ATTACHMENT D-6

HISTORIC RESOURCES SURVEY REPORT

NON-ARCHEOLOGICAL HISTORIC RESOURCES SURVEY REPORT
Gulf Intracoastal Waterway, Brazos River Floodgates and Colorado River Locks Feasibility Study
Brazoria and Matagorda Counties, Texas

Prepared for

US Army Corps of Engineers ®
Galveston District

AND

Texas Department of Transportation ®

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EXECUTIVE SUMMARY

The United States Army Corps of Engineers (USACE), in cooperation with the Texas Department of Transportation (TxDOT) Maritime Division, is conducting the *Gulf Intracoastal Waterway (GIWW), Brazos River Floodgates and Colorado River Locks Systems Feasibility Study* to determine the feasibility of modifying the Brazos River Floodgates (BRFG) and Colorado River Locks (CRL) to reduce navigation impacts and costly waterborne traffic delays that are a result of aging infrastructure and inadequate channel dimensions. The Feasibility Study will result in an integrated Feasibility Report and Environmental Impact Statement (FR/EIS) in compliance with the National Environmental Policy Act (NEPA) and other Federal, state, and local environmental policies and procedures.

Blanton & Associates, Inc. (B&A) conducted a non-archeological historic resources survey of the BRFG, located in Brazoria County, and CRL, located in Matagorda County, in accordance with Section 106 of the National Historic Preservation Act (NHPA) under 36 Code of Federal Regulations (CFR) 800, with the USACE as the lead federal agency. The purpose of the historic resources survey was to identify properties listed in or eligible for the National Register of Historic Places (NRHP) within the Area of Potential Effect (APE), and if any NRHP-listed or NRHP-eligible properties are located in the APE, to assess the potential effects on those properties. This effort consisted of documenting, inventorying, and assessing the historic-age properties within the proposed APE. The definitions of historic-age properties and APE are as follows:

- *Historic-age Properties:* The survey cutoff date is 1975, based on an estimated construction date of 2020. Although the National Park Service guidelines state that in order for a property to be eligible for the NRHP it must be at least 50 years old, an additional five years was subtracted in order to account for delays in project planning or funding. "Historic-age" properties in this report are defined as properties with resources built in or before 1975.[1]

- *Area of Potential Effect:* Due to the nature of the undertaking within the water and insular nature of the study areas, the APE is 500 feet from each proposed study areas. B&A surveyed historic-age properties within each APE. The USACE sent a July 20, 2017 letter to the Texas State Preservation Office (SHPO) requesting concurrence with the proposed 500-foot APEs. The SHPO concurred with the APEs on July 25, 2017.

B&A historians reviewed the Texas Historical Commission *Texas Historic Sites Atlas* to identify the previously identified historic resources listed on the NRHP, designated as National Historic Landmarks (NHL), Recorded Texas Historic Landmarks (RTHL), on the list of standing structure State Antiquities Landmarks (SALs), and on the list of Official Texas Historical Markers (OTHM) within each 500-foot APE. No NHL, NRHP, RTHL, SAL, or OTHM resources are located within the APE.

In July 2017, B&A historians performed a reconnaissance-level survey and identified a total of 25 historic-age resources located within the APEs. The BRFG APE had 10 resources (Resource Nos. 1A, 1B, 2, 3, 4, 5, 6, 7, 8, and 9) and the CRL APE had 15 resources (Resource Nos. 10A, 10B, 11, 12, 13, 14, 15, 16, 17,

[1] Properties less than 50 years old have to be considered of exceptional importance (see discussion of NRHP Criterion Consideration G in **Section 7.1** for more information about resources less than 50 years old).

18, 19, 20, 21, 22, and 23). B&A historians recommend that none of these historic-age resources are eligible for listing on the NRHP.

As a result of this reconnaissance-level survey, it is anticipated that no further work will be required in accordance with Section 106 of the NHPA (36 CFR 800).

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Appendices

1.0 INTRODUCTION

The United States Army Corps of Engineers (USACE), in cooperation with the Texas Department of Transportation (TxDOT) Maritime Division, is conducting the *Gulf Intracoastal Waterway (GIWW), Brazos River Floodgates and Colorado River Locks Systems Feasibility Study* to determine the feasibility of modifying the Brazos River Floodgates (BRFG) and Colorado River Locks (CRL) to reduce navigation impacts and costly waterborne traffic delays that are a result of aging infrastructure and inadequate channel dimensions. The Feasibility Study will result in an integrated Feasibility Report and Environmental Impact Statement (FR/EIS) in compliance with the National Environmental Policy Act (NEPA) and other Federal, state, and local environmental policies and procedures.

In July and August 2017, Blanton & Associates, Inc. (B&A) conducted a non-archeological historic resource survey of the BRFG, located in Brazoria County and the CRL, located in Matagorda County (**Figure 1** in **Appendix A**).

The survey was conducted in accordance with Section 106 of the National Historic Preservation Act (NHPA) under 36 Code of Federal Regulations (CFR) 800, with the USACE as the lead federal agency. The purpose of the historic resources survey was to identify properties listed in or eligible for the National Register of Historic Places (NRHP) within the Area of Potential Effect (APE), and if any NRHP-listed or NRHP-eligible properties are located in the APE, to assess the potential effects on those properties. This report was also completed in accordance with the Secretary of Interior's (SOI) *Standards for Identification*, and the intended use of this survey report is for the USACE's compliance activities with the Texas State Historic Preservation Office (SHPO) under Section 106 of the NHPA. This report may also be used to document compliance with the National Environmental Policy Act (NEPA) and the Antiquities Code of Texas (ACT).

Attached to this report are several appendices that provide maps, graphics, photographs, and other materials that supplement the text. **Appendix A** includes a location map labeled as **Figure 1**, and inventoried resources maps labeled as **Figures 2** and **3**. **Appendix B** is a summary table that lists the resources that were inventoried in the APE. Survey forms (including photographs) for each of the inventoried resources are in **Appendix C**. Study area photographs are included as Photos D1 through D36 in **Appendix D**. The study area photographs are grouped as follows:

- Brazos River Floodgates - West Floodgates (Photographs D1 through D8)
- Brazos River Floodgates - East Floodgates (Photographs D9 through D16)
- Colorado River Locks - West Locks (Photographs D17 through D22)
- Colorado River Locks - East Locks (Photographs D23 through D36)

This report documents the results of the historic resources survey, which identified 25 historic-age resources within the APE. This report recommends that no NRHP-eligible and/or NRHP-listed properties are present within the APE. As a result, no assessment of adverse effects is necessary under Section 106 of the NHPA, and none of the alternatives have the potential to affect non-archeological historic properties.

2.0 PROJECT DESCRIPTION

The USACE and TxDOT Maritime Division are evaluating the feasibility of modifying the BRFG and CRL to reduce navigation impacts and costly waterborne traffic delays that are a result of aging infrastructure and inadequate channel dimensions. The BRFG are located on the GIWW in Brazoria County and consist of one set of two steel sector gates with guide walls on each side of the Brazos River. A control house is adjacent to each set of gates on the north side of the GIWW. Both sets of gates have several additional office buildings to the north of the control houses. The CRL are located on the GIWW in Matagorda County, approximately 40 miles southwest of the BRFG. They consist of two sets of two steel sector gates with guide walls on each side of the Colorado River. Control houses are located adjacent to each set of gates on both the west and east sides of the river. The west side also has a small building north of the control houses, while the east side has several small buildings north of the control houses.

After evaluation of various alternatives and alternative combinations, current alternatives at BRFG include the no-action alternative; removing the floodgates and creating an open channel; rebuilding the floodgates to be wider and farther from the Brazos River; rehabilitating the floodgates; and realigning the GIWW to the north and building new floodgates on the new alignment. At the CRL, current alternatives include the no-action alternative, removing the locks and creating an open channel; and rehabilitating the locks with guide walls and possible widening.

Figures 2 and **3** show the study area at the BRFG and CRL, respectively. The study areas shown encompass the maximum disturbance area for the reasonable alternatives. None of the alternatives considered include work within or on the existing flood-control levees at the Brazos River or Colorado River. Some of the alternatives will require dredging and management of dredged material. Currently, dredged material is expected to be placed within existing USACE dredged material placement areas (DMPAs).

3.0 PROJECT LOCATION AND SETTING

The BRFG and CRL are located in Brazoria and Matagorda Counties, Texas, respectively (**Figure 1**). The BRFG study area is southwest of the city of Freeport and located along the GIWW at the junction of the Brazos River and the GIWW. The CRL study area is south of the town of Matagorda and located along the GIWW at the junction of the Colorado River and the GIWW. The APE for both sites is 500 feet from the study areas. The BRFG and CRL study areas are largely undeveloped, with open water, emergent marsh, and upland shrub/woods being the major land cover types in both study areas. Some livestock grazing occurs within these areas.

The BRFG is largely surrounded by undeveloped land including the Justin Hurst Wildlife Management Area to the west. Undeveloped land to the south acts as a buffer between the GIWW and the Gulf of Mexico. The Department of Energy's Bryan Mound Strategic Petroleum Reserve is located approximately one mile north of the east BRFG. Texas Boat and Barge, Inc. has a small barge area directly north of the east floodgate. The BRFG facility consists of floodgates and support buildings including control houses, power houses, office buildings, sheds, and a boat house. The main transportation facilities in the BRFG APE consist of one paved road extending from SH 36 south to each floodgate area (also signed East and West Floodgate Roads)

At the CRL, East Matagorda Bay and Matagorda Bay, as well as several barrier islands, act as a buffer between the GIWW and the Gulf of Mexico. The CRL is surrounded by undeveloped land, as well as the town of Matagorda directly north of the locks. The CRL facility consists of the locks and support buildings including control houses, power houses, office buildings, sheds, a pump house, garage, and boat house. The main transportation facilities in the CRL APE consist of one paved road extending from Matagorda Avenue to the east floodgate. The west floodgate is only accessible via boat. Farm-to-Market (FM) 2031 (locally signed Beach Road) extends from the town of Matagorda on the east side of the Colorado River, south to the Gulf of Mexico. A section of the Matagorda ring levee is also located within the CRL APE. The ring levee surrounds the town of Matagorda to protect against flooding. Finally, residences line the east side of the original Colorado River channel south of the CRL. Two of these residences are located within the CRL APE.

4.0 RESEARCH AND SURVEY METHODOLOGY

B&A conducted the research and survey for this feasibility study in accordance with the SOI's *Standards for Identification* and *Standards for Evaluation*. The purpose of the research and field investigations was to determine whether any NRHP-eligible or NRHP-listed properties were located within the APE and to assess potential effects to these properties. The research and survey were completed by B&A historians who meet the SOI's *Professional Qualifications Standards* for professional historians (see 36 CFR 61). The following describes the methodology used.

4.1 Research

Prior to fieldwork, B&A historians conducted a literature review to gain an understanding of the study area's historical background and significant themes. B&A examined available reports, studies, maps, and other data pertinent to the APE. This task commenced with an investigation the SHPO's Texas *Historic Sites Atlas* Online and the National Register Information System (NRIS) website. No previously identified historic properties are located within each 500-foot APE.

Before, during, and after the completion of fieldwork, B&A historians conducted research of published and unpublished materials, aerial photographs, and maps that were gathered from online sources, as well as repositories in Austin, Lake Jackson, Freeport, and Matagorda. B&A historians also reviewed the Historic American Engineering Survey (HAER) documentations and NRHP nominations on locks, floodgates, and other water-related transportation resources in Texas and in the United States (U.S.). Additionally, B&A historians contacted several people (listed below) to gain an understanding of the BRFG and CRL, their history, how they function, and how they compare to other similar resources along the Gulf Coast and throughout the U.S.:

- Robert (Bob) Page, USACE BRFG Lock Master - *provided information about how the BRFG functions, historical photographs of the BRFG and property, and as-built plans for the BRFG*
- Robert George, USACE CRL Lock Master - *historical photographs of the CRL and property and as-built plans for the CRL*

- Jesse Deshotels, USACE CRL Lock Equipment Mechanic - *provided information about how the CRL function*
- Greg Katzenberger, TetraTech Structural Engineer - *consulting engineer on the feasibility study; provided information about how the BRFG and CRL function, as well as similar types of structures located along the Gulf Coast.*
- Josh Carter, Mott MacDonald Coastal Engineer - *consulting engineer on the feasibility study; provided information about how the BRFG and CRL function, as well as similar types of structures located along the Gulf Coast.*
- Duncan Hay, NPS Senior Historian - *author of several NRHP nominations and HAER documentations for water-related transportation resources; provided information about other similar structures in the U.S.*

B&A reviewed several dozen online and printed material sources during the research process, all of which are listed in **Section 10.0 Bibliography**. Information gathered from these sources is presented in **Section 6.0 Historic Context**.

4.2 NPS Guidance, NRHP Nominations, and Field Guides

To aid in the identification and evaluation process, B&A historians utilized the NPS Bulletins, NRHP Nominations, and Fields Guides:

- *National Register Bulletin: Guidelines for Evaluating and Document Rural Historic Landscapes* (no date)
- *National Register Bulletin: How to Apply the National Register Criteria for Evaluation* (1990, revised 1997)
- *National Register Bulletin: How to Complete the National Register Registration Form* (1991, revised 1999)
- *New York State Barge Canal National Register Nomination* (2014)
- *A Field Guide to Irrigation in the Lower Rio Grande Valley* (2009) (select information on general levee construction)

4.3 Survey and Field Investigations

NPS guidelines state that historic properties are generally 50 years old or older. To account for delays in project planning and/or funding, B&A used a 45-year threshold. As a result, based on an estimated construction date of 2020, the survey cut-off date is 1975. Therefore, "historic-age" properties in this report are defined as resources built in or before 1975. The APE for both the BRFG and CRL is 500 feet from the study area.

The week of July 31, 2017, a B&A historian conducted a field survey of both APEs. During the survey, USACE employees accompanied a B&A historian to gain access to each of the BRFG and CRL gates and surrounding USACE property. Additionally, a USACE employee drove the B&A historian via boat on the

GIWW through the BRFG and CRL, not only to document the resources from the water but also to access the west floodgates and locks. The majority of the photos of the floodgates, lock gates, and control houses were taken from the boat, on the GIWW or at the confluence of the GIWW and Brazos or Colorado Rivers. Photographic documentation of the historic-age resources located within both APEs are included in **Appendix C**. Overall photographs of the BRFG and CRL properties are included in **Appendix D**.

B&A numbered the inventoried resources as follows:

- The resources at the BRFG are numbered 1A-9, and the resources at the CRL are numbered 10A-19. The remaining resources in the CRL APE are unassociated with the CRL itself and are numbered 20-23.

- Both the west and east set of gates at the BRFG work as an integrated system, as do the west and east locks at the CRL. Therefore, the BRFG gates were inventoried as 1A (west gates) and 1B (east gates), while the CRL locks were inventoried as 10A (west locks) and 10B (east locks).

- There are support buildings at both sites (office buildings, power houses, control houses, sheds, boat houses, a pump house, and garage). These buildings at the BRFG are numbered 2-9, while the support buildings at the CRL are numbered 11-19.

Finally, the BRFG and CRL inventoried resources are most accurately described as transportation-related resources. They are located in a navigation feature (GIWW) and are intended to protect the GIWW from excessive sedimentation and reduce maintenance of the GIWW. Additionally, the second set of lock gates at the CRL are specifically to aid navigation. Therefore, as noted in the inventory table in **Appendix B** and survey forms in **Appendix C**, the BRFG and CRL resources are categorized as "Transportation (water-related)/Subfunction." For example, the floodgates (Resource Nos. 1A and 1B) are categorized as "Transportation (water-related)/Floodgates" while the locks (Resource Nos. 10A and 10B) are "Transportation (water related)/River locks."

5.0 PREVIOUSLY IDENTIFIED PROPERTIES

B&A reviewed the SHPO's *Texas Historic Sites Atlas* to identify properties listed on the NRHP, designated as National Historic Landmarks (NHL) or Recorded Texas Historic Landmarks (RTHLs), standing structure State Antiquities Landmarks (SALs), and Official Texas Historical Markers (OTHMs) within each 500-foot APE. Results of this review revealed that within each 500-foot APE, there are no properties listed on the NRHP, designated as NHLs or RTHLs, standing structure SALs, or OTHMs.

6.0 HISTORIC CONTEXT

B&A historians determined that the NPS' *National Register Bulletin 16B: How to Complete the Multiple Property Documentation Form* offered the most applicable guidelines for constructing a historic context. While this NPS bulletin offers an outline of how to complete a historic context for multiple property types, the application for Section 106 compliance reports requires discussion of properties that may not be eligible under the NRHP. As such, a historic context developed under Section 106 will be slightly different than

that developed for an NRHP nomination. In addition, B&A historians reviewed NPS white paper "The Components of a Historic Context" to help facilitate the formatting and organization of identified historic properties into discernible contextual components.[2] For clarity, the historic contexts for the BRFG and the CRL are two separate discussions below.

6.1 Historic Context of the Brazos River Floodgates

Founded in 1836, Brazoria County was one of the original 23 counties of the Republic of Texas. By the late 1840s, the county had approximately 4,600 inhabitants.[3] The early economy focused on sugar cane and cotton cultivation and the coastal shipping industry. The Reconstruction years after the U.S. Civil War marked major transportation improvements in the county, providing opportunities for trade to regional and outside markets. Businesses dredged portions of bays, lakes, rivers, and bayous to create an informal transportation system between coastal cities. One such business was the Galveston and Brazos Navigation Company, which completed a canal in 1854 that connected West Galveston Bay to the Brazos River. This canal would later be incorporated into the GIWW.[4] Railroads also provided connectivity between coastal towns and markets, and by 1860, the Houston Tap and Brazoria Railway extended from Houston to Columbia at the Brazos River.[5] In 1874, the USACE completed a survey for an intracoastal waterway route from Donaldson, Louisiana to the Rio Grande in Texas; however, a loss of interest stalled construction of the project for several decades. Around the turn of the twentieth century, the loose-knit community of Freeport, Texas was settled and a post office was established, but development halted when the Galveston Hurricane made landfall in 1900 and virtually decimated the Brazoria County coastline. Prior to the hurricane, Brazoria County had nearly 15,000 residents, but by 1910 the county's population dropped to just over 13,000.[6]

The first few decades of the twentieth century along coastal Brazoria County were characterized by a renewed interest in creating an intracoastal waterway and emerging petroleum and sulfur extraction businesses. Also during the early twentieth century, the USACE constructed the GIWW from Texas to the Florida panhandle. In 1905, the USACE began construction of the GIWW in Texas, connecting Corpus

[2] According to NPS NRHP reviewer Barbara Wyatt, a well written historic context "should be considered a summary document, not a thesis… [presenting] relevant information, and [avoiding] extraneous information." Barbara Wyatt, "The Components of a Historic Context: A National Register White Paper" (US Department of Interior, National Park Service, Unpublished Draft, 2009); accessible online at http://www.nps.gov/history/nr/publications/policy.htm.

[3] Diana J. Kleiner, "Brazoria County," *Handbook of Texas Online*, accessed March 21, 2017, http://www.tshaonline.org/handbook/online/articles/hcb12.

[4] Texas Department of Transportation – Transportation Planning and Programming Division, "Gulf Intracoastal Waterway, 2005-2006 Legislative Report," accessed March 21, 2017, http://ftp.dot.state.tx.us/pub/txdot-info/library/reports/gov/tpp/giww05.pdf; "Galveston and Brazos Navigation Company," accessed March 22, 2017, http://www.tshaonline.org/handbook/online/articles/dqg01; Kenna Lang Archer, *Unruly Waters: A Social and Environmental History of the Brazos River* (Albuquerque: University of New Mexico Press, 2015), 65.

[5] George C. Werner, "Houston Tap and Brazoria Railway," *Handbook of Texas Online*, accessed March 22, 2017, http://www.tshaonline.org/handbook/online/articles/eqh13.

[6] *Texas Almanac: Population History of Counties from 1850-2010*, accessed March 22, 2017, https://texasalmanac.com/sites/default/files/images/topics/ctypophistweb2010.pdf.

Christi to Aransas Pass, Aransas Pass to Pass Cavallo, and the Brazos River to West Galveston Bay.[7] In 1908, the USACE lead engineer recommended improving the section between the Brazos River and Matagorda Bay.[8]

In 1912, the Freeport Sulphur Company officially designated the coastal city of Freeport when it took over exploratory drilling at the Bryan Mound.[9] Freeport was incorporated in 1917 and was home to the world's largest sulfur mine and the Houston and Brazos Valley Railway. By 1920, Brazoria County's population had increased to 20,614, in large part due to the burgeoning industrial jobs along the coast in places like Freeport.[10] By the close of the 1920s, Freeport's population had skyrocketed to 3,500, up from 300 in 1912.[11]

During the nineteenth and early twentieth centuries, frequent flooding, heavy sedimentation, and shoaling along the Brazos River near the coast posed problems for ships and barges that used the river. At that time, the Brazos River flowed downstream through Freeport before emptying into the Gulf of Mexico. Several sharp curves in the river segment approaching the Gulf exacerbated the sedimentation problems. The Brazos River was routinely dredged and had a limited depth for ships and barges. In the 1920s, the USACE decided to divert the Brazos River near its mouth at the Gulf to help aid in sediment control and reduce shoaling so the river could be a reliable transportation route again. In 1929, the USACE diverted the Brazos River to the west of Freeport, creating a straighter, deeper, north-south channel (known as the Brazos River Diversion Channel).[12] The USACE also built a dam near the head of the Diversion Channel at North Avenue in the town of Velasco to stop the flow of water into the old Brazos River channel.[13] This old river channel became the present-day Freeport Ship Channel and Harbor.

The opening of the Dow Chemical Plant A in Freeport in 1941 had a significant impact on the economy of the area, providing employment for hundreds of workers and impacting future industrial development and boat traffic along the GIWW and Brazos River. Plant A extracted magnesium from the Gulf of Mexico, one of the first in the world to extract metal from the ocean. It also produced chlorine, caustic soda, and ethylene. Built at the onset of World War II, Plant A became an important provider of magnesium for U.S. Allies. To keep up with demand, Dow constructed Plant B further inland (closer to Lake Jackson) and just north

[7] Lynn M. Alperin, *History of the Gulf Intracoastal Waterway*, January 1983, 26.

[8] Historic American Engineering Record, "Louisiana-Texas (LA-TEX) Intracoastal Waterway (Gulf Intracoastal Waterway)," Written Historical and Descriptive Data, Historical American Engineering Record, National Park Service, U.S. Department of the Interior, 1968, 1 and 4, Library of Congress HAER-TX No. 24, accessed June 6, 2017, http://cdn.loc.gov/master/pnp/habshaer/tx/tx0700/tx0733/data/tx0733data.pdf.

[9] Kleiner, "Freeport, TX (Brazoria County)," accessed March 22, 2017, http://www.tshaonline.org/handbook/online/articles/hef03.

[10] *Texas Almanac: Population History of Counties from 1850-2010.*

[11] Kleiner, "Freeport, TX (Brazoria County)."

[12] "Brazoria Economic Development Report," *Houston Business Journal*, February 4, 1991.

[13] "Looking for the Mouth of the Brazos? It's Moved," Brazos River Authority, accessed March 28, 2017, https://www.brazos.org/About-Us/News/News-Room/Resource-Library/Who-Moved-the-Brazos-River; Dan Kessner, *Taking a Pictorial Tour Through Brazosport*, 2015.

of Plant A.[14] The company also built 2,300 housing units for its workers.[15] A 7-mile-long barge canal was also constructed north of the Freeport Ship Channel (the old Brazos River channel). The barge canal allowed direct access to Plant B, bringing seawater for cooling and allowing barge shipments of shell to Plant B.[16]

Despite the construction of the Brazos River Diversion Channel, sediment build-up continued to plague the mouth of the Brazos River, particularly at the junction of the GIWW where the sedimentation extended into the intracoastal waterway. Around 1940, the USACE began planning the construction of floodgates at the Brazos River at the GIWW. The USACE was hopeful that the floodgates would prevent excessive tidal action and sedimentation in the GIWW at the confluence of the Brazos River Diversion Channel. The USACE used funding provided by the Rivers and Harbors Act of 1935, which was a nationwide legislative order that provided funding for "the construction, repair, and preservation of certain public works on rivers and harbors" across the country, including much of the length of the GIWW.[17] The USACE built two sets of steel floodgates just inside the intracoastal waterway, one on each side of the Brazos River Diversion Channel. Each measuring 750 feet long and 75 feet wide and weighing 90 tons, the floodgates were pie wedge-shaped gates called sector gates, which the USACE commonly built (and still build) as floodgates or as part of lock systems along tidally influenced waterways. Sector gates (also sometimes called balance gates) were the only possible choice for this location because they can open when water levels and pressure are unequal on either side of the gate. Like all sector gates, the Brazos River sector gates were designed to recess behind guide walls when open. The gates typically remained closed to reduce sedimentation of the GIWW and only opened when vessels on the GIWW needed to cross the Brazos River. A hand wheel was also installed adjacent to the control house if manual operation of the floodgates was necessary.

The USACE also constructed support buildings and residences at the BRFG which reflected the architectural styles of the period. A gate control house with Moderne detailing was constructed on the north side of each gate set (Resource Nos. 2 and 5). The Moderne architectural style had flat roofs, horizontal bandings, and corner windows and by World War II, was nearing the end of its widespread use. What arose in its place was the Minimal Traditional style with minimal architectural detailing and the slightly more stylized Ranch style, both relatively inexpensive to build and therefore the most popular styles in the World War II and post-war eras. Ranch houses featured a more horizontal appearance with low pitched gable and hipped roofs, large picture windows, and often attached or integrated carports and garages (Resource No. 7). At the west gates, three Ranch-style residences were constructed northwest of the control house to house workers (all three residences are no longer extant). The USACE also built a restroom/shed building and an auxiliary power house just north of the gates (Resource Nos. 3 and 4, respectively). At the east gates, four Ranch-style residences to house workers (no longer extant) and one Ranch-style office and storage building

[14] Dow, "History of Texas Operations," accessed March 23, 2017, http://www.dow.com/locations/texas/freeport/about/history.htm.

[15] Kleiner, "Brazoria County."

[16] Bill Colegrove, *Episodes: Texas Dow 1940-1976*, Houston: Larksdale, 1983, 59.

[17] U.S. House, 74th Congress, I Session, H.R. 6732, *Rivers and Harbors Act of 1935*, (Washington: Government Printing Office, 1935), 1028.

(Resource No. 7) were constructed north of the control house.[18] Driveways from the residences and office connected to the internal access road. External access roads were also constructed from State Highway (SH) 36 to the floodgates on both sides of the Brazos River.[19] In 1943, construction on the BRFG was complete. One year later, the USACE completed similar floodgates at the junction of the Colorado River and the GIWW, approximately 40 miles southwest of the BRFG (see the CRL Historic Context below for more detail).

In the 1950s, the USACE had a building campaign along the GIWW, constructing numerous sector locks and floodgates in Louisiana. The USACE also made improvements in Texas, converting the floodgates at the Colorado River to locks in 1951. This conversion allowed for fewer traffic delays along the GIWW and better management of sediment build-up and tidal action.[20]Also at this time and into the 1960s, the area near the BRFG became known as Brazosport, with a single chamber of commerce for the area's economically linked towns (such as Freeport, Clute, Lake Jackson, Jones Creek, Quintana, and Surfside, among others).[21]

During this time, industrial and shipping development in the coastal area expanded with the deepening of Freeport's harbor and ship channel in 1954, allowing for larger barges and cargo-carrying vessels to enter and exit the port. Chemical companies like Monsanto and BASF constructed facilities in Freeport to team with Dow in manufacturing their goods. Dow's Plant A also nearly doubled in size by the mid-1960s. The shrimping industry, which had previously been a small-scale venture in Texas, exploded after World War II when Louisiana shrimpers moved their operations to Texas in search of better shrimping grounds. In 1967, 14,000,000 pounds of shrimp were harvested; however, that number increased to a staggering 2.2 trillion pounds just four years later.[22]

By 1968, an average of 65 million tons of goods were transported along the GIWW. The goods consisted largely of petroleum products, iron and steel, fertilizers, and liquid sulfur.[23] Development also continued at the BRFG, with the construction of a boat house and repairs to the timber guide walls. To combat erosion adjacent to the floodgates, 2,700 tons of stone were placed at both sets of floodgates. Telephone service was also extended to the west floodgate around 1970.[24]

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[18] Brazos River Floodgates Photo Files, available at the USACE Brazos River Floodgates office.

[19] Alperin, 31.

[20] C. James Kruse et al., *Texas Gulf Intracoastal Waterway Master Plan: Technical Report*, College Station: Texas A&M Transportation Institute, August 2014, accessed March 23, 2017, https://ftp.dot.state.tx.us/pub/txdot-info/tpp/giww/technical-report-0814.pdf.

[21] Kleiner, "Brazosport,TX," *Handbook of Texas Online*, accessed March 28, 2017, https://tshaonline.org/handbook/online/articles/hdb03.

[22] Kleiner, "Brazoria County."

[23] Art Leatherwood, "Gulf Intracoastal Waterway," *Handbook of Texas Online*, accessed March 8, 2017, http://www.tshaonline.org/handbook/online/articles/rrg04.

[24] Department of the Army – Corps of Engineers, *1968 Annual Report of the Chief of Engineers on Civil Works Activities*, Vol. 1, 421.

Brazoria County's population saw massive increases from 46,549 residents in 1950 to 108,312 by 1970.[25] Freeport's population also doubled in that same period, from 6,012 in 1950 to 11,997 in 1970.[26] As development continued in the 1970s and 1980s, new development occurred in the area, with the completion of the SH 288 extension linking Freeport to Houston and the relocation of American Rice, Incorporated's milling and export operation to Freeport. Rice shipments in the region had increased significantly in the mid-twentieth century, from seven tons in 1968 to 65,000 tons in 1974.[27] Changes occurred at the floodgates as well during the 1980s and 1990s. All of the residences at the west and east gates were demolished. The power houses, control houses, office building, and boat house were the only buildings left (Resource Nos. 4, 6, 7, and 9, respectively).[28] By 1990, American Rice shipped 350,000 tons of rice out of Freeport.[29] As more workers moved to the county to find employment with manufacturing facilities, the county's population increased to over 240,000 residents in 2000, up from 191,707 in 1990.[30]

6.2 Brazos River Floodgates Historical Themes and Periods of Significance

Based on the historic context outlined above, the historical themes and associated periods of significance for the BRFG are as follows:

- Industry, ca. 1910-1975. This period begins when the Freeport Sulphur Company officially designated the coastal city of Freeport and ends at the 45-year cutoff date.
- Maritime History, 1905-1975. This period begins when widespread construction began on the GIWW in Texas and ends at the 45-year cutoff date.
- Transportation, ca. 1850-1975. This period begins when the Galveston Brazos Navigation Company constructed a canal from West Galveston Bay to the Brazos River (which would later become part of the GIWW) and ends at the 45-year cutoff date.

6.3 Historic Context of the Colorado River Locks

Founded in 1836, Matagorda County was one of the original 23 counties of the Republic of Texas. The town of Matagorda, located along the Gulf Coast, had been established a few years prior. The early economy of the county centered on plantation farming including cotton, sugar, corn, and rice cultivation, as well as cattle production. The shipping industry along the coast and Colorado River also sustained the economy. By the 1850s, Matagorda County had 2,124 residents and the town of Matagorda counted 1,200 residents.[31] After the U.S. Civil War, crop cultivation decreased as plantation owners moved out of the county, and

[25] *Texas Almanac: Population History of Counties from 1850-2010.*

[26] *Texas Almanac: City Population History from 1850-2000*, accessed March 29, 2017, https://texasalmanac.com/sites/default/files/images/CityPopHist%20web.pdf.

[27] James A. Creighton, *A Narrative History of Brazoria County*, Waco: Texian Press, 1975, 389.

[28] Robert Page, Brazos River Floodgates Lockmaster, interview by Alexis Reynolds, August 22, 2017.

[29] Kleiner, "Brazoria County."

[30] *Texas Almanac: Population History of Counties from 1850-2010.*

[31] *Texas Almanac: Population History of Counties from 1850-2010*; Kleiner, "Matagorda County."

cattle production became an important part of the economy. A beef packing plant and hide and tallow factory were established in the city of Matagorda in the late 1860s. In 1874, the USACE completed a survey for an intracoastal waterway route from Donaldson, Louisiana to the Rio Grande in Texas; however, a loss of interest stalled the construction of the project for several decades. Matagorda also declined as a shipping port at the end of the nineteenth century, unable to compete with the nearby larger and deeper Lavaca and Indianola ports to the west.[32]

By the turn of the twentieth century, Matagorda County's economy began recovering, largely due to immigrants settling and farming in the area, as well as construction of the GIWW in 1905 and the arrival of the Cane Belt Railroad to the coast, both of which opened the area to regional and outside markets. The county's population had increased threefold from the 1850s to over 6,000 residents in 1900.

Cattle production in Matagorda County declined in the late nineteenth and early twentieth centuries, but cotton cultivation nearly tripled from 3,400 acres devoted to the crop in 1880 to 12,000 acres in 1900.[33] Rice cultivation also significantly increased in many coastal counties with the establishment of upwards of 30 rice irrigation companies, including the Matagorda County Rice and Irrigation Company.[34] With its pumping plant two miles northwest of Bay City, the company used the Colorado River for its water supply to the rice fields.[35] Between 1900 and 1925, the amount of acreage in the county devoted to rice jumped from about 600 acres to an impressive 60,000 acres, surpassing all other crops.[36]

In 1910, Congress authorized construction and improvements to the GIWW from the Brazos River to Matagorda Bay (including adjacent to the town of Matagorda). This allowed for a more stable and continuous waterway than the informal cuts that were previously used.[37] The Colorado River was historically a transportation corridor; however, log jams plagued the river for many years and limited transportation to only 10 miles inland from the coast. By 1930, the USACE blasted through the log jam, creating a delta extending to the Matagorda Peninsula and separating Matagorda Bay into two sections. The Colorado River Delta also effectively landlocked the town of Matagorda. Just a few years after the creation of the delta, sediment coming downstream in the Colorado River began to cause shipping issues along the

[32] Kleiner, "Matagorda County"; Matagorda County Historical Commission, "The Development of the Matagorda County Rice Industry," *Rootsweb*, accessed April 4, 2017, http://www.rootsweb.ancestry.com/~txmatago/rice_industry.htm.

[33] Kleiner, "Matagorda County," *Handbook of Texas Online*, https://tshaonline.org/handbook/online/articles/hcm05, accessed August 2, 2017.

[34] *Rice Raising in Coast Country of Texas*, Santa Fe: Atchison, Topeka, and Santa Fe Railway Company Passenger Department, 1902, 44.

[35] Thomas Ulvan Taylor, *Rice Irrigation in Texas*, Austin: Von Boeckmann, Schutze & Company, 1902, 39-41.

[36] Kleiner, "Matagorda County."

[37] Alperin, 61.

river and in the GIWW near the river. In 1936, in an effort to control sediment build-up in the river, the USACE dredged the channel from the Gulf of Mexico to the town of Matagorda.[38]

World War II and the 1940s brought changes to Matagorda County. In 1940, Market Street in the town of Matagorda was upgraded and designated as SH 344, approximately 950 feet northeast of the present-day CRL facility.[39] By 1942, Matagorda's population was 1,250.[40] Around that time, the USACE created plans to control sediment build-up in the GIWW, and soon after they began construction on floodgates at the convergence of the Colorado River and the GIWW. The Brown & Root Company (present-day HDR, Inc.), based out of Houston, won the contract, and construction on the floodgates was completed in 1944. The floodgates consisted of sector gates (pie wedge-shaped gates), much like the gates at the Brazos River to the northeast. The floodgates typically remained closed to reduce sedimentation of the GIWW and only opened when vessels on the GIWW needed to cross the Colorado River. The USACE also constructed residences, sheds, and offices that, similar to the BRFG, reflected the architectural styles of the period. The west Colorado River floodgate had a Moderne style control house just north of the gates (Resource No. 12). A power house (Resource No. 13) and Ranch style residence (no longer extant) were also constructed just north of the control house. At the east gates, another Moderne style control house was situated just north of the gates (Resource No. 14). The USACE also built six Ranch-style residences (no longer extant) and an office building (Resource No. 16), as well as a power house and six-stall garage (Resource Nos. 15 and 17).[41] Hand wheels were also installed adjacent to the control houses if manual operation of the gates was necessary.

At the same time as the construction of the floodgates, a hurricane struck the Gulf Coast, causing large-scale damage along the coast. To combat future hurricane damage, the town of Matagorda constructed a protective levee around part of the town. However, the levee was not constructed to its planned height due to lack of funds.[42] Also in the 1940s, Matagorda County experienced a boom in oil production that became a large part of the county's economy. The county produced 4,563,000 barrels in 1944, increasing to 6,912,000 in 1948.[43] By 1949, the construction of the entire GIWW from Louisiana to Texas was complete.[44]

[38] Kleiner, "Matagorda County"; Comer Clay and Diana J. Kleiner, "Colorado River," *Handbook of Texas Online*, accessed April 4, 2017, https://tshaonline.org/handbook/online/articles/rnc10.

[39] Texas Department of Transportation, *Highway Designation File, State Highway No. 344*, accessed June 6, 2017, http://www.dot.state.tx.us/tpp/hwy/sh/sh0344.htm.

[40] Kleiner, "Matagorda County."

[41] Colorado River Locks Photo Files, available at the USACE Colorado River Locks office.

[42] Matagorda County Historical Commission et. al. *Historic Matagorda County, Volume I* (Houston: D. Armstrong Co. Inc., 1986), 360.

[43] Kleiner, "Matagorda County."

[44] Historic American Engineering Record, "Louisiana-Texas (LA-TEX) Intracoastal Waterway (Gulf Intracoastal Waterway)," 1.

By the 1950s and 1960s, oil production was paramount to the county's economy. Between 1956 and 1965, oil production jumped from 5,701,000 barrels to more than 7,013,000 barrels.[45] Shifts in agricultural production also occurred in the county. The boom in oil production opened opportunities for employment outside of the agriculture sector. In addition, a rise in agribusiness and the availability of inexpensive mechanized farm equipment allowed larger acreage to be farmed with fewer workers. Hence, while the number of farms in the county decreased from 1,329 in 1950 to 839 in 1964, the size of the farms increased from 476.8 acres to 765.8 acres.[46]

Around this time, changes also occurred to the Colorado River floodgates. In the late 1940s, the USACE observed traffic delays along the GIWW at the Colorado River during high water events because water levels on the Colorado River were higher than on the GIWW since the floodgates typically remained closed. When vessels traveling on the GIWW needed to cross the Colorado River, the floodgates were opened, and the higher water levels on the Colorado River rushed into the GIWW, which made ship traffic crossing the river slow as ships continued along the GIWW. As a result, in 1951, the USACE contracted the Texas Construction Company to add a second set of gates on either side of the river and construct a lock chamber, converting the floodgates to locks to reduce these traffic delays along the GIWW. The USACE embarked on a building campaign at this time, constructing locks in New Orleans at the same time as the CRL.[47] The locks along the GIWW at the Colorado River consisted of four sector gates, two on the west side (Resource No. 10A) and two on the east side (Resource No. 10B) of the Colorado River. The two inner gates (set of gates closest to the river on either side) were the original 1944 gates, while the outer gates farthest to the river on either side were constructed in 1951. On each side of the Colorado River, between each set of lock gates, the USACE designed a gravity lock chamber that did not require a pump system. Vessels enter the lock chamber, the water rises, and the vessels are raised to the height of the Colorado River. Two more control houses were constructed on the north side of the new gates (Resource Nos. 11 and 18), and a boat house (Resource No. 19) was constructed on the far east portion of the east locks.

Matagorda County experienced steady population growth between 1950 and 1970, increasing from 21,559 to 27,913, respectively.[48] After World War II, the town of Matagorda focused its economy on tourism, constructing boat slips to the east of the eastern locks in the 1950s and 1960s. The town also completed the ring levee (Resource No. 20) to its current height, finishing the 7.3-mile levee just before Hurricane Carla hit in 1961. The CRL boat house (Resource No. 19) was damaged during the hurricane and repaired and rebuilt in 1962.[49] During this time, SH 344 was also re-designated as FM 2031. Oil production in the county

[45] Kleiner, "Matagorda County."

[46] Bureau of the Census, "County Table 1 – Farms, Acreage, Value, And Farm Operators: Censuses of 1950 and 1945," (Washington, D.C.: United States Government Printing Office, 1952) 74; U.S. Department of Commerce, "Table 1. Farms, Acreage, and Value: 1964 and 1959," *1964 United States Census of Agriculture, Vol. 1, Part 37* (Washington, D.C.: United States Government Printing Office, 1967) 327.

[47] "Enters Waterway Bid," *Amarillo Daily News,* December 29, 1950, 19.

[48] *Texas Almanac: Population History of Counties from 1850-2010.*

[49] Jesse Deshotels, Lock/Dam Equipment Mechanic, email correspondence with Alexis Reynolds, August 24, 2017.

began slowing by the 1970s, decreasing to 4,780,000 barrels. As oil production decreased, agribusiness increased. Rice was a leading crop for the county, and sorghum, soybeans, and corn were also grown.[50]

Matagorda continues to remain a small town, bolstered primarily by tourism. By 1990, Matagorda had 605 residents and approximately seven businesses, and in 2000, the town had a population of 710 and 30 businesses. Growth in Matagorda County remained stagnant, fluctuating by only a few hundred between 1990 and present-day. In 1990, the population was 36,928 residents, and by 2014, the county had 36,519 residents.[51]

6.4 Colorado River Locks Historical Themes and Periods of Significance

Based on the historic context outlined above, the historical themes and associated periods of significance for the CRL are as follows:

- Maritime History, 1905-1975. This period begins when widespread construction began on the GIWW in Texas and ends at the 45-year cutoff date.
- Transportation, ca. 1910-1975. This period begins when Congress authorized funding for improvements to and construction of the GIWW between the Brazos River and Matagorda Bay and ends at the 45-year cutoff date.

7.0 EVALUATION METHODOLOGY

Following the development of the historic context and the field identification of historic-age resources in the APE, B&A historians further evaluated the historic-age properties. This section outlines the methodology used in evaluating inventoried properties. The basic NRHP evaluation criteria are outlined with an emphasis on areas of significance and a discussion of the seven aspects of integrity. The section continues by placing the criteria within the context of how identified historic-age resources were evaluated. In order to conclude the evaluation process, this section discusses NRHP registration requirements and integrity considerations by expanding upon the material provided in **Section 6.0 Historic Context** relating to property types and other architectural concerns. The objective of the evaluation methodology is to continue synthesizing relevant information to facilitate determinations of eligibility. Application of the evaluation methodology and results of the evaluations are included in **Section 8.0 Survey Results**.

7.1 NRHP Evaluation Criteria

Historic-age properties were evaluated for NRHP eligibility using the NPS *National Register Bulletin: How to Apply the National Register Criteria for Evaluation*, which notes that properties that are eligible for the NRHP must:

[50] Kleiner, "Matagorda County."

[51] Kleiner, "Matagorda County" and "Matagorda, Texas"; *Texas Almanac: Population History of Counties from 1850-2010.*

- Be at least 50 years old
- Meet one of the four following criteria for significance:
  - Criterion A: Event – Significant historical associations with events, trends, or patterns.
  - Criterion B: Person – Significant associations with persons of transcendent importance.
  - Criterion C: Design/Construction – Embody distinctive characteristics of a type, period, or method of construction, represent the work of a master, possess high artistic values, or represent a significant and distinguishable entity whose components may lack individual distinction.
  - Criterion D: Information Potential – Have yielded, or may be likely to yield information, important in prehistory or history.[52]
- Retain and convey historic integrity, as expressed in the seven aspects of integrity; these are outlined in **Section 7.2 Integrity Considerations**.

Certain types of properties that are not usually considered eligible for listing on the NRHP are given special considerations, which the NPS terms "Criterion Considerations." These property types may include:

- Religious properties (Criterion Consideration A)
- Moved properties (Criterion Consideration B)
- Birthplaces or graves (Criterion Consideration C)
- Cemeteries (Criterion Consideration D)
- Reconstructed properties (Criterion Consideration E)
- Commemorative properties (Criterion Consideration F)
- Properties fewer than 50 years old with exceptional significance (Criterion Consideration G)

7.2 Integrity Considerations

When evaluating historic properties, integrity is an essential part of the evaluation. Properties that no longer retain integrity to convey significance are recommended not eligible for inclusion into the NRHP. Properties that are associated with important historic themes outlined above in the historic context had to meet certain aspects of integrity specific to their context. The following Seven Aspects of Integrity are placed forth by the *National Register Bulletin: How to Apply the National Register Criteria for Evaluation*. B&A historians applied the Seven Aspects of Integrity to properties identified during the reconnaissance-level survey in

[52] The NRHP Criterion D is most applicable to archeological sites and districts. Per the *National Register Bulletin: How to Apply the National Register Criteria for Evaluation*, in order for above-ground buildings, structures and objects "to be eligible under Criterion D, they themselves must be, or must have been, the principal source of the important information." In order to obtain this information, it most often requires disassembling or demolishing the above-ground resource in question. As such, the eligibility of above-ground buildings, structures and objects is most readily evaluated under Criteria A, B and C while Criterion D is only applicable in very rare circumstances. Consequently, this HRSR includes detailed discussions of Criteria A, B, and C, and will only address Criterion D when applicable.

order to help determine if the properties meet the requirements necessary to be recommended eligible for inclusion in the NRHP.

Location

Location is the place where the historic property and its individual resources was constructed or the place where the historic event occurred. The actual location of a historic property, complemented by its setting, is particularly important in recapturing the sense of historic events and persons. In some cases, the relationship between a property and its location is destroyed if the property is moved. In such cases, Criterion Consideration B should be reviewed to determine if the property's significance is rooted in its architectural merit or if the property was moved before its period of significance. In general, as applied to historic districts and individually significant resources, their character-defining features should be in their original location.

Design

Individual resources or historic districts should retain their integrity of *design*. With individual structures, the integrity of design is important in reflecting the resource's historic functions and aesthetics. For example, if the integrity of design is altered in a Moderne or Ranch-style building, and the building's form and style are no longer identifiable or it has been heavily modified, the building is not conveying its original design.

Setting

Setting is another aspect of integrity necessary to convey the significance of an individual resource or historic district. Setting refers to the property's character at the time of its historical significance, and it reflects how the property is laid out, as well as its relationship to surrounding features and open spaces. Setting can also provide an understanding regarding the original function of the property. Physical features that constitute the setting of a historic property can either be natural or manmade. For properties like the BRFG and CRL, these features could include large-scale elements such as the GIWW, Brazos and Colorado Rivers, and spoil areas. Small-scale elements, such as individual features, trees, and plants have a cumulative effect on the setting. For the BRFG and CRL, the introduction of numerous new and/or large physical features, such as the construction of new residences and building clusters, or the demolition of historic-age buildings and structures, can negatively affect the integrity of setting. Furthermore, substantial changes in vegetation management practices that dramatically change the appearance of the landscape can also negatively impact the setting.[53]

Materials

Materials are the physical elements of a historic property or district. A property must retain key exterior materials dating from its period of significance. To accurately date a property or district to its period of significance, the property's materials should be maintained. Therefore, the replacement of siding, windows, and porches, as well as large additions and conversion of garages and carports to living spaces, affects the resource's ability to demonstrate its age and place within the historic context of the area. Furthermore, if

[53] National Park Service, *National Register Bulletin: Guidelines for Evaluating and Documenting Rural Historic Landscapes*, n.d., 22.

buildings, structures, and historic districts have a substantial loss of historic materials, they cannot illustrate the property's sense of time and place.

Workmanship

According to the NPS, *workmanship* is the "evidence of the crafts of a particular culture or people during any given period in history" and "can be expressed in vernacular methods of construction."[54] This can be translated in individual buildings as the horizontal banding on Moderne buildings. Specific construction techniques may also illustrate workmanship.

Association

Association is the connection between the property and a historic event or person. Association often relies on the presence of extant physical features to help illustrate a property's association. Properties should retain their association through either the significant people who resided there during their historic period, or their association and connection to the various themes outlined in the historic context.

Feeling

According to the NPS, *feeling* is a "property's expression of the aesthetic or historic sense of a particular period of time" and results from the "presence of physical features that, taken together, convey the property's historic character."[55] For individual properties, feeling is reflected in the retention or removal of the property's character-defining features.

8.0 SURVEY RESULTS

During the reconnaissance-level survey, B&A identified 25 pre-1976 resources, which were inventoried as Resource Nos. 1-23. These properties are mapped on **Figures 2** and **3** in **Appendix A**. The results of this survey are presented in the inventory table in **Appendix B**, and photographs of the historic-age resources are included on the survey forms in **Appendix C**. The discussions in this section rely heavily on the information presented in **Section 6.0 Historic Context** and **Section 7.0 Evaluation Methodology**.

8.1 Resource Evaluations

8.1.1 Brazos River Floodgates and Colorado River Locks

The BRFG (Resource Nos. 1A and 1B) were constructed in 1943, while the CRL (Resource Nos. 10A and 10B) were constructed in 1944 and in 1951 when the USACE built two additional sets of gates and lock chambers.

The 2014 *New York State Barge Canal National Register Nomination* provides a foundation for understanding water-related transportation properties like the BRFG and CRL. The nomination discusses 57 locks along the canal system, and for the sake of clarity and ease of evaluation, discussed each lock site as one resource (which included sector gates and guide walls, as well as support buildings such as power

[54] National Park Service, *National Register Bulletin: How to Apply the National Register Criteria for Evaluation*, (Washington, D.C.: Department of the Interior, 1999), 45.

[55] National Park Service, *National Register Bulletin: Guidelines for Evaluating and Documenting Rural Historic Landscapes*, 23.

houses, storage buildings, and control houses). For the purposes of this report and due to the small number of gates and locks at the CRL and BRFG, the CRL and BRFG are discussed as separate resources from their support buildings. A separate discussion examines the potential NRHP-eligibility of the BRFG and the CRL sites, along with their respective support buildings, as potential historic districts.

In order for the BRFG and CRL to be eligible for the NRHP under Criterion A, the NPS Bulletin *How to Apply the National Register Criteria for Evaluation* states, "mere association with historic events or trends is not enough, in and of itself, to qualify under Criterion A: the property's specific association much be considered important as well."[56] As such, the BRFG and CRL's association with an event or trend identified in the historic context (e.g. construction of the GIWW or economic development of Matagorda and Freeport) would need to be significant.

The BRFG and CRL could be significant under Criterion B if they reflect a person's productive life, the time period in which they achieved significance, and/or the culmination of a life's work for someone of importance at the local, state, or national level. If significant modifications have been made to the locks and gates, the property may no longer convey the important associations of the person(s).

To be considered eligible under Criterion C, the BRFG and CRL must exhibit a unique or technologically innovative design or construction method/technique or exhibit a national or regional architectural trend. Since water-related transportation resources such as the floodgates and locks are often utilitarian in nature, the resources must also retain a high level of integrity.

Under Criterion D, the physical material of the BRFG and CRL must have the potential to yield information about undocumented engineering practices or function of flood gates or locks. They must also be, or have been, the principle source of important information.

In addition to meeting one or more of the criteria above, the BRFG and CRL would also need to retain its historic integrity. As such, the BRFG and CRL must retain their character-defining features and their association with the property's place in history. Character-defining features would include the original steel construction of the gates, pie-wedge shaped form of the gates, concrete recess wells, guide walls, and lock chambers. If a property no longer retains these features, it loses its ability to illustrate its significance within the historical period for which it is associated. If significant features have been altered or removed (such as significant improvements to or the construction of new gates), the BRFG and CRL may lose their ability to convey their significance.

Criterion A

Under Criterion A, research and field investigations did not reveal that the BRFG or CRL have significant associations with historic events or trends identified in the historic context. Prior to the construction of the BRFG and CRL, the GIWW functioned as a navigable waterway for vessels for at least 25 years. The primary function of the BRFG and CRL is sediment control due to the heavy sediments flowing down the Brazos and Colorado Rivers. The USACE built the BRFG and CRL to reduce the frequency of maintenance

[56] National Park Service, *National Register Bulletin: How to Apply the National Register Criteria for Evaluation,* 12.

dredging of the GIWW. As such, the BRFG and CRL are not integral to the operation and function of the GIWW as a shipping and transportation route. In fact, reasonable alternatives that the USACE is considering for the feasibility study include the complete removal of the BRFG and CRL, with no similar replacement structures proposed. Therefore, the BRFG and CRL are not essential as navigation structures, and they are not and have never been critical to waterborne transportation along the Texas Gulf Coast.

Finally, the BRFG and CRL are associated with the development of commerce and maritime economy in Freeport and Matagorda; however, they are not significant within those contexts. Commercial and industrial development (particularly in Freeport), as well as the shipping industry and water-related transportation, were well-established decades prior to the construction of the gates and locks. Moreover, tourism is the main economy of Matagorda, but the town's success as a tourist destination is not related to the construction of or transportation associated with the CRL.

Criterion B

Under Criterion B, there is no evidence to suggest that the BRFG or CRL are associated with any significant people identified in the historic context.

Criterion C

Under Criterion C, research did not indicate that the BRFG or CRL possess engineering significance, including their method of construction or use of innovative technology. The lock gates and floodgates are both sector gates rather than miter gates (which are vertically hinged gates). The advantage of sector gates is that they can be operated when there are different water levels on either side of the gates. Sector gate is the primary gate type used in coastal regions throughout the U.S. for a variety of functions, including flood control, sediment control, navigation aids, and saltwater barriers. The BRFG have sheet pile walls and steel tie backs, and timber guide walls act as bumper strips for passing barges. The CRL are tide locks with timber and concrete chambers. They also have timber mounted on the sides acting as bumper strips.

Research indicates that sector gates, balanced gates, and tide locks are common types of locks and gates built by the USACE and used widely throughout the U.S. and along the Gulf Coast. Additionally, research shows these methods of construction and type of structures were developed long before their use at the BRFG and CRL. One online source (www.matagordatourism.com) indicated that the CRL were the first locks built in the state. However, research shows that this statement is not accurate. In Texas, locks were constructed in the 1910s just north of SH 7 on the Trinity River in Houston County.[57] The San Benito Main Irrigation Canal in Cameron County also had a series of five locks (one that is still extant) built between 1906 and 1912 to allow passage of barges.[58]

Furthermore, neither the floodgates nor the locks are rare examples of a property type. As noted above, USACE-designed sector gates are used for floodgates and locks throughout the GIWW from Texas to

[57] David Mitchell, "The Trinity River Project, 1852-1922," *East Texas Historical Journal*, 28, 2, (1990), 43;

[58] Caroline Wright et. al., "San Benito Irrigation System," Written Historical and Descriptive Data, Historic American Engineering Record, National Park Service, U.S. Department of the Interior, 2011, 2. From Prints and Photographs Division, Library of Congress (HAER No. TX-132); http://cdn.loc.gov/master/pnp/habshaer/tx/tx1100/tx1174/data/tx1174data.pdf, accessed August 21, 2017.

Florida. Research also indicated that the USACE had a building campaign in the 1950s, constructing steel sector locks and floodgates all along the GIWW including:

- The Bayou Sorrel Lock, located on the Atchafalaya River in Louisiana, is also still extant and was built in 1951.
- The Schooner Bayou Control Structure, located south of Lafayette, Louisiana, is a set of floodgates similar to the BRFG. Built in 1951, they are also 75-foot-wide sector gates with timber guide walls.
- A series of 75-foot-wide sector gates are in Louisiana and used either as flood-control structures or as barriers between fresh and salt waters. These sector gates include the Harvey Lock, Calcasieu Lock, Algiers Lock, and Bayou Boeuf Lock. They were all built in the early 1950s, with the exception of the Harvey Lock, which was constructed in 1934.[59]

For these reasons, the BRFG and CRL do not embody significant and distinctive characteristics of a type, period, or method of construction. Finally, research did not indicate that the BRFG and CRL are the works of a master, nor do they possess high artistic values.

Criterion D

Under Criterion D, the BRFG and CRL are not eligible for their potential to yield important information about history. Research of documented materials and the as-built plans reveals that the BRFG and CRL are modern structures designed by a federal government agency that engineers similar structures throughout the U.S. There is no local variation on a standard design or construction technique that may be considered important.

Conclusion

B&A recommends that the BRFG and CRL (Resource Nos. 1A, 1B, 10A, and 10B) are not eligible for the NRHP under Criterion A, B, C, or D.

8.1.2 Brazos River Floodgates and Colorado River Locks Support Buildings

The BRFG has eight support buildings. On the west side of the Brazos River, these buildings include a control house (Resource No. 2), shed and former restroom (Resource No. 3), and power house (Resource No. 4). On the east side of the Brazos River, there is a control house (Resource No. 5), power house (Resource No. 6), office (Resource No. 7), small pump house (Resource No. 8), and boat house (Resource No. 9).

The CRL has nine support buildings. On the west side of the Colorado River, the buildings include two control houses (Resource Nos. 11 and 12) and a power house (Resource No. 13). On the east side of the Colorado River, the buildings are two control houses (Resource Nos. 14 and 18), power house (Resource No. 15), office (Resource No. 16), garage (Resource No. 17), and a boat house (Resource No. 19).

[59] U.S. Corps of Engineers-New Orleans District, *The Gulf Intracoastal Waterway Project*.

In order to be NRHP-eligible under Criterion A, these resources must have a significant association with events or trends outlined in the historic context. Under Criterion A, research did not indicate that the control houses, offices, sheds, power houses, boat houses, or the pump house have any significant association with events outlined in the historic context. While they were built at the same time as the BRFG and CRL, they are not in and of themselves significant for that association.

Under Criterion B, the support buildings must have an association with an important person identified in the historic context and are the best representation of the life of that person. Under Criterion B, there is no indication that any of the support buildings have significant associations with people identified in the historic context.

Under Criterion C, the support buildings must represent a distinct type, period, or method of construction, represent the work of a master, or possess high artistic values. Resource Nos. 11 and 18 are control houses that exhibit modest Moderne detailing. Resource Nos. 7 and 16 are the Ranch style office buildings. The Moderne architectural style was most prominent in the 1920s and 1930s and is characterized by smooth wall surfaces, flat roof with coping, horizontal banding or grooves in walls, and horizontal balustrade. Many Moderne buildings also had rounded corners, continuous windows that wrap around corners, and glass block.[60] Ranch style residences and buildings dominated the housing stock after World War II, and they are ubiquitous in Texas. Ranch style's elongated and rectangular form did not have front porches, and the focus shifted from the front of the house to the rear. Additionally, Ranch style houses and buildings had attached and integrated garages and carports and exhibited open plans and larger yards. The windows also changed from smaller casement windows to larger picture windows and high-set bedroom windows. Sliding doors were prominent on rear elevations leading to back yards, and often residences had a prominent chimney in the front.[61] Since Ranch houses and buildings are common resource types in the region, in Texas, and nationwide, the threshold for eligibility and retention of historic integrity is high.

Other support buildings such as power houses, control houses, sheds, and boat houses are typically considered not individually eligible for the NRHP under Criterion A, B, C, or D. Rather they are most often evaluated as contributing resources to a property when the main feature with which they are associated (e.g. the lock gates or floodgates) is NRHP-eligible. An exception would be if these support buildings had decorative features or design merit to warrant individual eligibility under Criterion C.

The support buildings exhibit either no style or common architectural styles in the area and Texas and do not rise to the level of significance necessary for NRHP-eligibility. Resource Nos. 11 and 18 are the modest Moderne-style control houses at CRL. They only exhibit some Moderne detailing (horizontal banding, smooth wall surface, and windows that wrap around the corners), which is not enough to rise to the level of significance necessary for NRHP-eligibility.

[60] McAlester, Virginia Savage. *A Field Guide to American Houses,* Rev. Ed., (New York: Alfred A. Knopf, 2015), 581.

[61] James C. Massey and Shirley Maxwell, "After the War: How the Rush to House Returning Vets Recast Suburbia," *Old House Journal* (March/April 2004), 93.

Under Criterion D, the physical material of the support buildings must have the potential to yield information about the buildings. They must also be, or have been, the principle source of important information. There is no evidence to suggest that the support buildings at the BRFG and CRL exhibit a construction technique or design variation that could be considered important and worthy of study.

Finally, the majority of the support buildings at the BRFG and CRL exhibit alterations. These alterations include boarded or replacement windows, shutters, doors, and siding (such as the BRFG pump house [Resource No. 8] and the CRL power house [Resource No. 15]). In one instance a garage has been converted to office space (the CRL office building [Resource No. 16]). At the BRFG, the office building (Resource No. 7) has an infilled garage access door, while the control houses (Resource Nos. 2 and 5) have lost all of their original Moderne detailing and exhibit non-historic-age rear additions. Some of the window panes in the westernmost CRL control house (Resource No. 11) are also boarded. Moreover, the BRFG and CRL sites each originally had seven residences for a total of 14 residences. However, none of these residences are extant. Several support buildings show some missing siding (such as Resource No. 8 at the BRFG and Resource No. 16 at the CRL). As a result of these alterations and current conditions, the resources' integrity of design, materials, workmanship, feeling, and association are compromised. Consequently, the eight BRFG and nine CRL support buildings are recommended not eligible for NRHP-listing under Criterion A, B, C, or D.

8.1.3 Matagorda Ring Levee (Resource No. 20)

The earthen Matagorda ring levee extends 7.3 miles around the town of Matagorda, including along the CRL access road and behind the east locks (**Figure 3** in **Appendix A** and survey forms in **Appendix C**). Local roads cross over the levee at various locations. The town of Matagorda originally constructed the ring levee in the early 1940s; however, lack of funds did not allow its completion to its current height until just before Hurricane Carla made landfall in 1961.

Under Criterion A, Matagorda ring levee must be associated with an important event or trend identified in the historic context (e.g., the construction of a levee directly impacting the economy of an area or the ability to settle in a flood-prone area that was previously uninhabitable). Under Criterion B, a levee must have an association with an important person identified in the historic context and must be the best representation of the life of that person. To be considered eligible under Criterion C, a levee must retain a high level of integrity and exhibit an engineering or technologically innovative design or construction method/technique. The 2009 TxDOT document *A Field Guide to Irrigation in the Lower Rio Grande Valley* also notes that levees "undergo constant maintenance and transformation due to erosion and flooding." The inherent change occurs regardless of whether they functioned as part of irrigation features or as flood control structures like the Matagorda ring levee.[62] As such, change is an inherent part of any levee system. However, dramatically altering profiles and slopes of a levee would impact the ability of a levee to convey its significance under Criterion C.[63]

[62] Lila Knight, *A Field Guide to Irrigation in the Lower Rio Grande Valley*, (Austin: Texas Department of Transportation, 2009), 192.

[63] Knight, 192.

Under Criterion A, while the levee is associated with the development of Matagorda, there is no evidence to suggest that that association is significant. The levee was constructed as a flood control method to protect the town of Matagorda. However, the creation of the levee was not the impetus for development in flood-prone areas that were previously uninhabitable. Much of the land along Matagorda Avenue near the GIWW and near the southern section of the Colorado River were developed prior to the levee construction. The area north of CR 251 has historically been undeveloped. Moreover, the levee did not have an important contribution to the shipping or tourist industry of the area, economic sectors that were established well before the construction of the levee. Under Criterion B, research did not reveal that the levee is associated with any significant people identified in the historic context. Under Criterion C, there is no indication that the earthen levee represents important engineering, technological, or construction advances in levee construction or flood control management. It is also not the work of a master. Under Criterion D, dozens of levees have been constructed throughout Texas and the U.S., and there is no reason to believe that the Matagorda ring levee would yield potential information. Although it appears to retain its historic integrity, it does not rise to the level of significance necessary for NRHP-eligibility. As a result, the Matagorda ring levee (Resource No. 20) is recommended not eligible for the NRHP under Criterion A, B, C, or D.

8.1.4 Control House (Resource No. 21)

Resource No. 21 is a ca. 1950 two-story control house located under the FM 2031 bridge at the GIWW in the CRL APE (**Figure 3**). The first story exhibits concrete block construction and small upper windows, while the second story has a wraparound walkway, control room with slanted windows, and a cantilevered roof. The brick and concrete block building is no longer in use and once controlled the no longer extant pontoon bridge that crossed the GIWW.

Under Criteria A and B, research did not indicate that the control house has important associations with the GIWW or development of Matagorda, nor is it associated with important people identified in the historic context. Under Criterion C, it does not represent a distinct type, style, or method of construction. It is also not the work of a master and does not possess high artistic value. It appears to retain its historic integrity, but it does not rise to the level of significance necessary for NRHP-eligibility. Consequently, it is recommended not eligible for the NRHP under Criterion A, B, or C.

8.1.5 Domestic Resources (Resource Nos. 22 and 23)

The survey revealed only two domestic resources, which are located in the CRL APE. Constructed ca. 1970, the two residences are located south of the east locks along Riverbend Drive (**Figure 3**). Resource No. 23 also has a ca. 1970 garage and shed.

In order to be NRHP-eligible under Criterion A, domestic resources must have a significant association with events or trends outlined in the historic context. These houses may be also significant under Criterion B if they are the best representation of the life of a person (or persons) identified in the historic context. Under Criterion C, domestic resources must represent a distinct type, period, or method of construction, represent the work of a master, or possess high artistic value. Alterations such as replacement or missing windows, doors, and siding or non-historic-age additions may compromise the resource's historic integrity.

Secondary domestic buildings and structures, such as garages and sheds, located on the inventoried properties are typically considered not individually eligible for the NRHP under Criterion A, B, or C. Rather they are most often evaluated as contributing resources to a property when the house with which they are associated is NRHP-eligible. An exception to this would be if the secondary resource has some type of decorative features or design merit to warrant individual eligibility under Criterion C.

Under Criteria A and B, Resource Nos. 22 and 23 do not have significant associations with important events, trends, or people outlined in the historic context. Under Criterion C, the two residences, garage, and shed lack any distinct architectural style. The resources also exhibit alterations including new siding, windows, and non-historic-age additions. As a result, the resources' integrity of design, materials, workmanship, feeling, and association are compromised. Consequently, Resource Nos. 22 and 23 are recommended not eligible for NRHP-listing under Criterion A, B, or C.

8.2 Potential BRFG and CRL Historic Districts

The BRFG and CRL, along with their support buildings and structures, represent two collections of resources associated with sediment control in the GIWW. B&A evaluated these two sites as potential transportation-related historic districts. Overall photos of the BRFG and CRL sites are included in **Appendix D Study Area Photographs**.

Under Criterion A, there is no evidence that the BRFG or CRL sites or their individual resources have important associations with significant events and trends identified in the historic context. As noted above, the GIWW does not rely on the floodgates or lock gates for navigation and shipping. Rather, the gates, locks, and supporting buildings were installed to minimize sedimentation and maintenance dredging in the GIWW.

Under Criterion B, research did not reveal that the BRFG or CRL sites, nor their individual resources, are have important associations with people identified in the historic context.

Under Criterion C, the BRFG and CRL facilities do not represent important engineering or technological advances in gate or lock construction or sediment control management. The buildings and structures also do not represent a distinct type, style, or method of construction that rise to the level of significance for NRHP-eligibility. Sector gates are among the most commonly used gates built by the USACE and seen throughout the GIWW. The Moderne-style control houses are also modest examples of the type, and the Ranch-style office buildings reflect a nationwide post-World War II building trend seen throughout the area, Texas, and the country. The power houses, sheds, and boat houses are utilitarian buildings that lack any architectural style. The BRFG and CRL sites also do not exhibit an overall designed landscape (such as masonry/brick entrance gates, gardens, tree-lined roadways, fences or hedgerows, benches, or uniform designed street lighting).

Finally, both the BRFG and CRL sites exhibit extensive alterations that compromise their integrity of workmanship, materials, design, feeling, setting, and association. Review of the original BRFG and CRL plans, as well as historic photographs, revealed significant changes to each site as outlined below:

- **BRFG Site**
  - Originally, the west floodgate area had three residences, a control house, power house, and scattered sheds (**Photo D5**). The present-day west floodgate now only has the control house, a shed/restroom building, and a power house. There are also several non-historic-age sheds (**Photo D4**). All of the original residences have been demolished.
  - The east floodgate originally had four residences, one office building, a control house, power house, pump house, and scattered sheds (**Photo D14**). A boat house was added on the far east side around 1970. The present-day east floodgate has the control house, power house, office building, a pump house, and the boat house. There are also several non-historic-age sheds (**Photos D12** and **D14**). All of the residences have been demolished.
  - The remaining historic-age buildings at the east and west floodgates exhibit alterations including replacement windows, shutters, and doors. The office building has a small non-historic-age covered entrance on the west elevation. Some of the buildings also have missing siding. Alterations are most noticeably seen in the control houses that bear none of their original Moderne detailing. Several non-historic-age sheds have also been constructed.
  - The site originally had decorative pendant street lighting at both the east and west floodgate areas (**Photo D14**). This lighting is no longer extant and more utilitarian light fixtures are installed.
  - The internal access road remains intact, but the extant driveways now lead to empty residential lots with the exception of the office building (**Photo D15**).

- **CRL Site**
  - By the time of the conversion from floodgates to locks in 1951, the CRL site had two intact groupings of buildings at the east and west locks. The west locks had two control houses and a power house. The present-day west locks have retained these buildings.

    The east locks had an office building, three residences, a six-stall garage, two control houses, a power house, and scattered sheds. By 1961, three additional residences had been constructed on the south side of the internal access road, and a boat house was built on the far east side of the east locks (**Photos D32** and **D33**). The present-day east locks only retain the two control houses, power house, office building, garage, a shed, and a boat house (**Photos D26** and **D31**). All of the original six residences have been demolished (**Photos D30** and **D29**).
  - The remaining historic-age buildings at the east and west locks exhibit alterations including replacement windows, doors, and shutters and a garage converted to office space. Some of the buildings also have missing siding. Alterations are most noticeably seen in the two 1944 control houses (closest to the river on the east and west side) that bear none of their original Moderne detailing. Additionally, both 1951 control houses are no longer in use.
  - The east lock gates also have a significant number of non-historic-age buildings and structures. In addition to a few non-historic-age sheds, the area directly north of the 1944 lock

gates also has non-historic-age picnic pavilions and benches constructed in the late 2000s (**Photo D28**).

- The internal facility access roads (not the road leading from Matagorda to the CRL facility) remain intact at both lock gate sites, but almost all of the original driveways on the east lock site have been removed and replaced with grass (**Photo D30**).

Based on the above assessment, it is recommended that the BRFG and CRL sites are not eligible for the NRHP under Criterion A, B, C, or D either as historic districts or for any individual resources located therein.

9.0 CONCLUSION

Based on the justifications included above, all 25 historic-age resources located in the 500-foot APEs for both the BRFG and CRL sites are recommended not eligible for the NRHP. As such, no effects assessments are necessary under 36 CFR 800.5, none of the alternatives have the potential to affect non-archeological historic resources, and no further work is recommended to complete compliance activities under Section 106 of the NHPA.

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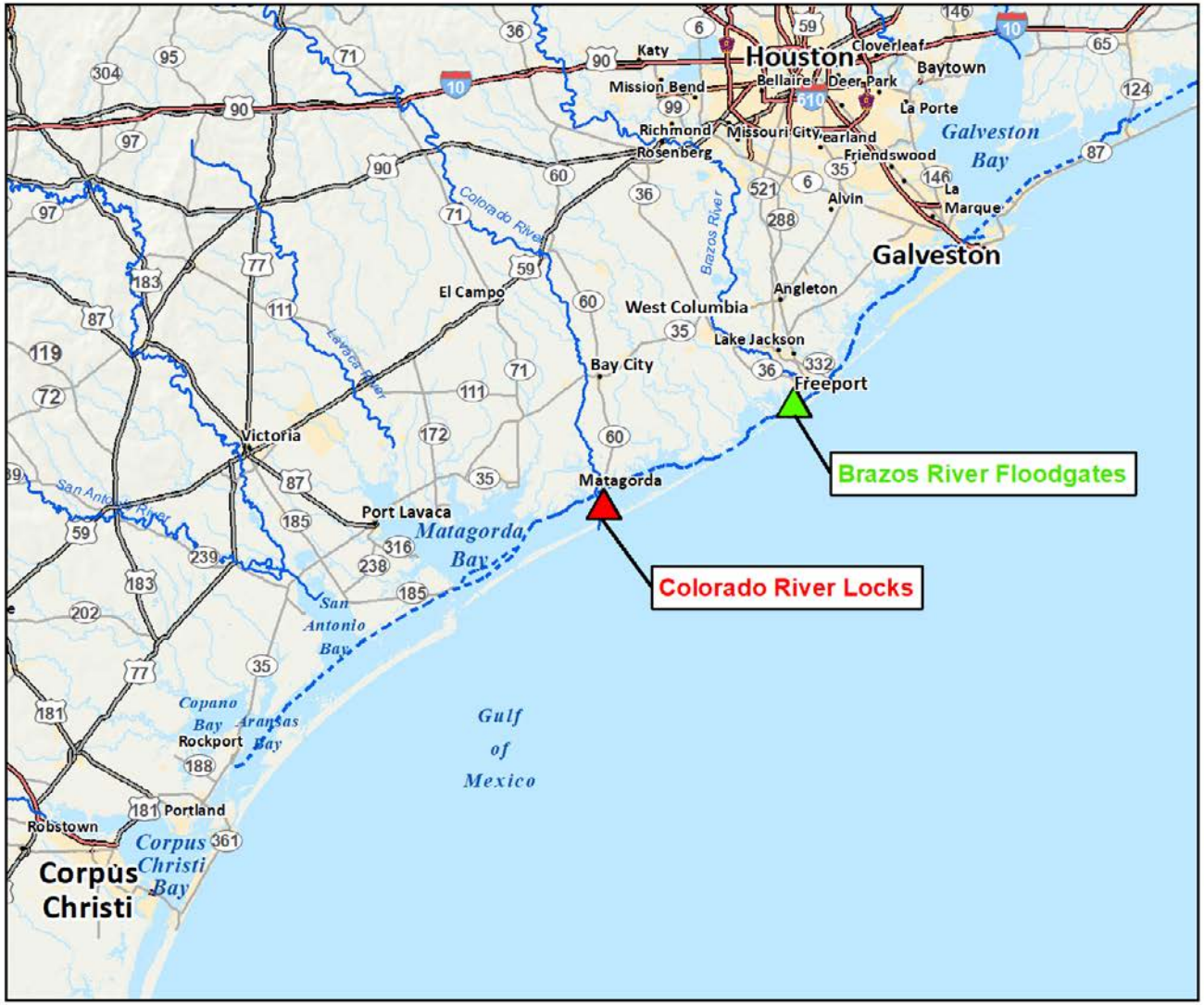
Appendix A

Maps and Figures

US Army Corps of Engineers
Galveston District

Figure 1
Project Location on County Base Map
Brazos River Floodgates and Colorado River Floodgates



Legend

- Brazos River Floodgates
- Colorado River Locks
- Gulf Intracoastal Waterway
- River

1:2,000,000

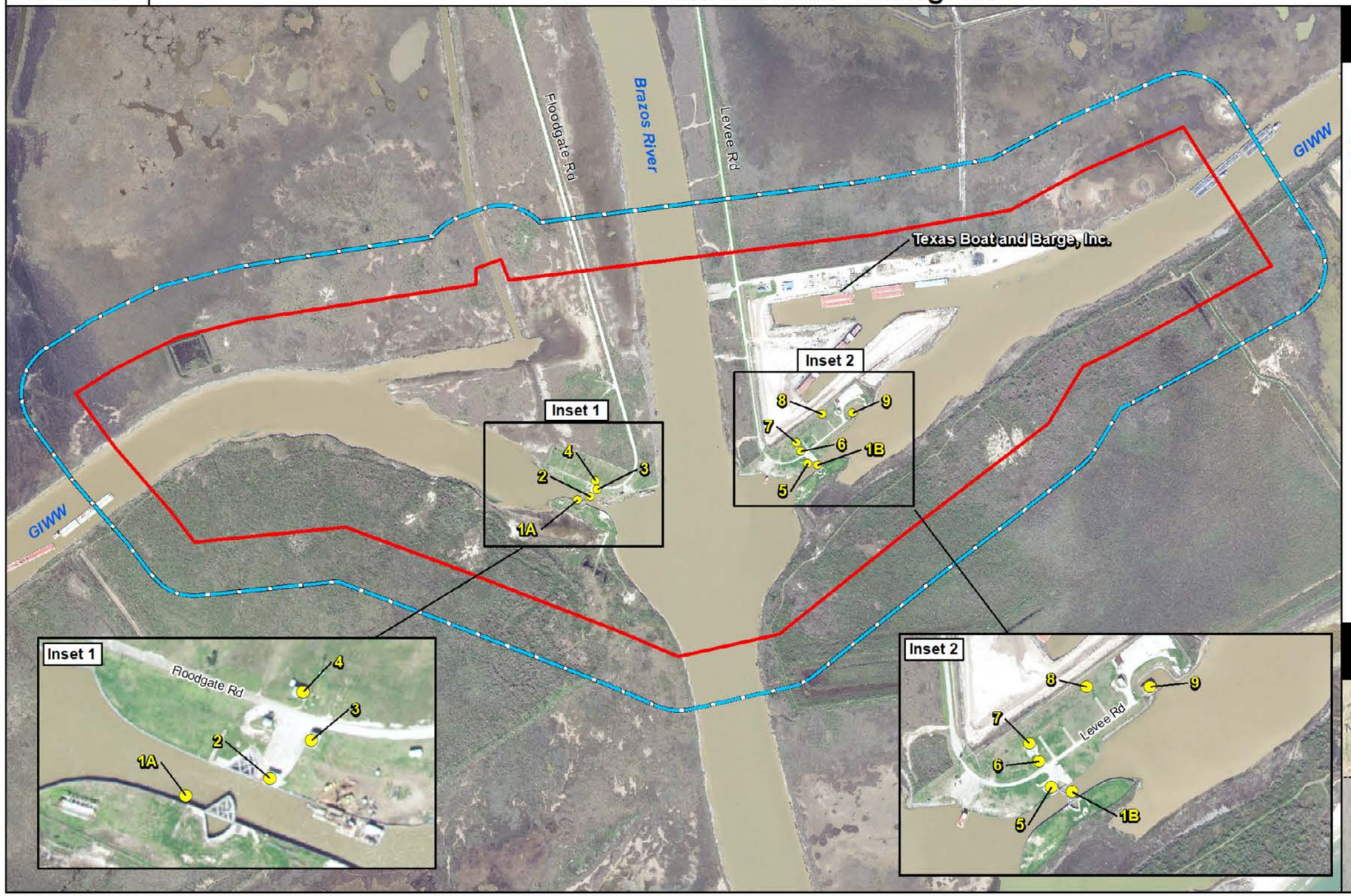
0 10 20 40 Miles

Base Map: ESRI

Location Map

US Army Corps of Engineers
Galveston District

Figure 2
Area of Potential Effect and Inventoried Resources
Brazos River Floodgates



Legend

- Inventoried Resources (#)
- Study Area
- Area of Potential Effect for Historic Resources (500 feet)

1:12,500

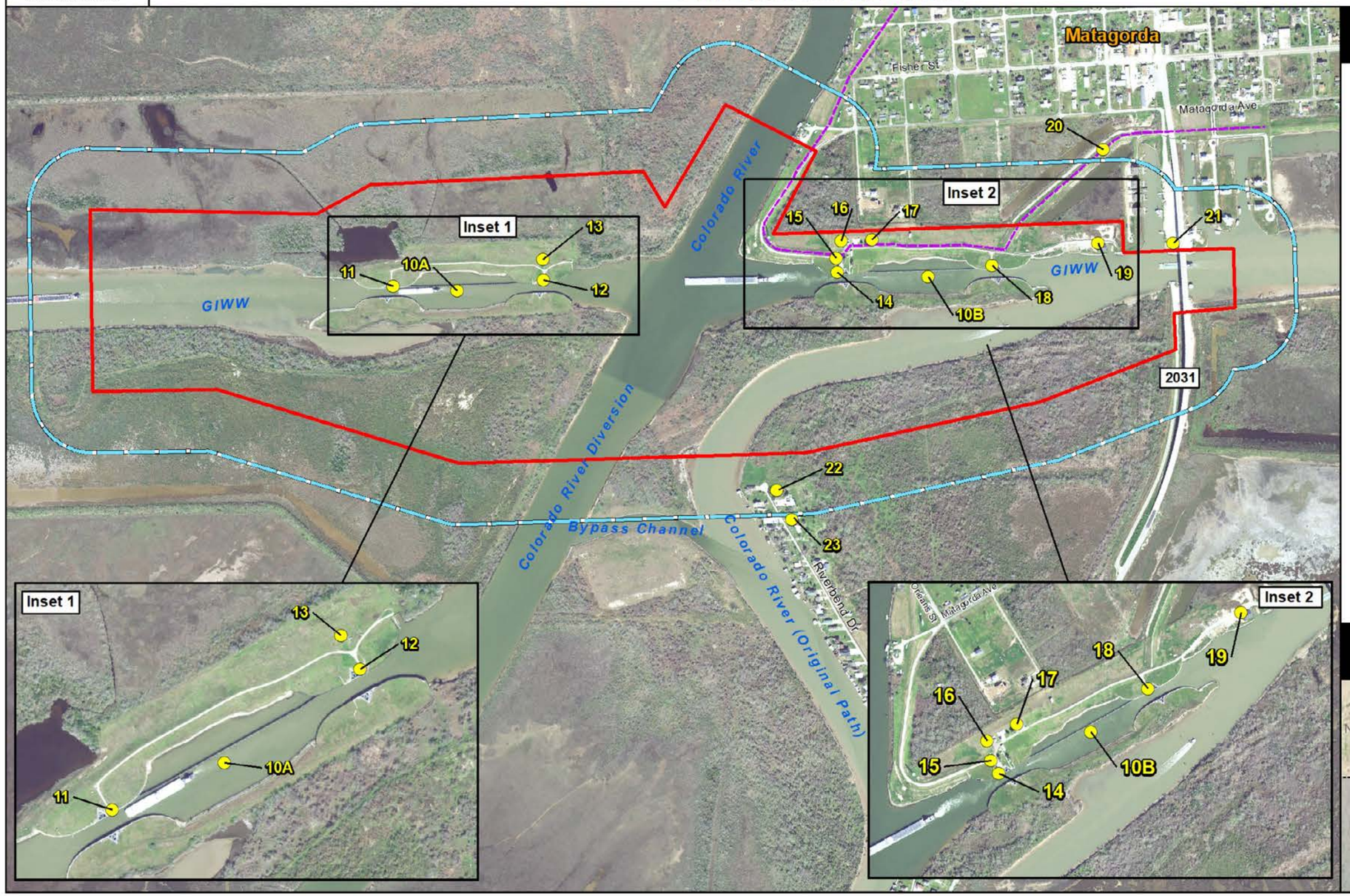
0 500 1,000 Feet

Base Map: TOP Aerial Imagery, 2015

Location Map

US Army Corps of Engineers
Galveston District

Figure 3
Area of Potential Effect and Inventoried Resources
Colorado River Locks



Legend

- Inventoried Resource (#)
- Study Area
- Area of Potential Effect for Historic Resources (500 feet)
- Levee Centerline

1:11,000

0 500 1,000 Feet

Base Map: TOP Aerial Imagery, 2015

Location Map

Appendix B

Historic Resource Inventory Table

Historic Resource Inventory Table

Property No.	Latitude/Longitude	Function	Date(s)	Integrity/ Comments	NRHP Eligibility	Figure No.
1A	28.896362/ -95.388490	Transportation (water-related)/ Floodgates	1943	The west floodgates have replacement timber fenders. The floodgate guidewalls exhibit replacement timber fenders. Steel sheet piles and sheet protective fenders have corrosion, pitting, and section loss. Concrete elements of the floodgate show extensive cracking, spalling, and exposed rebar.	Not eligible	4
1B	28.897097/ -95.381515	Transportation (water-related)/ Floodgates	1943	The east floodgates themselves have replacement timber fenders. The floodgate guidewalls exhibit replacement timber fenders. Steel sheet piles and sheet protective fenders have corrosion, pitting, and section loss. Concrete elements of the floodgate show extensive cracking, spalling, and exposed rebar.	Not eligible	4
2	28.896441/ -95.388111	Transportation (water-related)/ Control house	1943	Alterations include non-historic-age windows, doors, and a new flat roof with overhanging eaves. Originally the control house exhibited Moderne detailing with horizontal banding near the roofline and multi-light windows that wrapped around the building. The control house was also enlarged in the 1970s, nearly doubling its original size.	Not eligible	4
3	28.896610/ -95.387924	Transportation (water-related)/ Support building	1943	It is currently used as a tool shed. Alterations include a new door and roof, new shutters, and missing and replacement siding on the east elevation to accommodate a portable air conditioning unit.	Not eligible	4
4	28.896828/ -95.387964	Transportation (water-related)/ Power house	1943	Alterations include some replacement siding. There is also some missing siding and deteriorating sliding entrance doors.	Not eligible	4
5	28.897147/ -95.381801	Transportation (water-related)/ Control house	1943	The Moderne horizontal banding near the roofline is faintly visible. Alterations include non-historic-age windows and doors, as well as infilled windows and door on the north elevation.	Not eligible	4
6	28.897464/ -95.381982	Transportation (water-related)/ Power house	1943	Alterations include some replacement siding and replacement shutters. There is also some missing siding and deteriorating sliding entrance doors.	Not eligible	4
7	28.897681/ -95.382116	Transportation (water-related)/ Office	1943	Alterations include a small, partially enclosed porch on the west elevation and replacement windows on the north elevation. The original door accessing the garage has also been infilled.	Not eligible	4
8	28.898387/ -95.381340	Transportation (water-related)/ Support building	1943	The building exhibits some deteriorating and missing siding.	Not eligible	4
9	28.898402/ -95.380459	Transportation (water-related)/ Boat house	Ca. 1970	Boat house replaced a previously smaller boat house. No-longer operable boat lift machinery is inside the building.	Not eligible	4

Historic Resource Inventory Table

Property No.	Latitude/Longitude	Function	Date(s)	Integrity/ Comments	NRHP Eligibility	Figure No.
10A	28.679311/ -95.981781	Transportation (water-related)/ River locks	1944/1951	The west lock gates themselves show very few alterations aside from replacement timber fenders. The lock guidewalls exhibit replacement timber fenders and impact damage. Steel sheet piles and sheet protective fenders have corrosion, pitting, and section loss. Concrete elements of the lock show extensive cracking, spalling, and exposed rebar.	Not eligible	3
10B	28.684215/ -95.971145	Transportation (water-related)/ River locks	1944/1951	The east lock gates themselves show very few alterations aside from replacement timber fenders. The lock guidewalls exhibit replacement timber fenders and impact damage. Steel sheet piles and sheet protective fenders have corrosion, pitting, and section loss. Concrete elements of the lock show extensive cracking, spalling, and exposed rebar.	Not eligible	3
11	28.678783/ -95.983302	Transportation (water-related)/ Control house	1951	Alterations include several window lights that are currently boarded.	Not eligible	3
12	28.680376/ -95.979920	Transportation (water-related)/ Control house	1944	Alterations include a small non-historic-age rear addition, non-historic-age windows, doors, and a new flat roof with overhanging eaves. Originally the control house exhibited Moderne detailing with horizontal banding near the roofline and multi-light windows. The control house was also enlarged in the 1970s, nearly doubling its original size.	Not eligible	3
13	28.680788/ -95.980165	Transportation (water-related)/ Power house	1944	Alterations include non-historic-age windows, doors, and infilled windows on the west elevation. The machinery in the power house is no longer used, and the building currently functions as storage for the west locks.	Not eligible	3
14	28.683692/ -95.973452	Transportation (water-related)/ Control house	1944	Alterations include a small non-historic-age rear addition, non-historic-age windows, doors, and a new flat roof with overhanging eaves. Originally the control house exhibited Moderne detailing with horizontal banding near the roofline and multi-light windows. The control house was also enlarged in the 1970s, nearly doubling its original size.	Not eligible	3
15	34.187013/ -101.250040	Transportation (water-related)/ Power house	1944	Alterations include one replacement windows and replacement doors.	Not eligible	3
16	28.684088/ -95.973533	Transportation (water-related)/ Office	1944	Alterations include some replacement doors and the integrated garage has been converted to office space.	Not eligible	3

Historic Resource Inventory Table

Property No.	Latitude/Longitude	Function	Date(s)	Integrity/ Comments	NRHP Eligibility	Figure No.
17	28.684418/ -95.972841	Transportation (water-related)/ Support building	1944	It appears that the building was a communal garage used by the original seven residences (no longer extant) and one office. It does not appear to exhibit alterations.	Not eligible	3
18	28.685066/ -95.969803	Transportation (water-related)/ Control house	1951	Alterations include a replacement door and window.	Not eligible	3
19	28.686564/ -95.967613	Transportation (water-related)/ Boat house	Ca. 1965	The boat house was almost completely reconstructed after a fire.	Not eligible	3
20	28.688502/ -95.968538	Government/ Public Works (Levee)	Ca. 1940/1961	Alterations are not apparent.	Not eligible	3
21	28.687294/ -95.965887	Transportation (Road-related)/ Control house	Ca. 1950	The building is no longer in use.	Not eligible	3
22	28.678416/ -95.972236	Domestic/ Single dwelling	Ca. 1970	Alterations include new siding, windows, and the non-historic-age carport.	Not eligible	3
23	34.142996/ -101.205287	Domestic/ Single dwelling	Ca. 1970	Property consists of a side gable residence and two sheds. Alterations include the rear addition on the residence.	Not eligible	3

Appendix C

Survey Forms

Resource No:	1A
Latitude/Longitude:	28.896362/ -95.388490
Address:	Brazos River West Floodgate, Brazoria County, Texas
Function:	Infrastructure/Floodgates
Construction Date:	1943
Comments:	The Brazos River West Floodgate was constructed in 1943 and is located west of the Brazos River along the GIWW. The steel, concrete, and timber floodgate measures 750 feet long and 75 feet wide. Each of the two approximately 45-foot-long sector gates displays steel construction with timber protective fenders. Walkways extend across the top of each gate, allowing access to the gate and ability to walk to the south sector gate. The gates themselves show very few alterations aside from replacement timber fenders. The floodgate guide walls exhibit replacement timber fenders. Steel sheet piles and sheet protective fenders have corrosion, pitting, and section loss. Concrete elements of the floodgate show extensive cracking, spalling, and exposed rebar.
NRHP Eligibility:	Not eligible
Survey Date:	August 2017

Overall view of west Brazos River floodgate, facing northwest

Resource No. 1A

View of north guide wall, facing northwest. Resource Nos. 2-4 include control house and sheds.

View of south guide wall, facing west

Resource No. 1A

Representative view of section loss, pack rust, and corrosion in steel section of guide wall, facing north

Representative view of damage to timber fenders, facing north

Resource No. 1A

Representative view of floodgates in process of opening, facing northeast

View of south gate, facing south

Resource No. 1A

Representative view of closed gate, facing south.

Representative view of gate in process of opening, facing northeast. Control house (Resource No. 2) is in the background.

Resource No. 1A

Representative view of sector gate from recess well, facing southwest

Representative view of gate from recess well, facing south

Resource No:	1B
Latitude/Longitude:	28.897097/ -95.381515
Address:	Brazos River East Floodgate, Brazoria County, Texas
Function:	Infrastructure/Floodgates
Construction Date:	1943
Comments:	The Brazos River East Floodgate was constructed in 1943 and is located east of the Brazos River along the GIWW. The steel, concrete, and timber floodgate measures 750 feet long and 75 feet wide. Each of the two approximately 45-foot-long sector gates displays steel construction with timber protective fenders. Walkways extend across the top of each gate, allowing access to the gate and ability to walk to the south sector gate. The gates themselves show very few alterations aside from replacement timber fenders. The floodgate guide walls exhibit replacement timber fenders. Steel sheet piles and sheet protective fenders have corrosion, pitting, and section loss. Concrete elements of the floodgate show extensive cracking, spalling, and exposed rebar.
NRHP Eligibility:	Not eligible
Survey Date:	August 2017

Overall view of east Brazos River floodgate, facing northwest

Resource No. 1B

View of north guardwall, facing north

View of south guide wall, facing east

Resource No. 1B

Representative view of section loss and impact damage to steel sheets, facing east

Representative view of cracked and spalling concrete, facing north

Resource No. 1B

View of north gate, facing north

View of south gate, facing east

Resource No. 1B

View of representative concrete recess well, facing north

Representative view of closed gates, facing northeast

Resource No. 1B

View of GIWW and guardwalls, facing northeast

View of east floodgates and buildings from GIWW, facing southwest

Resource No.:	2
Latitude/Longitude:	28.896441/ -95.388111
Address:	Brazos River West Floodgate, Brazoria County, Texas
Function:	Infrastructure/Control house
Construction Date:	1943
Comments:	The concrete block control house is located on the north guide wall adjacent to the north sector gate. The small flat roof building exhibits large non-historic-age picture windows on the east, south, and west elevations and entrance doors on the south and east elevations. Alterations include non-historic-age windows, doors, and a new flat roof with overhanging eaves. Originally the control house exhibited Moderne detailing with horizontal banding near the roofline and multi-light windows that wrapped around the building. The control house was also enlarged in the 1970s, nearly doubling its original size.
NRHP Eligibility:	Not eligible

View of Brazos River west floodgate control house, facing north

Resource No. 2

View of Brazos River west floodgate control house, facing northwest

View of rear (north) elevation of control house, facing southwest

Resource No. 2

Photo dated to the 1970s showing the original size and Moderne detailing of the west control house. The multi-light windows have been replaced. Image courtesy USACE.

Resource No:	3
Latitude/Longitude:	28.896610/ -95.387924
Address:	Brazos River East Floodgate, Brazoria County, Texas
Function:	Infrastructure/Support building
Construction Date:	1943
Comments:	This front-gable building was originally a tool shed and restroom for the west floodgates. It exhibits horizontal siding, two-over-two windows with shutters, and an entrance door on the west elevation. It is currently used as a tool shed. Alterations include a new door and roof, new shutters, and missing and replacement siding on the east elevation to accommodate a portable air conditioning unit.
NRHP Eligibility:	Not eligible
Survey Date:	August 2017

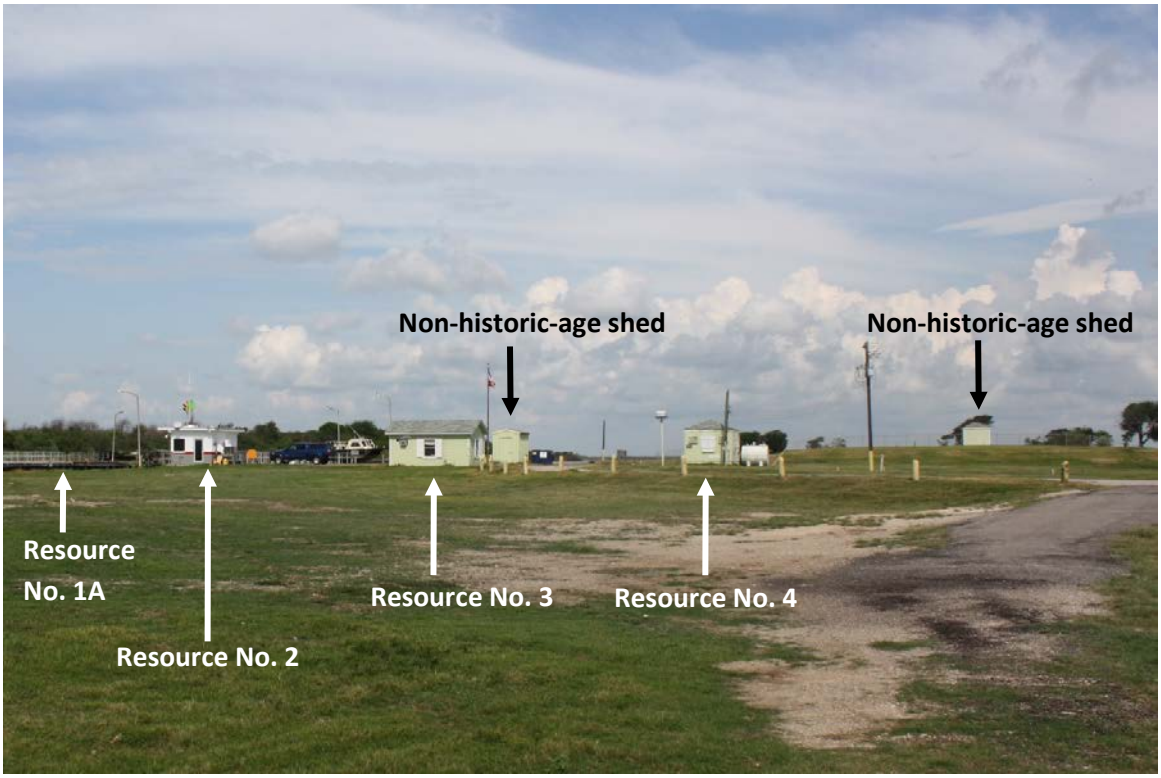
Oblique view of Resource No. 3, facing east

Resource No. 3

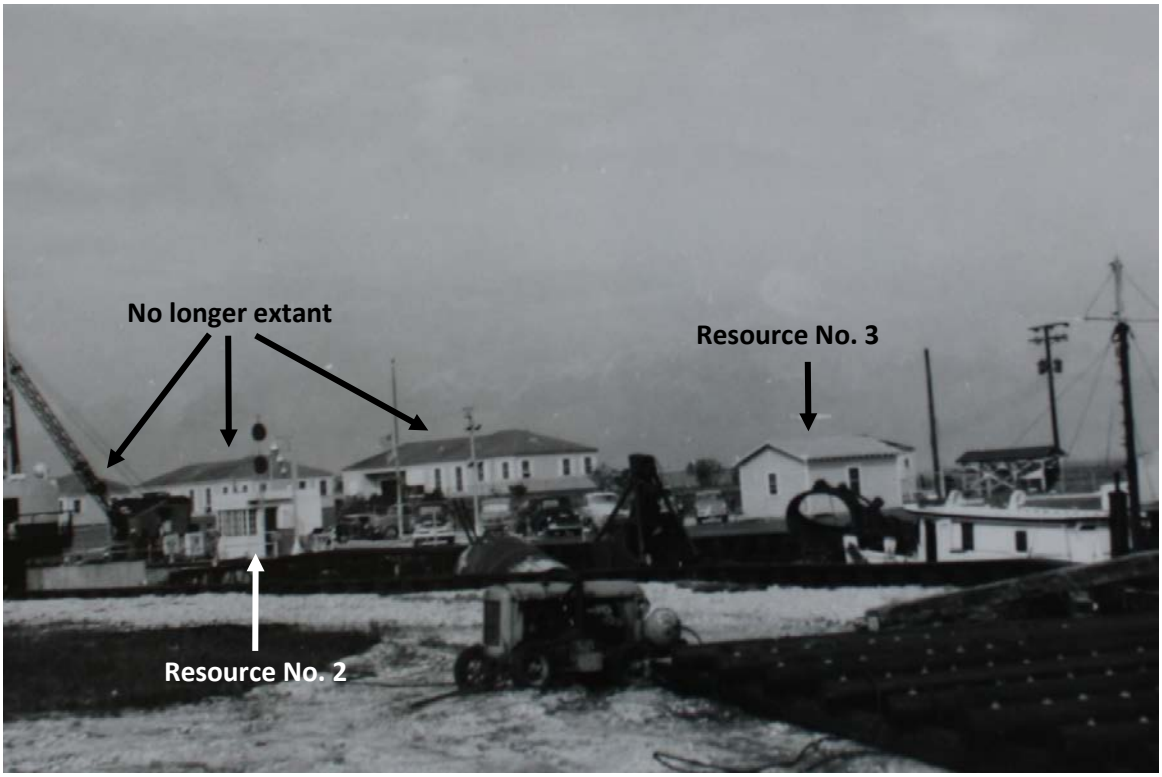
View of east elevation, facing northwest

Oblique view of Resource No. 3, facing south

Resource No. 3



Overall view of Resource Nos. 1A, 2, 3, and 4, facing northwest from access road



Early 1940s photo, facing northwest. Resource No. 3 is on the right. Image courtesy of USACE.

Resource No:	4
Latitude/Longitude:	28.896828/ -95.387964
Address:	Brazos River East Floodgate, Brazoria County, Texas
Function:	Infrastructure/Power house
Construction Date:	1943
Comments:	This hipped-roof building is the original power building for the floodgates. Situated north of the control house, the building exhibits horizontal siding, a large opening on the south elevation, and shuttered windows. Alterations include some replacement siding. There is also some missing siding and deteriorating sliding entrance doors.
NRHP Eligibility:	Not eligible
Survey Date:	August 2017

View of south elevation, facing northeast

Resource No. 4

Oblique view, facing north

View of north elevation, facing southwest

Resource No.:	5
Latitude/Longitude:	28.897147/ -95.381801
Address:	Brazos River East Floodgate, Brazoria County, Texas
Function:	Infrastructure/Control house
Construction Date:	1943
Comments:	The concrete-block control house is located on the north guide wall adjacent to the north sector gate. The small flat roof building exhibits large non-historic-age picture windows on the south and west elevations and entrance doors on the south and east elevations. The Moderne horizontal banding near the roofline is faintly visible. Alterations include non-historic-age windows and doors, as well as infilled windows and door on the north elevation.
NRHP Eligibility:	Not eligible

View of south elevation, facing northwest

Resource No. 5

View of north elevation, facing south

Photo from 1969 showing rear (north) elevation of control house, facing southeast. Image courtesy of USACE.

Oblique view, facing northeast

Photo from 1969 showing original multi-light windows, facing northeast. Image courtesy of USACE.

Resource No.:	6
Latitude/Longitude:	28.897464/ -95.381982
Address:	Brazos River East Floodgate, Brazoria County, Texas
Function:	Infrastructure/Power house
Construction Date:	1943
Comments:	This hipped-roof building is the original power building for the floodgates. Situated north of the control house, the building exhibits horizontal siding, a large opening on the east elevation, and shuttered windows. Alterations include some replacement siding and replacement shutters. There is also some missing siding and deteriorating sliding entrance doors.
NRHP Eligibility:	Not eligible
Survey Date:	August 2017

Oblique view, facing west

Resource No. 6

Oblique view, facing north. Resource No. 7 is in the background.

View of north elevation, facing southeast

Resource No. 6

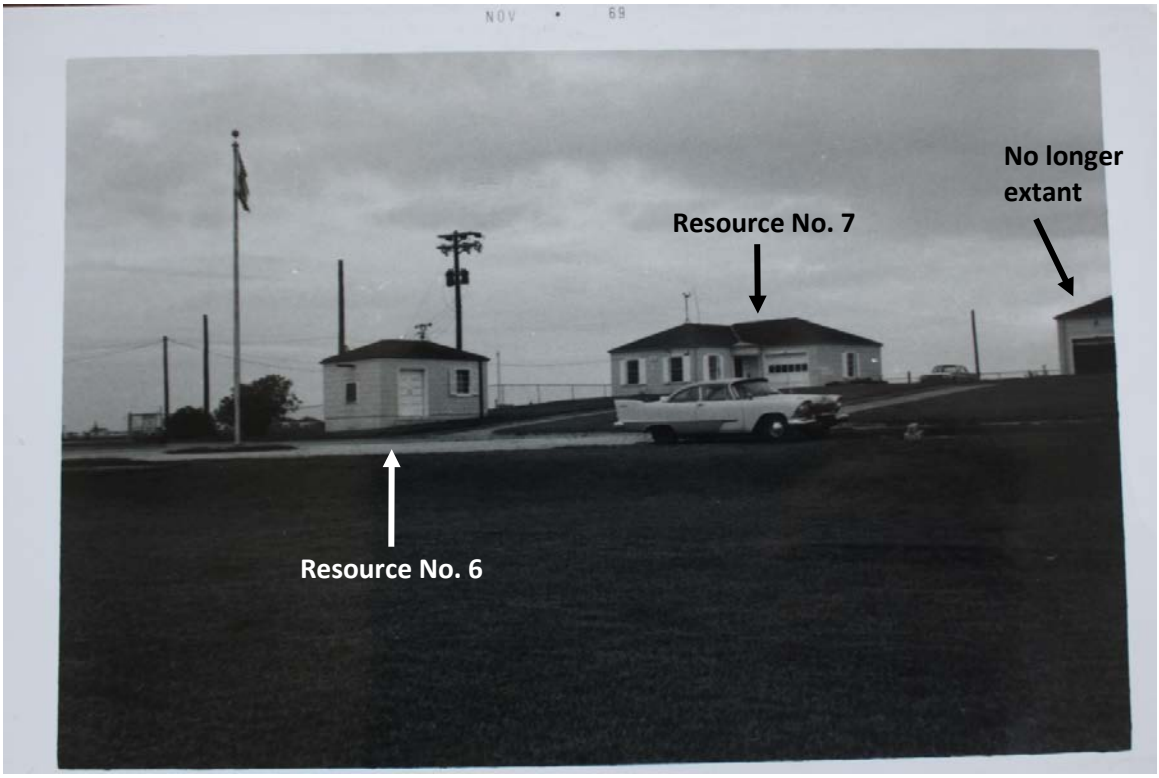
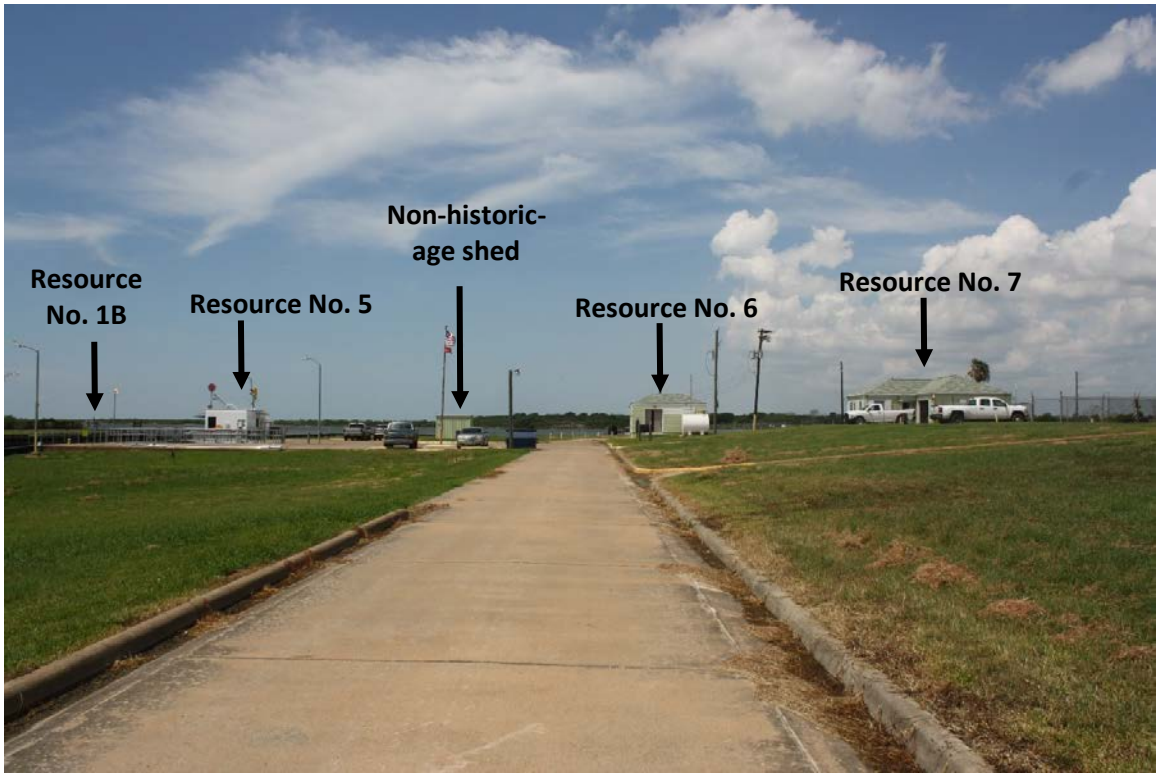


Photo dated 1969 showing Resource Nos. 6 and 7, facing west. Image courtesy of USACE.



View of Resource Nos. 1B, 5, 6, and 7, facing southwest from internal access road

Resource No.:	7
Latitude/Longitude:	28.897681/ -95.382116
Address:	Brazos River East Floodgate, Brazoria County, Texas
Function:	Infrastructure/Office
Construction Date:	1943
Comments:	This hipped-roof L-plan building is the office and warehouse for the floodgates. The original plans of the site showed this building as an office and warehouse. Situated just north of the power house (Resource No. 6), the building has horizontal siding, two-over-two windows with shutters, and an integrated garage. Alterations include a small, partially enclosed porch on the west elevation and replacement windows on the north elevation. The original door accessing the garage has also been infilled.
NRHP Eligibility:	Not eligible
Survey Date:	August 2017

View of south elevation, facing northeast

Resource No. 7

Photo dated 1969 showing front (south) elevation of office, facing northwest. Garage access door has since been infilled. Image courtesy of USACE.

View of east elevation, facing southwest

Resource No. 7

View of west elevation with porch addition, facing east

View of rear (north) elevation, facing south. Non-historic-age shed is to the right.

Resource No.:	8
Latitude/Longitude:	28.898387/ -95.381340
Address:	Brazos River East Floodgate, Brazoria County, Texas
Function:	Infrastructure/Support building
Construction Date:	1943
Comments:	This small hipped-roof building was originally a well pumphouse for the no-longer extant four residences. Situated approximately 200 feet from the boat house (Resource No. 9), the building has horizontal siding and an entrance door on the south elevation. The building exhibits some deteriorating and missing siding.
NRHP Eligibility:	Not eligible
Survey Date:	August 2017

Oblique view of pumphouse, facing west

Resource No. 8

View of rear (north elevation), facing south

Overall view of Resource Nos. 8 and 9, facing northeast from internal access road. The driveways led to residences which are no longer extant.

Resource No.:	9
Latitude/Longitude:	28.898402/ -95.380459
Address:	Brazos River East Floodgate, Brazoria County, Texas
Function:	Infrastructure/Boat house
Construction Date:	ca. 1970
Comments:	This gable roof building is the boat house for the east floodgates. Constructed ca. 1970, it replaced a previously smaller boat house. The corrugated metal building is open on the east elevation and is situated in the far eastern portion of the east floodgate area. The inside of the boat house includes two boat bays, docks, and no-longer operable boat lift machinery.
NRHP Eligibility:	Not eligible
Survey Date:	August 2017

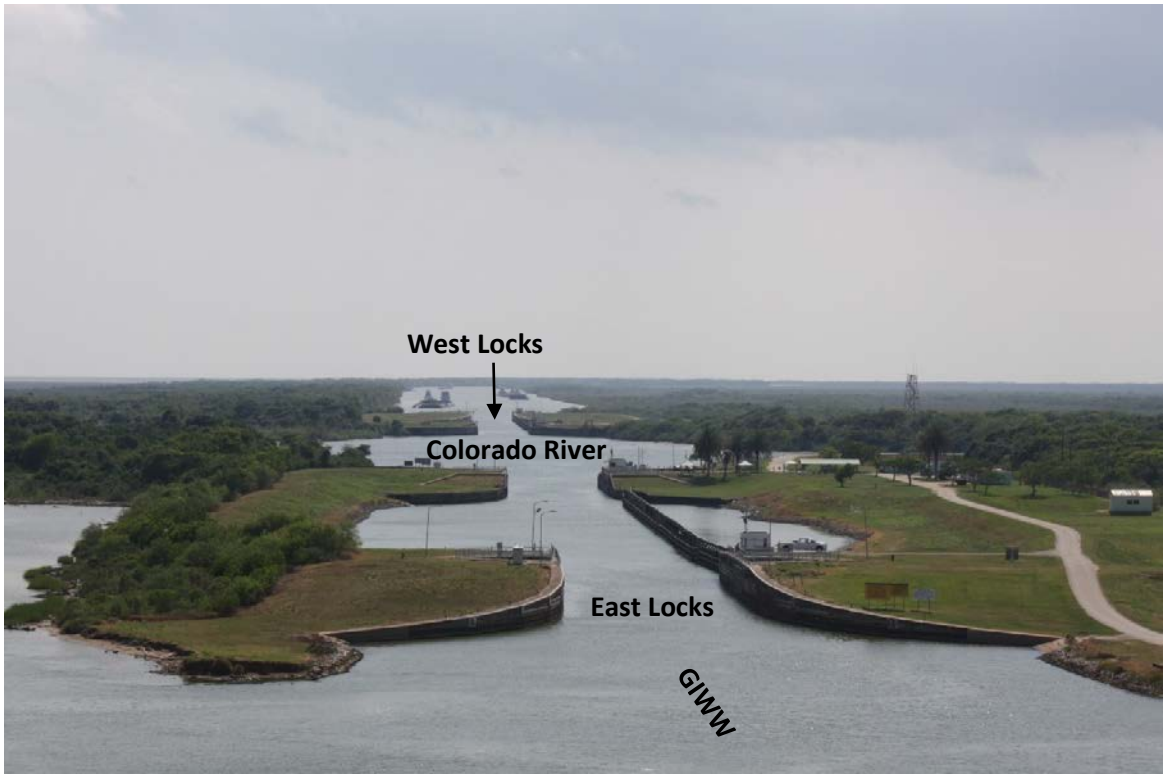
Oblique view of boat house, facing west

Resource No. 9

View of south elevation, facing northwest from the GIWW

Oblique view, facing east from internal access road

Resource No.:	10A
Latitude/Longitude:	28.679311/ -95.981781
Address:	Colorado River West Lock, Matagorda County, Texas
Function:	Infrastructure/River Locks
Construction Date:	1944 and 1951
Comments:	The Colorado River West Lock is located west of the Colorado River along the GIWW. The lock consists of two sets of gates (four gates total) separated by a lock chamber. The set of gates closest to the Colorado River date to 1944 when the gates operated as floodgates. The adjacent lock chamber and gates date to 1951 when the Colorado River floodgates were converted to locks. All four steel, concrete, and timber gates measure 1,200 feet long and 75 feet wide. Each of the four approximately 45-foot-long sector gates has steel construction with timber protective fenders. Walkways extend across the top of each gate, allowing access to the gate and ability to walk to the south sector gate. The gates themselves show very few alterations aside from replacement timber fenders. The lock gate guide walls exhibit replacement timber fenders and impact damage. Steel sheet piles and sheet protective fenders have corrosion, pitting, and section loss. Concrete elements of the locks show extensive cracking, spalling, and exposed rebar.
NRHP Eligibility:	Not eligible
Survey Date:	August 2017



View of Colorado River Locks from FM 2031 bridge, facing southwest

Resource No. 10A

View of west lock from Colorado River, facing southwest

View of 1944 guide walls, lock gates, and lock chamber, facing southwest

Resource No. 10A

Representative photo of damage to timber fenders and steel sheets, facing south

View of 1944 north lock gate closest to Colorado River, facing west

Resource No. 10A

View of 1944 south lock gate closest to Colorado River, facing east

Representative photo of closed lock gates, facing northwest

Resource No. 10A

Representative photo of lock concrete recess well, facing southwest

View of lock chamber from GIWW, facing northeast

Resource No. 10A

View of lock chamber from 1944 control house (Resource No. 12), facing southwest

Representative photo showing damage to lock chamber timber guide wall, facing northwest

Resource No. 10A

View of 1951 lock gates, facing southwest

View of 1951 north lock gate and control house, facing west

Resource No. 10A

View of 1951 south lock gate, facing southwest

View of westernmost guide walls, facing northeast

Resource No.:	10B
Latitude/Longitude:	28.684215/ -95.971145
Address:	Colorado River East Lock, Matagorda County, Texas
Function:	Infrastructure/River Locks
Construction Date:	1944 and 1951
Comments:	The Colorado River East Lock is located east of the Colorado River along the GIWW. The lock consists of two sets of gates (four gates total) separated by a lock chamber. The set of gates closest to the Colorado River date to 1944 when the gates operated as floodgates. The adjacent lock chamber and gates to the east date to 1951 when the Colorado River floodgates were converted to locks. All four steel, concrete, and timber gates measure 1,200 feet long and 75 feet wide. Each of the four approximately 45-foot-long sector gates has steel construction with timber protective fenders. Walkways extend across the top of each gate, allowing access to the gate and ability to walk to the south sector gate. The gates themselves show very few alterations aside from replacement timber fenders. The lock gate guide walls exhibit replacement timber fenders and impact damage. Steel sheet piles and sheet protective fenders have corrosion, pitting, and section loss. Concrete elements of the locks show extensive cracking, spalling, and exposed rebar.
NRHP Eligibility:	Not eligible
Survey Date:	August 2017

View of east lock guide walls, lock gates, and lock chamber, facing northeast from the Colorado River

Resource No. 10B

View of 1944 lock gates and guide walls, facing northeast

Representative view of damage to timber guide walls, facing west

Resource No. 10B

View of north 1944 lock gate, facing west

View of 1944 south lock gate, facing south

Resource No. 10B

View of 1944 lock gates, facing southwest toward Colorado River

View of lock chamber, facing northeast

Resource No. 10B

View of 1951 guide walls and lock gates from lock chamber, facing northeast

Representative view of cracking concrete and steel corrosion, facing east

Resource No. 10B

View of 1951 north lock gate, facing west

View of 1951 south lock gate, facing west

Resource No. 10B

Representative view of lock gate and recess well, facing northeast

View of east lock guide walls, lock gates, and lock chamber, facing southwest

Resource No.:	11
Latitude/Longitude:	28.678783/ -95.983302
Address:	Colorado River West Lock, Matagorda County, Texas
Function:	Infrastructure/Control house
Construction Date:	1951
Comments:	The concrete block control house is located on the north guide wall adjacent to the 1951 north lock gate. The small flat roof building exhibits Moderne architectural detailing with a smooth stucco surface, flat roof, horizontal banding near the roofline, and multi-light single-pane windows that wrap around the building. Alterations include several window lights that are currently boarded.
NRHP Eligibility:	Not eligible

View of control house from GIWW, facing north

Resource No. 11

View of east elevation, facing west

View of rear (north) and west elevation, facing east

Resource No.:	12
Latitude/Longitude:	28.680376/ -95.979920
Address:	Colorado River West Lock, Matagorda County, Texas
Function:	Infrastructure/Control house
Construction Date:	1944
Comments:	The concrete block control house is located on the north guide wall adjacent to the 1944 north lock gate. The small flat roof building exhibits large non-historic-age picture windows on the east, south, and west elevations and entrance doors on the south and east elevations. Alterations include a small non-historic-age rear addition, non-historic-age windows, doors, and a new flat roof with overhanging eaves that changed the overall feeling and style of the building. Originally the control house exhibited Moderne detailing with horizontal banding near the roofline and multi-light windows. The control house was also enlarged in the 1970s, nearly doubling its original size.
NRHP Eligibility:	Not eligible

View of control house, facing west

Resource No. 12

Photo dated 1944 showing Resource No. 12, facing west. Image courtesy of USACE.

View of rear (north) elevation, facing southeast

Resource No.:	13
Latitude/Longitude:	28.680788/ -95.980165
Address:	Colorado River West Lock, Matagorda County, Texas
Function:	Infrastructure/Power house
Construction Date:	1944
Comments:	The building is the former power house for the west lock, located approximately 120 feet northwest of the 1944 control house. The hipped roof building has horizontal siding, one-over-one windows, and a large opening with plywood doors on the south elevation. Alterations include non-historic-age windows, doors, and infilled windows on the west elevation. The machinery in the power house is no longer used, and the building currently functions as storage for the west locks.
NRHP Eligibility:	Not eligible

View of south elevation, facing northwest

Resource No. 13

Oblique view of power house, facing north

Photo dated 1944 showing power house, facing north

Resource No. 13

View of east elevation and internal access road, facing southwest

View showing relationship between 1944 control house and power house, facing north

Resource No.:	14
Latitude/Longitude:	28.683421/ -95.973275
Address:	Colorado River East Lock, Matagorda County, Texas
Function:	Infrastructure/Control house
Construction Date:	1944
Comments:	The concrete block control house is located on the north guide wall adjacent to the 1944 north lock gate. The small flat roof building exhibits large non-historic-age picture windows on the east, south, and west elevations and entrance doors on the south and east elevations. Alterations include a small non-historic-age rear addition, non-historic-age windows, doors, and a new flat roof with overhanging eaves. Originally the control house exhibited Moderne detailing with horizontal banding near the roofline and multi-light windows. The control house was also enlarged in the 1970s, nearly doubling its original size.
NRHP Eligibility:	Not eligible

View of control house from GIWW, facing northeast

Resource No. 14

View of east elevation, facing southwest

Oblique view, facing south

Resource No:	15
Latitude/Longitude:	28.683692/ -95.973452
Address:	Colorado River East Lock, Matagorda County, Texas
Function:	Infrastructure/Power house
Construction Date:	1944
Comments:	This hipped-roof building is the original power building for the east lock. Situated north of the control house, the building exhibits horizontal siding, a large opening on the south elevation with swinging doors, and one-over-one and six-over-six windows. Alterations include one replacement windows and replacement doors.
NRHP Eligibility:	Not eligible
Survey Date:	August 2017

Oblique view, facing northwest

Resource No. 15

Oblique view, facing southwest

Oblique view, facing east

Resource No:	16
Latitude/Longitude:	28.684088/ -95.973533
Address:	Colorado River East Lock, Matagorda County, Texas
Function:	Infrastructure/Office
Construction Date:	1944
Comments:	This hipped-roof L-plan building is the original office building for the east lock. Situated on the north side of the internal access road, the building has horizontal siding, an entrance door with metal a large opening on the south elevation, and a garage door on the east elevation. Alterations include some replacement doors and the integrated garage has been converted to office space.
NRHP Eligibility:	Not eligible
Survey Date:	August 2017

View of south elevation, facing north

Resource No. 16

Oblique view, facing west

View showing converted garage space, facing west

Resource No. 16

Oblique view, facing northeast

Oblique view, facing east

Resource No:	17
Latitude/Longitude:	28.684418/ -95.972841
Address:	Colorado River East Lock, Matagorda County, Texas
Function:	Infrastructure/Support building
Construction Date:	1944
Comments:	This shed roof garage is located on the north side of the internal access road. It has horizontal siding and six garage stalls. It appears that the building was a communal garage used by the original seven residences (no longer extant) and one office. It does not appear to exhibit alterations.
NRHP Eligibility:	Not eligible
Survey Date:	August 2017

View of south elevation of garage, facing northwest

Resource No. 17

View of garage, facing west

View of garage, facing north

Resource No:	18
Latitude/Longitude:	28.685066/ -95.969803
Address:	Colorado River East Lock, Matagorda County, Texas
Function:	Infrastructure/Control house
Construction Date:	1951
Comments:	The concrete block control house is located on the north guide wall adjacent to the 1951 north lock gate. The small flat roof building exhibits Moderne architectural detailing with a smooth stucco surface, flat roof, horizontal banding near the roofline, and multi-light single-pane windows that wrap around the building. Alterations include a replacement door and window.
NRHP Eligibility:	Not eligible
Survey Date:	August 2017

View of 1951 control house, facing north

Resource No. 18

View of 1951 control house, facing northeast

Photo dated 1954 showing the 1951 control house, facing northeast

Resource No. 18

View of east elevation, facing southwest

Oblique view, facing south

Resource No:	19
Latitude/Longitude:	28.686564/ -95.967613
Address:	Colorado River East Lock, Matagorda County, Texas
Function:	Infrastructure/Boat house
Construction Date:	ca. 1965
Comments:	This gable roof building is the boat house for the east locks. Constructed ca. 1965, the building has horizontal siding, one-over-one windows, an entrance door on the south elevation, and a large overhead door on the north elevation. The boat house is situated in the far eastern portion of the east lock area and includes two boat slips and docks. The boat house was almost completely reconstructed after a fire.
NRHP Eligibility:	Not eligible
Survey Date:	August 2017

View of boat house from GIWW, facing northwest

Resource No. 19

View of boat house from GIWW, facing northwest

View of boat house, facing west

Appendix D

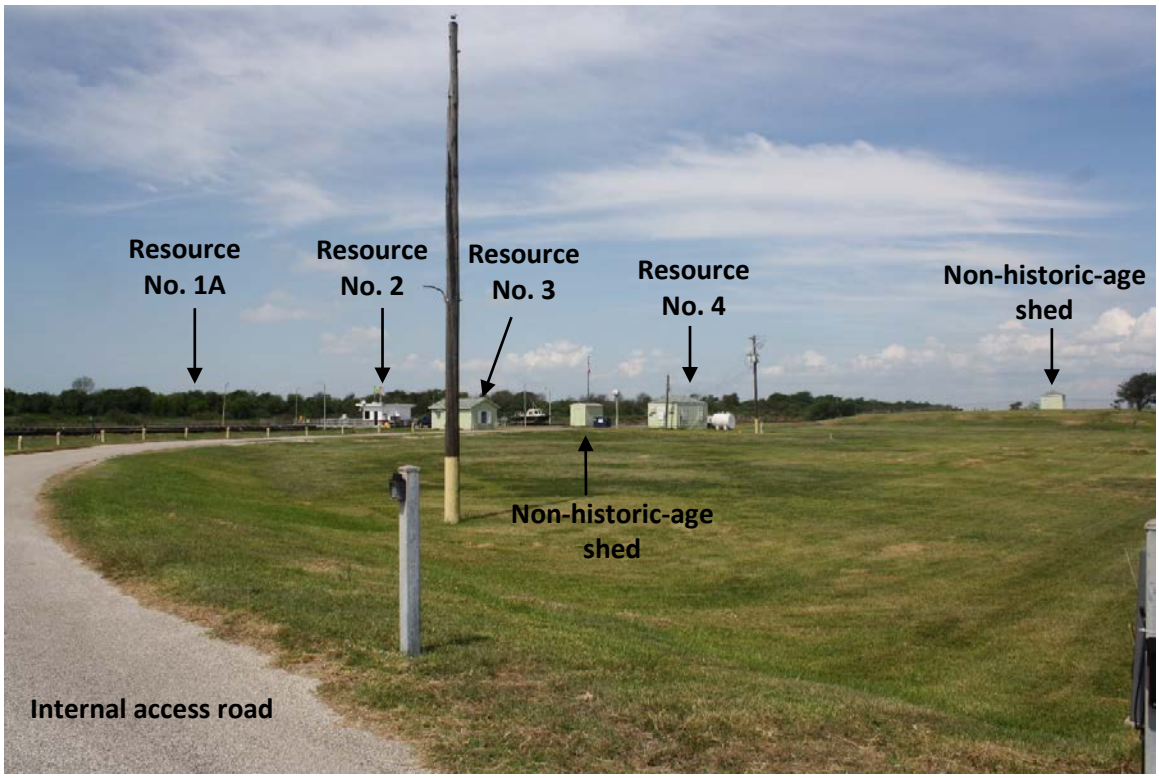
Study Area Photographs

Brazos River Floodgates – West Floodgates

D1: View of west floodgate access road from SH 36, facing southwest. Access road is 3.5 miles in length.

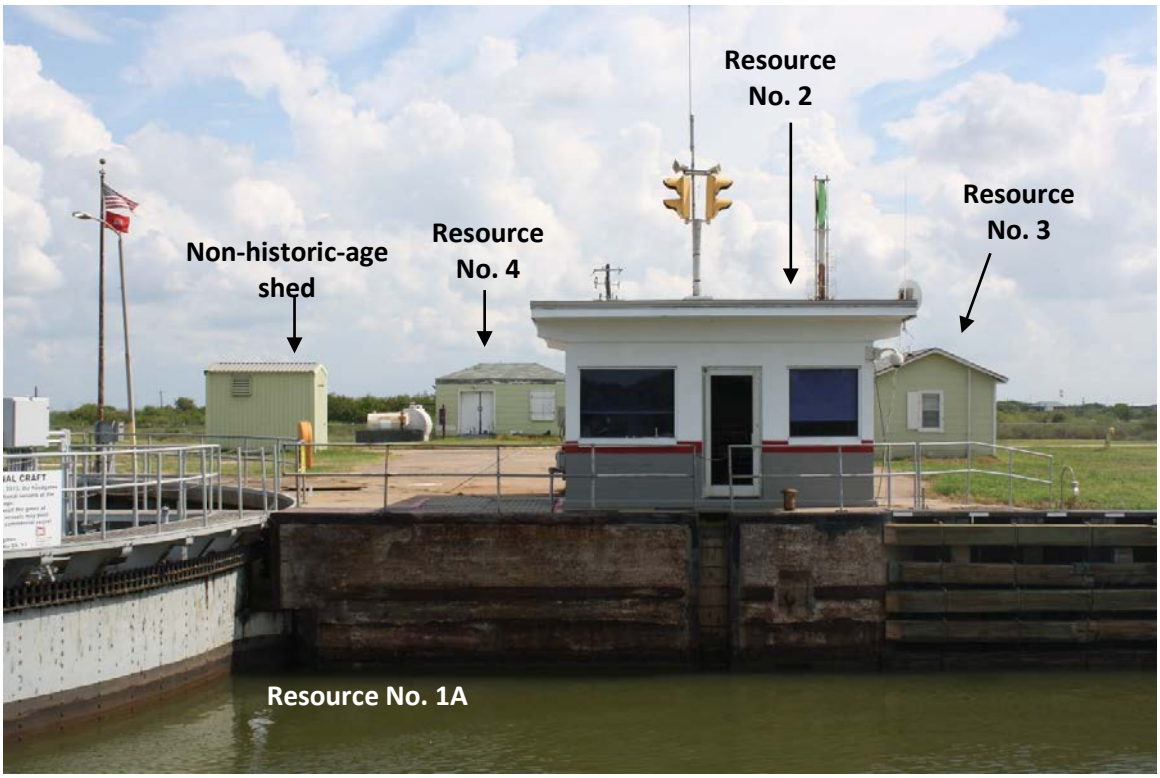
D2: View of west floodgates entrance gate, facing southeast toward the GIWW

D3: View of east floodgates from the west floodgates, facing east



D4: View of west floodgate site, facing southwest. Three houses used to be located in the grassy area between Resource No. 4 and the non-historic-age shed.

D5: Photo from the early 1940s showing the no longer extant three residences on the west floodgate, facing north. Photo courtesy of USACE.



D6: View showing relationship of west floodgate, control house, power house, and restroom/shed, facing northeast from GIWW

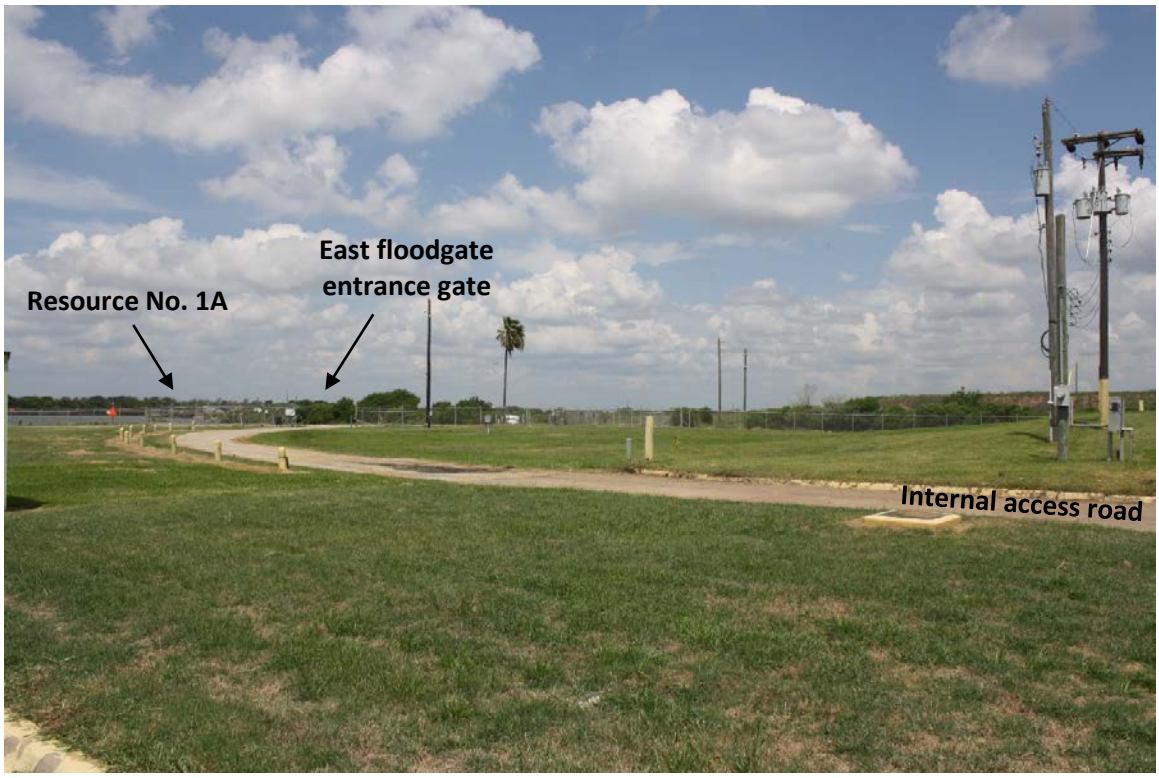
D7: View of west floodgate internal access road, facing southwest. Grassy area to the right used to have three residences.

D8: View of barge traveling east through west floodgate, facing northeast

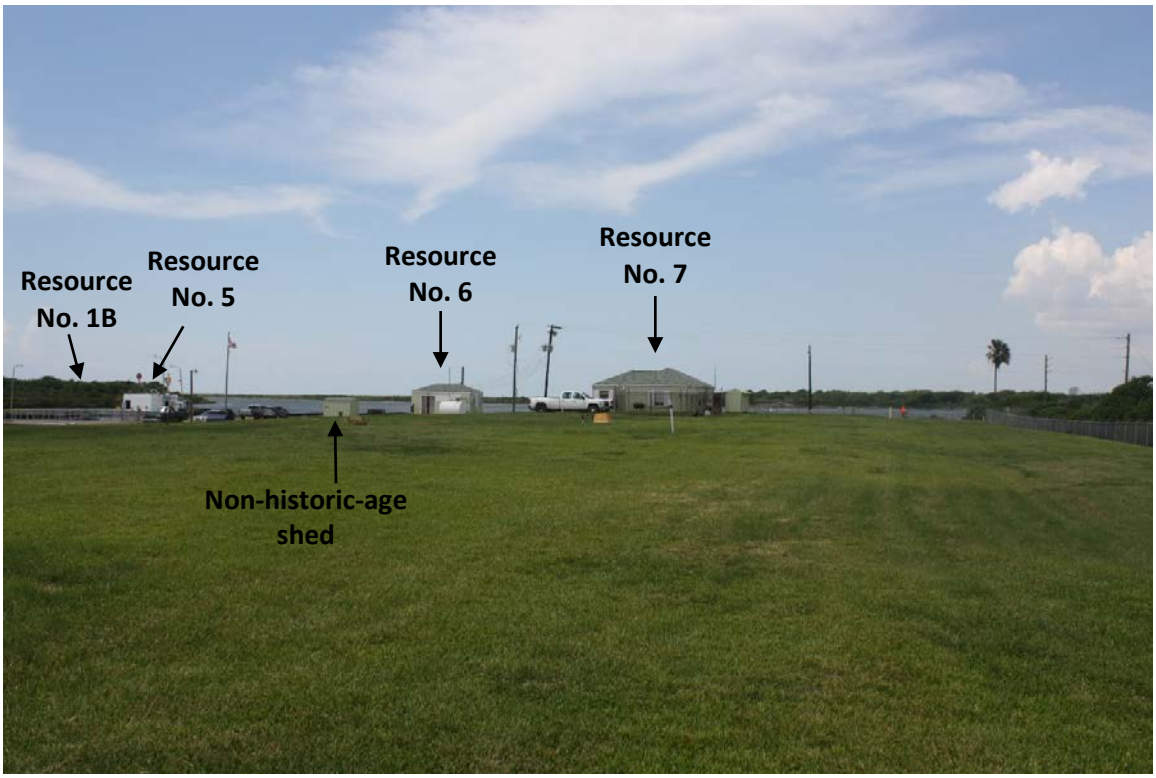
Brazos River Floodgates – East Floodgates

D9: View of east floodgate access road from SH 36, facing southwest. Access road is 3.4 miles in length

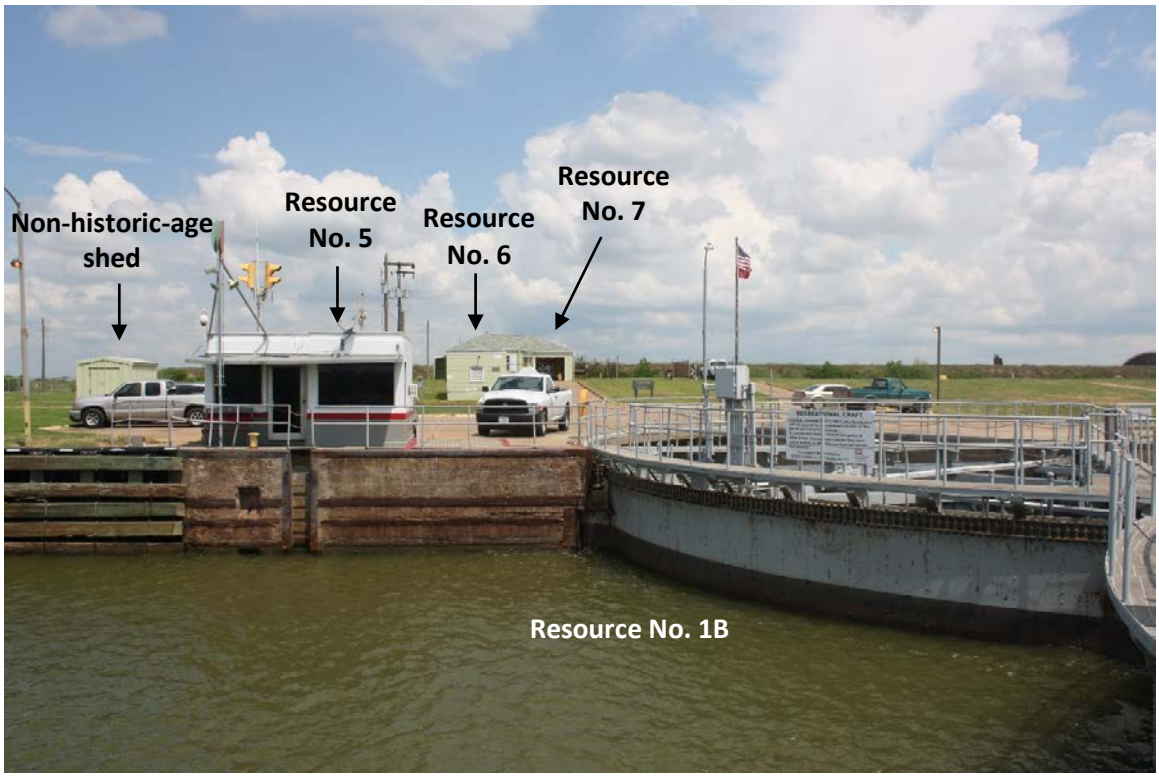
D10: View toward east floodgate entrance gate, facing southeast



D11: View showing distance to west floodgate, facing east toward east floodgate entrance



D12: View of east floodgate site, facing southwest. Four houses used to be located in the grassy area in the foreground.



D13: View showing relationship between east floodgate, control house, power house, and office building, facing northwest from south sector gate. Grassy area to the left used to have four residences.

D14: Photo dated 1969 showing the original four residences that are no longer extant near the west floodgates, facing northwest from the south sector gate. Image courtesy of USACE.

D15: View from office building (Resource No. 7) showing internal access road, facing northeast toward pumphouse and boat house. Driveway and grassy area to the left used to have residences.

D16: View of barge traveling west through the east floodgate, facing south

Colorado River Locks – West Locks

D17: View of internal access road from 1944 control house (Resource No. 12), facing southwest

D18: View from 1944 control house (Resource No. 12) toward Colorado River and east locks, facing east

D19: View from 1951 control house toward 1944 control house (Resource Nos. 11 and 12), facing northwest

D20: View from 1951 control house toward south bank (historically devoid of structures aside from gates) and lock chamber, facing northeast

D21: Barge traveling east through west lock, facing southwest toward 1951 control house (Resource No. 11)

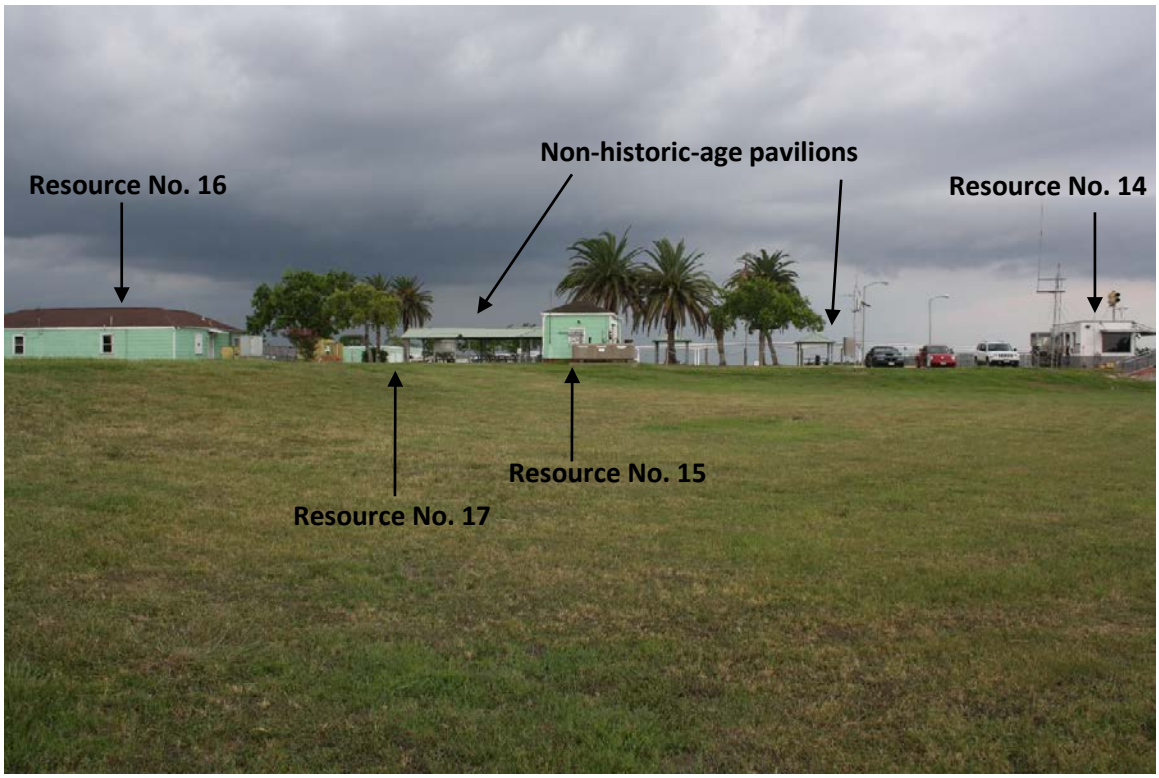
D22: Barge traveling east through west lock, facing southwest from 1944 control house (Resource No. 12)

Colorado River Locks – East Locks

D23: View of levee (Resource No. 20) and west lock access road, facing southwest from Matagorda Ave

D24: View of west lock access road toward entrance, facing south.

D25: View of entrance to east locks, facing southeast



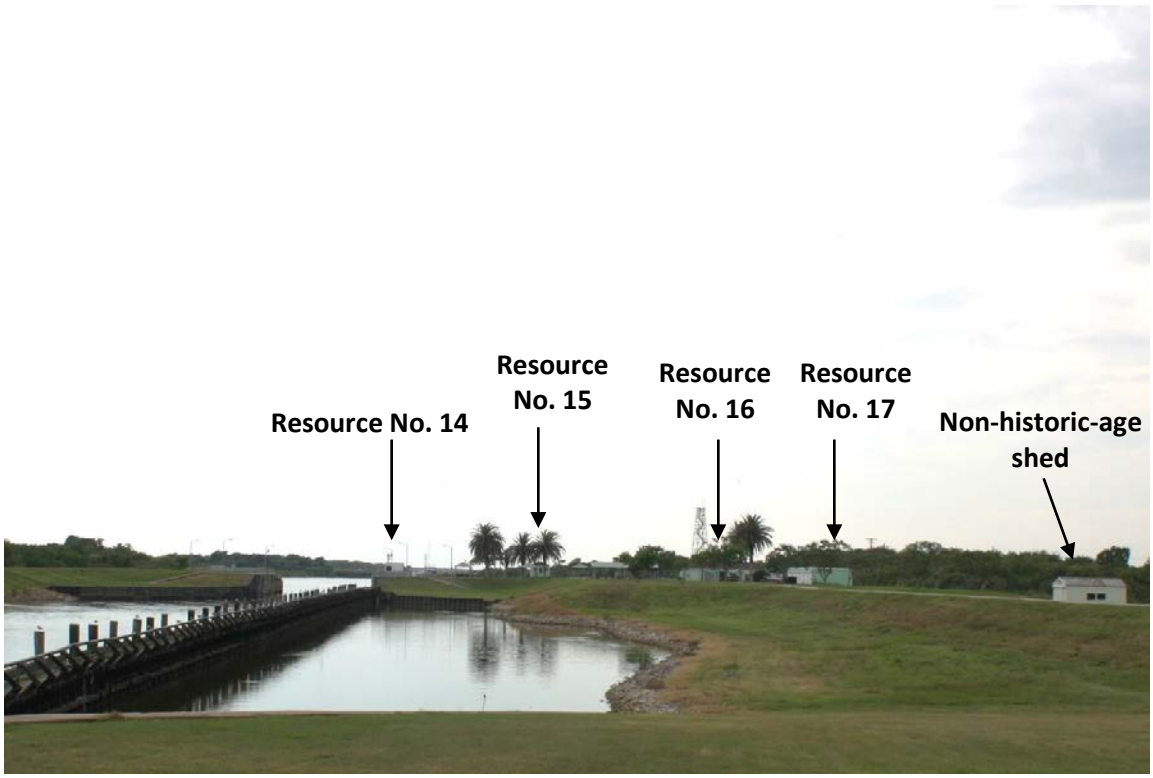
D26: View showing relationship between 1944 control house (Resource No. 14), power house (Resource No. 15), garage (Resource No. 17), and office building (Resource No. 16), facing northeast

D27: View of internal access road toward entrance gate, facing west. The power house (Resource No. 15) is on the left.

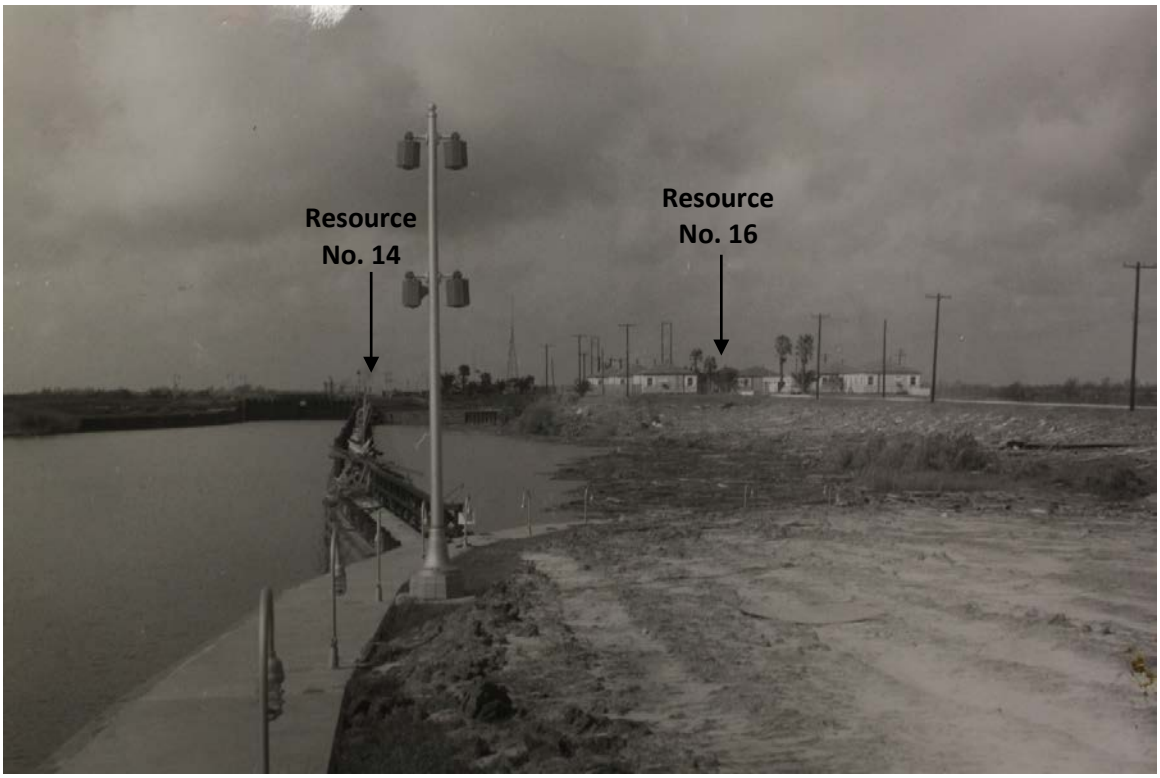
D28: View of non-historic-age pavilions just north of 1944 control house, facing southeast

D29: View of internal access road toward office and power and control houses (Resource Nos. 14-16, respectively), facing southeast. Grassy area on both sides of road originally had six total residences.

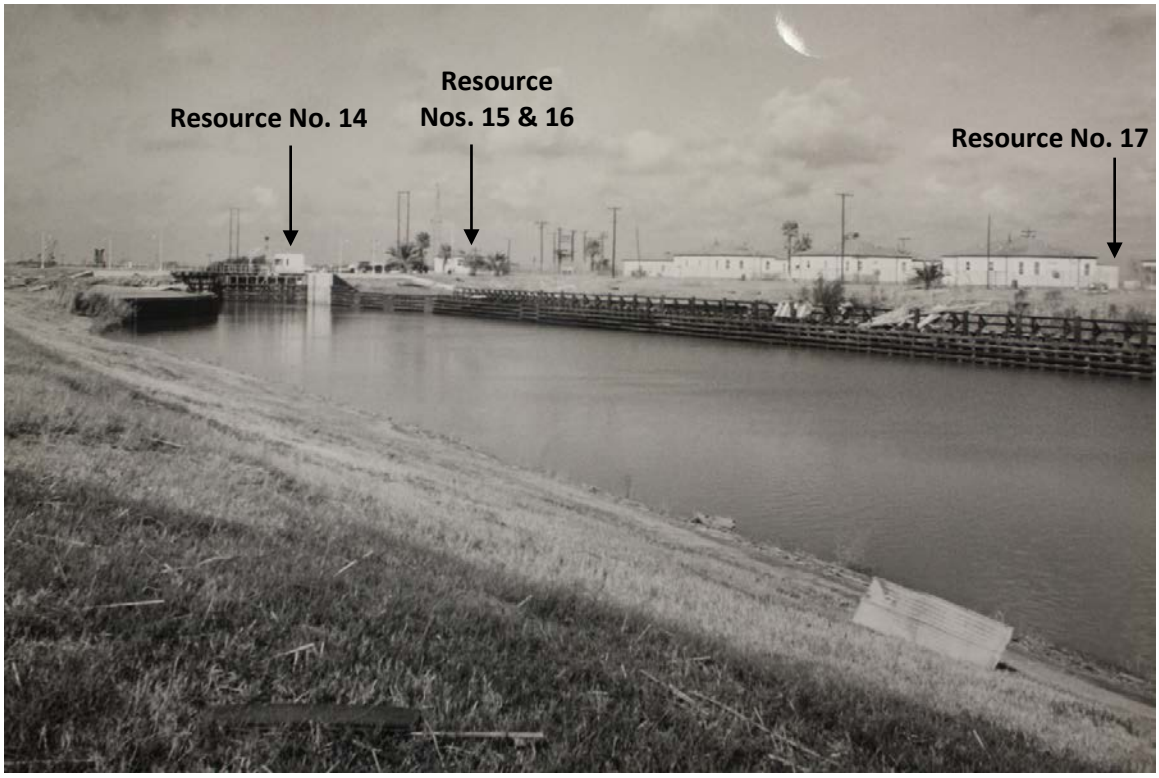
D30: View of east lock internal access road toward boat house (Resource No. 19) and FM 2031 bridge in the background, facing northeast. Both sides of the road originally had a total of six residences.



D31: View from 1951 control house (Resource No. 18) toward 1944 control house (Resource No. 14), facing southwest.



D32: Photo dated 1961 from the same location as above, showing the six no-longer extant residences. Image courtesy of USACE.



D33: Photo dated 1961 showing the no longer extant residences, facing west from the south bank of the lock chamber. Image courtesy of USACE.

D34: View from 1951 control house (Resource No. 18) toward boat house (Resource No. 19), facing northeast. Non-historic-age condominiums in background are on a separate legal parcel than the locks.

D35: View of barge traveling east through east locks, facing southwest

D36: View of barge traveling east through east locks and lock chamber, facing east