carefully planned out and agreed upon SYSTEM-wide level that appreciates the many roles they played historically and presently.

Resacas are poorly understood by many, including the majority of those who have worked on them or studied them at the state and federal level.

I applaud the write-up and work done to date through this effort by the Corps. I also applaud the attempt made to address them in a combined and holistic approach that appreciates their various functions.

However, I'm deeply concerned that the final proposed outcome of this effort relies far too heavily (or even demands) an upfront disconnect between ecosystem function and their hydrology.

Specifically:

1. I see very little acknowledgement of what can or should really be considered a baseline to which to restore. Furthermore, there should be multiple baselines and goals as some Resaca systems or portions of a connected system may best be reallocated to a new use or ecosystem.

2. I do not believe there is sufficient emphasis on how riparian ecosystem both relies on and connects with the changed hydrology of the resacas and how multiple uses of the existing systems might benefit. If the goal can only be "riparian plant habitat" or "aquatic plant habitat" in a vacuum, separate from hydrology, storm water contributing area land use, etc. we are really wasting out time.

3. Requiring local stakeholder (partner) to acquire and apparently maintain miles of extremely narrow, restored riparian ecosystem on once private property is not only a near political impossibility, but will result in very little acreage that is truly sustainable. This is particularly true for the majority of the sections for which local stormwater is conveyed to the resacas via underground storm drains and not through overland flow.

4. I encourage the Corps to truly work with local experts and stakeholders on how we can continue to move forward on the good work done (great write-up, decent maps, relevance of specific flora to ecosystem function) and start on a truly system-wide, holistic approach toward ecosystem function of the resacas. This will require hydrologic modifications (all of which that are currently proposed are feasible and possible – ie flow augmentation from scalped river water), considering water quality improvements (working with the EPA), and creating agreed upon baselines and alternatives to strict / broad restoration.

Thanks,

Jude A. Benavides, Ph.D.

Associate Professor of Hydrology and Environmental Sciences

School of Earth, Environmental, and Marine Sciences

UTRGV – Brownsville Campus

Attachment B – Responses to Public Comments

1. Response to comment card by Melissa Landin: Comment Noted.

2. Responses to email comments by Elizabeth Caro. The proposed project would be implemented in stages over a 16 year period. Existing native vegetation would be incorporated where feasible. The proposed project goal is to restore the vegetation to one of three critically imperiled vegetation associations: Texas Ebony Resaca Forest, Subtropical Texas Palmetto Woodland, and Texas Ebony/Snake-eyes Shrubland. Existing vegetation that is a component of these species may be incorporated. The creation of islands to increase habitat benefits were screened out of the initial array of alternatives due to the relatively high cost associated with island construction and comparison to the resulting habitat benefits. The Operation and Maintenance (O&M) for the ecosystem restoration does not allow for pruning of native species. Non-native and invasive species would be controlled and managed by the BPUB. The proposed ecosystem restoration is designed to create native habitats for all native fish and wildlife species. Although the proposed project does not create habitat specific to alligators, the project would create habitat that alligators could use. Restored native riparian vegetation would filter trash, excessive nutrients, and contaminants from the Resacas. The proposed restoration project would not restrict fishing beyond TPWD and City of Brownsville fishing regulations. The restored aquatic and riparian habitats would increase the water quality for fish, amphibians, and other wildlife. The proposed ecosystem restoration project would improve habitat (including food, nesting cover, and shelter) for all native wildlife inhabiting the Resacas. The regulation of traffic adjacent to the study area is beyond the scope of this project.

3. Response to email comments by Kenneth G. Teague, PWS, Certified Senior Ecologist. We share your concern for the potential for contaminants in the sediments to be dredged from the Resacas. We are currently basing our plan of action on the testing conducted by the BPUB on a limited number of Resacas. That analysis indicates no contaminants have been found in concentrations greater than guided by EPA standards. We will precede to the next phase of investigation at which time additional sediment sampling and testing will occur for all construction areas. If contaminated sediments are identified, dredging plans will be reassessed and a subsequent plan of action will be developed based on the type(s) and scope of contamination that may be found. In addition, it is our standard operating procedure to have contingency plans that the dredging contractor would follow if they encounter any materials they suspect are contaminated. The first action of those plans is to stop work and notify the construction inspector.

4. Response to Jude A. Benavides, Ph.D. Comment noted.

APPENDIX D-8

USFWS Letter of Support for Comprehensive Implementation

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United States Department of the Interior

FISH AND WILDLIFE SERVICE

South Texas Refuge Complex HQ

3325 Green Jay Road
Alamo, Texas 78516

Lower Rio Grande Valley National Wildlife Refuge
Laguna Atascosa National Wildlife Refuge
Santa Ana National Wildlife Refuge

October 18, 2017

Mr. Danny Allen
U.S. Army Corps of Engineers
Regional Planning and Environmental Center, Environmental Compliance Branch
819 Taylor St, Room 3A12
Fort Worth, TX 76102

You requested a letter of support from our agency regarding a comprehensive wetland (resacas) restoration effort previously initiated in the Brownsville, Texas area. Currently, your agency is conducting a feasibility study that is evaluating additional wetland improvements and adjacent upland habitat restoration actions.

A former staff member of mine, Chris Hathcock, Wildlife Refuge Specialist, previously participated in initial meetings and discussions as well as participated in some of the restoration efforts for the network of resacas that surround the greater Brownsville area. My understanding is that this effort is in part an initiative by the City of Brownsville to modify resacas for increasing their freshwater storage capability, but also for purposes of protecting and enhancing the adjacent resaca habitat to benefit local wildlife species. The resaca and adjacent upland habitat protection is an effort our agency strongly supports.

U.S. Fish & Wildlife Service finds that the habitat restoration and wetland protection efforts being planned by the City of Brownsville and the U.S. Army Corps of Engineers for their area resacas is consistent with our own agencies land and wetland management practices. In addition, it is my understanding that the Lower Rio Grande Valley National Wildlife Refuge has properties included in the current Feasibility Study which is evaluating further improvements to resacas. The specific properties under evaluation include the Fish Hatchery Tract and Villanueva Tract—both of which could benefit from additional wetland/upland habitat improvements (see Attachments). We support including these properties in your evaluation.

Following finalization of the Feasibility Study, we look forward to future collaboration with you and the City of Brownsville implementation team to insure the habitat restoration efforts on-refuge and City-wide meet the needs of the local community and resident wildlife.

Please let me know if there is anything else you need from me to support this effort. I look forward to working with you more in the future as the study reaches the implementation phases.

Sincerely,

Bryan R. Winton
Refuge Manager
Lower Rio Grande Valley NWR

cc: Robert D. Jess, Project Leader, South Texas Refuge Complex
Ernesto Reyes, Wildlife Biologist, Corpus Christi Ecological Services Field Office (Alamo Station)


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