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Introduction

This report is submitted by the Texas Department of Transportation (TxDOT) on behalf of the Texas Transportation Commission to the 85th Texas Legislature as required by Chapter 51 of the Transportation Code. Its purpose is to summarize the state’s non-federal sponsorship efforts to maintain the Gulf Intracoastal Waterway in Texas (GIWW-T) and identify challenges as well as recommendations to improve the waterway. The GIWW-T is an essential component of the state’s and nation’s transportation network and is an integral part of the state’s economic vitality. In preparing the Texas Freight Mobility Plan, TxDOT found that “the state must continue to focus on mobility, safety, and preservation of their multimodal transportation corridors to ensure this economic prosperity continues into the future.”(1)

The planning and execution of maintenance, major rehabilitation, and new construction activities is performed by the U.S. Army Corps of Engineers (Corps). The maintenance of the GIWW-T is a federal responsibility and is paid for 100 percent by the federal government. Additionally, the federal government pays for 50 percent of the cost of new facilities or the major rehabilitation of existing facilities. This is matched by appropriations from the Inland Waterways Trust Fund, which consists of taxes paid by the barge companies on fuel consumed in towing activities on the inland waterways and the GIWW. In the case of the GIWW-T, a non-federal sponsor is required.
The non-federal sponsor must provide adequate placement areas for dredged material and perform related coordinating functions with state agencies. TxDOT fulfills the non-federal sponsorship requirements for the waterway in Texas as described in Chapter 51 of the Transportation Code.

The GIWW is a 1,100–mile-long, shallow-draft, man-made, protected waterway that connects ports along the Gulf of Mexico from St. Marks, Florida, to Brownsville, Texas (Figure 1). The GIWW is the nation’s third busiest inland waterway, with the Texas portion handling 63 percent of its traffic.

In Texas, the GIWW consists of 406 miles of waterway in Texas (Figure 2). The main channel is 379 miles long and spans from the Sabine River to Brownsville. In 2014, over 86 million short tons of cargo were moved on the Texas portion of the waterway. The majority of this cargo—77.8 million short tons or 91 percent—is classified as petroleum- and chemical-related products. With the state's deep- and shallow-draft waterways, Texas ranked first in the nation for foreign waterborne tonnage and second in total tonnage moved in the United States in 2014.(2)

Cargo carried on the GIWW reduces congestion on the state's highway and rail systems, decreasing maintenance costs and extending their life. In addition, water transportation is the most fuel-efficient mode of transportation, producing the smallest amount of air pollutants per ton of cargo carried.
Figure 1. 1,100-mile GIWW.

Figure 2. Texas GIWW.
CHAPTER 1
Benefits Assessment

The development of the GIWW requires the concerted efforts of federal, state, and local interests. Planning associated with this waterway began over 111 years ago and continues today. One of the initial functions of the GIWW was to provide protected inland transportation of goods and troops during World War II. It has since evolved into a multipurpose waterway used by commercial and recreational interests. Commercial uses include:

- Moving domestic and international cargo.
- Harvesting fish and shellfish.
- Servicing the oil and gas industry.

Recreational uses include:

- Fishing.
- Skiing.
- Sightseeing (local recreation).
- Traveling long distances in the protected water transportation routes along the coast.

The GIWW is an essential component of the state’s and nation’s transportation network. It is part of the Marine Highway System, which consists of navigable waterways designated by the U.S. Maritime Administration. To receive the Marine Highway designation, the routes must demonstrate the ability to provide additional capacity to relieve congested landside routes serving freight and passenger movements. The system currently includes 22 all-water Marine Highway routes that serve as extensions of the surface transportation system and promote short sea transportation. Increasing the use of marine transportation on the commercially navigable waterways can offer relief to landside corridors (e.g., highways) suffering from traffic congestion, excessive air emissions, or other environmental concerns and challenges.

In June 2016, the GIWW-T was designated as the Marine Highway 69 (M-69) corridor. The M-69 connects commercial navigation channels, ports, and harbors within the state. Thirteen (13) shallow-draft ports and 11 deep-water ports are linked together by M-69. Prior to the M-69 designation, this route was a part of the M-10 Corridor, encompassing the entire GIWW. M-69 intersects with the M-146 Connector in Galveston Bay and joins with the M-10 Corridor in Port Arthur, which extends and intersects with the M-49 Corridor in Morgan City, Louisiana; the M-55 Corridor in New Orleans, Louisiana; and the M-65 Corridor in Mobile, Alabama. A map of the Marine Highway System along the Gulf Coast is provided in Figure 3.
The M-69 Corridor designation makes GIWW-T-related projects eligible for federal funding with the aim of increasing waterborne transportation and simultaneously improving mobility on I-69 and other highways along the Texas Gulf Coast by reducing truck traffic. Texas will still be a part of the larger M-10 designation for projects that address overarching challenges along the entire GIWW.

As shown in Figure 4, the GIWW provides important direct and indirect benefits to the state, such as:

- In 2014, 86 million tons of goods were moved on the Texas GIWW via approximately 59,000 one-way barge movements.(2)
- In 2014, the GIWW enabled commercial fishermen to catch an estimated 10.3 million pounds of shrimp, oysters, crabs, and finfish with a wholesale value of $30.4 million from Texas bays and estuaries.(3)
- Barge transportation reduces congestion for the transportation system. The capacity of one dry cargo barge is equivalent to 16 railcars or 70 trucks. A typical tank barge is the equivalent of 46 railcars or 144 trucks.(4)
- Barge transportation produces fewer air emissions than similar movements by truck or rail. For carbon dioxide, barges produce 78 percent of what railroads produce and only 10 percent of what trucks produce to move the same amount of cargo the same distance. For particulate matter, the percentages are 78 percent and 13 percent, respectively.(4)
- Barge transportation is the most fuel-efficient mode of transportation. One gallon of fuel moves one ton of cargo 647 miles on the inland waterways, 477 miles on rail, and 145 miles by truck.(5)
- The movement of goods by barge is the safest mode of transportation. Between 2001 and 2014, the spill rate for barges was approximately one-third of the rate for railroads and trucks.(5)
CHAPTER 2

Current Initiatives

During the last biennium, TxDOT participated in various activities to support the waterway. These include initiation of federal and state studies and research projects and performance of waterway projects.

**Brazos River Floodgates and Colorado River Locks Study**

The Brazos River Floodgates (BRFG), located on the GIWW-T at the intersection with the Brazos River in Brazoria County, and the Colorado River Locks (CRL), located on the GIWW-T at the intersection with the Colorado River in Matagorda County, represent the greatest maritime transportation challenge in terms of safety and efficiency anywhere on the entire GIWW (see Figure 5). With an average of 38 tows passing through these facilities each day, a need exists to reduce navigation impacts and costly waterborne traffic delays resulting from the aging infrastructure and the inadequate channel dimensions for modern vessels. The Corps typically spends $7 million to $8 million every two years to operate and maintain the locks and floodgates.
TxDOT, with its commitment to addressing navigation issues on the waterways, is partnering with the Galveston District of the Corps to conduct a feasibility study for the BRFG and the CRL. The study will determine solutions to improve safety and navigation efficiency on the GIWW-T at these two locations. The study will identify and evaluate possible structural and navigation alternatives to reduce traffic accidents and navigation delays. The Corps will lead this study with TxDOT providing the engineering, environmental, and economic analyses for the BRFG. The assessments of the BRFG and the CRL will be conducted as separate elements with the results combined into one integrated Feasibility Report and Environmental Impact Statement.

The report will be presented to the Assistant Secretary for the Army (ASA), Civil Works for final approval. Upon approval by the ASA, both structures will be eligible for federal construction funding to address the navigational difficulties and safety issues concerning the structures.

The study is expected to take approximately three years before being sent to the ASA for approval.
Maintenance Dredging

Over the last two fiscal years (FY 2015 and 2016), an estimated $31.9 million in federal funds was expended by the Corps in 100 percent federally contracted and funded projects to maintain the navigability of the GIWW-T main channel. During this time, approximately 7.7 million cubic yards of sediment were dredged in five different reaches of the GIWW-T. Figure 6 depicts the relative volumes that were removed and their locations along the waterway.
Management of Placement Areas
When dredging occurs on the GIWW-T, the dredged material is deposited in placement areas (PAs). From 1998 to 2012, an average of 6.2 million cubic yards was dredged each year from the GIWW-T’s main channel. Most of the dredged material was placed in open-water bay disposal sites and inland confined disposal sites. As environmental regulations have become more stringent and special interest groups more vocal, obtaining new open-water disposal sites has become more difficult. In some cases, open-water disposal sites are situated in much deeper waters located farther offshore. Moving the dredged material the additional distance increases costs.

TxDOT was designated as the non-federal sponsor of the GIWW in the 1975 Texas Coastal Waterway Act. In 1983, Texas and the federal government signed a sponsorship resolution detailing the non-federal sponsor’s duties. One of the primary duties of the non-federal sponsor is the provision of lands, easements, rights of way, relocations, and necessary disposal areas for maintenance and operation of the GIWW. Thus, the Department is required to provide the real estate for placement areas that will accommodate the ongoing needs of the Corps’ dredging program.

As part of a 50 year GIWW dredged material management plan, there are over 200 designated disposal areas along the GIWW-T. These sites were established as the least-costly, environmentally acceptable, long-term dredged material placement option for maintenance of the GIWW-T. In addition to these sites, numerous areas exist where the beneficial use of dredged material can occur.

Of the 218 main channel PAs currently available for the Corps’ use, two—PA35 and PA86—have a remaining life of 24 and 12 years, respectively. All but five of the remaining active areas have an estimated remaining life of 40 years or more. TxDOT continually works with the Corps to address capacity issues on existing placement areas.

Regional Sediment Management
One of the initiatives of TxDOT’s Maritime Division (MRD) is to develop, promote, and conduct a regional sediment management (RSM) program. Projects that develop marshes or place dredged material on eroding gulf beaches can be highly desirable to the state. Proper management of sediments can reduce the need for dredging (thereby reducing the need for placement areas), help maintain channel dimensions, restore ecosystems, and improve water quality.
One form of RSM is the beneficial use of dredge material (BUDM), which MRD is actively promoting. BUDM utilizes dredge material to revitalize sediment-starved environments such as marshes, beaches, and eroding shorelines in lieu of placing the material in disposal areas that have a finite capacity. BUDM restores degraded coastal environments as well as extends the life of existing placement areas. Inconsistent federal and state environmental coordination, a lack of incentives, and the high cost of developing projects hinder the development of BUDM projects.

As the non-federal sponsor of the GIWW, TxDOT is legislatively required to provide placement areas for disposal of dredged material. With the cost of coastal property at a premium, MRD is looking for opportunities to use this material in a beneficial manner rather than dispose of it. One way is by partnering with other agencies or non-governmental organizations to conduct marsh restoration and/or beach nourishment projects.

TxDOT has encouraged the use of dredge material to help restore and nourish natural areas around the state by repurposing it rather than simply dumping it in designated placement areas.

Figure 7. Pierce Marsh Restoration Project.
A few examples of BUDM projects are worth noting.

**Pierce Marsh Restoration Project**
When the Corps conducted maintenance dredging of a 25-mile section of the GIWW-T along West Galveston Bay in the spring of 2016, a portion of that material was pumped to Pierce Marsh (see Figure 7) to create 87 acres of new wetland habitat. Instead of depositing 130,000 cubic yards of material into dredge material Placement Areas 62 and 63, it was used to increase the overall size and vitality of Pierce Marsh.

For this project, the Galveston Bay Foundation holds the permit for marsh creation at Pierce Marsh. The National Resource Damage Assessment Trustees administered by the Texas General Land Office provided the additional funding necessary to pump the material to the marsh and develop the areas for placement.(7) Additionally, Texas Parks and Wildlife Department, the U.S. Fish and Wildlife Service, and National Marine Fisheries were all part of the multiagency project development team that brought this innovative solution to life.

**Beach Nourishment at Caplan Beach**
During the Corps' maintenance dredging of the GIWW-T at Rollover Pass, sandy dredged material was utilized to renourish the beach at Caplan, directly west of Rollover Pass on Bolivar Peninsula. Over 60,000 cubic yards of sand were placed on Caplan Beach, helping to restore over 4,000 feet of beach.

**Texas Master Plan for Beneficial Use of Dredged Material**
MRD has been working with Ducks Unlimited to develop a process for enhanced utilization of dredged material and together they submitted a RESTORE Act grant application to implement the plan. The RESTORE Act program allocates funds from a proposed settlement with British Petroleum (BP) of up to $8.8 billion for natural resource injuries stemming from the Deepwater Horizon spill, including $238 million to be allocated for Texas restoration efforts. This project will identify uses for dredge material and allow entities conducting coastal restoration projects access to a database and a decision-support tool to evaluate alternative uses of dredged material.

**Caney Creek Bridge Replacement**
TxDOT is actively addressing one of the major safety concerns expressed by users of the GIWW-T—the replacement of the FM 457 swing bridge in Sargent known as the Sargent Swing Bridge or the Caney Creek Bridge (see Figure 8). It is often cited by operators as the most serious obstacle after the Brazos River Floodgates. According to the U.S. Coast Guard's Division 8 Bridge Program Office, the bridge is struck approximately once a month because of the inadequate space between the bridge columns in the river and the high level of development in the area, which prevents barges from
being able to “pull over” and wait out inclement weather or difficult situations. TxDOT has an active project to replace the swing bridge with a concrete bridge that will span the channel to provide access for residents on the south side of the waterway.

The project is in the final stages of design, which include finalizing the environmental and design processes. TxDOT has held citizen workshops and public meetings to get feedback from the community on the design and environmental concerns. The project has received National Environmental Policy Act clearance and was issued a Finding of No Significant Impact (FONSI) on the environment. The U.S. Coast Guard Bridge Permit Application and the Corps Section 10/404 permit are also in the final stages of review. Bridge construction is anticipated to begin in Summer 2017.

**Galveston Causeway Debris Removal**

TxDOT, in partnership with the Corps, is conducting underwater demolition and debris removal of remnant navigation-span piers, fenders, and pilings from an 800-foot length of the GIWW-T between the Galveston Causeway and Railroad Bridge in Galveston County, Texas (see Figure 9).

The previous causeway and railroad bridge had navigation spans with fender systems that restricted the width to 100 feet, though the authorized width of the GIWW is 125 feet. The new Causeway and Railroad Bridge each have navigation spans of approximately 350 feet. The wider navigation spans allow for restoration of the full, authorized 125-foot width once the remaining structures and debris are cleared from the area.

Underwater structures to be removed include concrete, steel, wood, and various other debris. Construction started in July 2016 and is expected to be completed within six months. The debris-removal operations will require the temporary closure of the GIWW in this area. The U.S. Coast Guard Captain of the Port-Sector Houston-Galveston has established a safety zone of 500 feet on each side of the Galveston Causeway Railroad Bascule Span Bridge across the GIWW. This Safety Zone is necessary to protect vessels, infrastructure, and the environment from hazards posed by debris-removal operations.
Research and Studies

University Research

In addition to the federal studies, TxDOT’s research program has initiated several marine transportation-related studies. This program, plus interagency agreements, allowed TxDOT to participate in studies that address various needs of the GIWW-T. Table 1 shows research studies funded by TxDOT that have been active during the past two years.

Table 1. TxDOT-Sponsored Research.

<table>
<thead>
<tr>
<th>Program</th>
<th>Study</th>
<th>Researcher(s)</th>
</tr>
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<tbody>
<tr>
<td>State Planning Research</td>
<td>Gulf Intracoastal Waterway Capacity Study</td>
<td>University of North Texas (UNT); Center for Transportation Research (CTR)</td>
</tr>
<tr>
<td>State Planning Research</td>
<td>Impact to Texas’ Multi-Modal Freight Networks: Panama Canal and South American Markets</td>
<td>CTR</td>
</tr>
<tr>
<td>State Planning Research</td>
<td>A Process for Designating and Managing Overweight Truck Routes in Coastal Port Regions</td>
<td>CTR; The University of Texas at San Antonio (UTSA)</td>
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<tr>
<td>Interagency Contract</td>
<td>Development of Port Facility Economic Investment Tool</td>
<td>Texas A&amp;M Transportation Institute (TTI)</td>
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GIWW Capacity Study

It is in the long-term interest of TxDOT to encourage greater use of the GIWW-T, particularly if cargoes being transported on the state highway system can be diverted to the waterways. However, like all transportation infrastructure, the GIWW-T is at risk of reaching capacity constraints that impede operations. Through TxDOT’s Research and Technology Implementation Office, TxDOT’s Maritime Division is sponsoring a GIWW Capacity Study. The specific research objectives are:

• Identify existing operational and infrastructure inefficiencies and capacity constraints along the GIWW-T.
• Develop a systematic, operational, data-driven approach to understanding vessel movements.
• Develop a database that summarizes historic vessel movements.
• Synthesize background research and summarize existing data on vessel effects on the waterway.
• Summarize current and future vessel traffic along the GIWW-T, its tributary channels, and intersecting ship channels.
• Identify specific triggers or milestones that would suggest needed improvements to the GIWW-T’s operations or its infrastructure.

The scheduled completion date for the study is February 28, 2017.

Corps Studies

The Corps has initiated several studies to investigate navigational and dredging issues along the GIWW-T. These studies look at the physical and economic aspects of specific water-resource projects. TxDOT acts as the non-federal sponsor for the studies involving the GIWW-T. Figure 10 illustrates the location of the various Corps studies, and a summary of each project is provided in the following paragraphs.
Matagorda Bay Reroute Study
The Corps is conducting this study under the authority of Section 201 of the Flood Control Act of 1965. The reach of the GIWW-T across Matagorda Bay has been a concern for the waterway industry and the Corps for some time. The proximity of the GIWW-T to Pass Cavallo and the construction of the deep-draft Matagorda Ship Channel have created a very difficult maintenance dredging and navigation situation. High shoaling rates, groundings, and dangerous crosscurrents plague this area. Numerous groundings have occurred, and vessels currently operate under reduced speeds to compensate for these difficulties. The selected plan will allow for continued use of the waterway while minimizing the potential for spills and collisions. The realigned channel will be in an area of reduced currents, thus allowing for greater maneuverability of barges and achieving transportation cost savings through the use of two-way traffic and reduced future maintenance dredging costs. The plan calls for beneficially using dredged material for:

- Construction of marshes at Palacios Point and near Port O’Connor.
- Nourishing Sundown Island, a National Audubon Society site.
- Nourishing the beach at Port O’Connor.

High Island to Brazos River Study
This is a study to provide a detailed management plan of dredged material for a 20-year time horizon from High Island to the Brazos River. The study is undergoing scope revision to delete some unfeasible alternatives. The schedule calls for the draft report to be completed in 2017.

High shoaling rates and dangerous crosscurrents have contributed to numerous groundings in Matagorda Bay, forcing vessels to operate under reduced speeds. The Corps’ dredging plan allows continued use of the waterway while minimizing the potential for spills and collisions.
CHAPTER 3
Additional Challenges

Dimensions of the Waterway

The waterway, in its current form, is almost 70 years old. During this time, the size of individual barges and towboats, the width and length of barges lashed together and pushed as a unit (tows), and the volume of traffic have all steadily increased. The authorized base width of the navigable channel is 125 feet at a depth of 12 feet. Regulations restrict the width of tows to 55 feet, but oversize tow permits are routinely granted for tows as wide as 108 feet, particularly along the upper Texas coast.

Users of the GIWW have expressed concern about the dimensions of the waterway in terms of its authorized width and depth and the maintenance of the channel. When tows must pass each other, they must use the waters outside the authorized channel. In some instances, one tow must hold on the bank of the channel to provide enough space for the other vessels to pass. Given the extensive use of the waterway by fishermen and recreational users, constant activity occurs outside the authorized channel. These factors have led towboat operators, shippers, and transportation officials to conclude that the 1949 dimensions of the GIWW and its associated structures do not adequately meet the needs of barge transportation today.

Furthermore, the Corps has not received adequate operations and maintenance funding to maintain the waterway as designed. Although there has been a rapid escalation in dredging costs over the last few decades, the Corps’ budget has not increased to offset these costs, and projects are being deferred or downsized. As a result, the Corps has not been able to maintain the entire waterway at its authorized depth.

Commercial navigation is transporting smaller amounts of commodities per barge in response to a shallower waterway, resulting in higher transportation costs. It is estimated that as of 2013—the most recent analysis at this time—the inability to load to capacity was costing operators conservatively $59 million per year. This does not account for wear and tear on equipment or the inefficient use of barges necessitated by this condition.

The age and inefficiencies of the Brazos River Floodgates and the Colorado River Locks only compound the problem. Continued degradation of the state’s water transportation infrastructure and associated increases in transportation costs pose an economic threat to businesses that depend on water transportation, such as the chemical and petrochemical industries.
Mooring Buoys and Facilities

Mooring Facilities

Barge navigation is hampered by a shortage of locations for mooring facilities, which are a set of buoys outside the navigable channel to which a barge can be tied or moored temporarily when unable to proceed. These structures are valuable throughout the waterway, especially during high wind and foggy conditions, and in areas where locks or heavy shoreline development dictate one-way traffic flow. Additional navigational concerns are created by the lack of mooring facilities for barges waiting to approach terminals located along ship channels. Operators often push their tows into the banks of channels for extended periods of time. Because deep-draft vessels and barge tows often carry hazardous materials, any collision could create a serious threat to human safety and the natural environment. Key areas of concern are the San Jacinto mud flats along the Houston Ship Channel and the Freeport Ship Channel.

The Corps has performed a detailed analysis of needs. In March 2016, the Corps released the Revised Draft Report with Integrated Environmental Assessment for the Gulf Intracoastal Waterway Mooring Basins Modifications Study. This study was initiated to address the problem of the inadequate number of mooring buoys within the studied mooring basins. The barge industry made a request for more mooring buoys in the existing mooring locations on the GIWW-T due to the increase in barge traffic. The study recognizes that an increase in barge traffic and a lack of mooring buoys for the barges to tie off to increases the probability of a collision, wastes fuel, and increases the possibility of damaging the environment.

This study formulated, evaluated, and compared additional buoy modifications to mooring locations at five locations along the GIWW-T—Port Arthur, Port Bolivar, Pelican Island, the Brazos River Floodgates East, and the Brazos River Floodgates West. It provided a detailed assessment evaluating the capacity of the existing mooring locations and the possibility of expanding their capacities. During this study, alternatives were developed for each of the mooring locations. It was determined that improvements to all these GIWW-T mooring locations are feasible, and the study recommended further design and construction per Galveston District’s operation and maintenance budget.

The tentatively selected plan in this report proposes additional buoys in each location to accommodate the increased barge traffic on the GIWW.

- Port Arthur: 11 additional buoys.
- Port Bolivar: 14 additional buoys.
- Pelican Island: 7 additional buoys.
- Brazos River Floodgates East: 10 additional buoys.
- Brazos River Floodgates West: 10 additional buoys.

Inadequate mooring buoys—combined with the increase in barge traffic—increases the opportunity of a collision, wastes fuel, and increases the possibility of damaging the environment.
The fully funded project cost for all the mooring locations is $4,586,000 and would be 100 percent federally funded. The Corps plans to complete the work in FY 2019.

**Damage to Navigational Aids and Mooring Buoys**

Staff from the U.S. Coast Guard and the Corps have reported an ongoing issue with barge operators damaging navigational and mooring buoys in certain areas. Corps representatives have stated that this damage totals approximately $2 million per year, which is funding that could potentially go to needed dredging projects. Better accountability is needed from barge operators who damage buoys and do not report and reimburse the government for this damage.

**Encroachment**

Our state’s rapidly growing population has spurred the development of private property along navigable waterways (see Figure 11). The number of marinas, residential subdivisions, docks, piers, and other shoreline developments has dramatically increased throughout the coastal regions of the state. As more projects are developed and navigation channels become more restricted and congested, safety issues arise. The benefits of the GIWW will be lost unless navigational impacts are considered and minimized in conjunction with future development.

In August 2010, TxDOT published a report that described these issues and presented recommendations to address them.\(^8\) Many of the concerns and recommendations listed in the report were addressed in a new permitting procedure instituted by the Corps in October 2013. Most importantly, the new procedure includes setback requirements for permitted structures.
CHAPTER 4

Recommendations

In compliance with Texas Transportation Code Section 51.007, to support the state’s non-federal sponsorship of the GIWW-T and facilitate planning, maintenance, preservation, research and improvement of the waterway, the Texas Transportation Commission recommends the Texas Legislature consider the following actions:

• Continue appropriations in support of the GIWW maintenance strategy.
  — Appropriations for support of the GIWW will be used to fulfill the State’s duties as the non-federal sponsor of the GIWW-T, in accordance with Chapter 51 of the Transportation Code.

• Support additional federal funding for the U.S. Army Corps of Engineers Operations and Maintenance budget for Texas to maintain the authorized dimensions of the GIWW-T.
  — The Corps has not received adequate operations and maintenance funding to maintain the waterway as designed. On average, the Corps is appropriated $27,717,348 each year for operations and maintenance of the GIWW-T, but the average annual need is approximately $56,699,000. As a result, the Corps has not been able to maintain the entire waterway at its authorized depth.
In fulfillment of its duties as the non-federal sponsor of the GIWW-T, the Commission directs TxDOT staff to consider the following actions:

• Continue working with the Corps to develop an economic case to provide justification for additional funding to maintain the waterway to its authorized dimensions.
  
  — TxDOT is able to assist the Corps by providing data gathered through research and study efforts. The Corps is limited in their ability to conduct these efforts but can use information provided by TxDOT to seek full funding for operations and maintenance of the GIWW-T from Congress.

• Fully integrate the newly designated M-69 into the Texas transportation system by supporting efforts to shift cargo transport from Texas Gulf Coast roadways to the GIWW-T to help relieve congestion, especially freight congestion in urban and energy-sector areas.
  
  — New or expanded service moving freight or passengers between ports via the GIWW-T can provide an alternative to coastal highways, decreasing wear and tear and extending the life of these roadways. TxDOT should work with Texas ports to develop these opportunities and seek project designation from the U.S. Maritime Administration for those that would be eligible for federal funding from the Marine Highways Program.
References and Notes


3. Texas Parks and Wildlife, Coastal Fisheries Division.


7. The Corps will only pay for the most efficient disposal method that meets project, legislative, and regulatory requirements. Beneficial use projects typically go beyond such measures and require additional funding from non-federal sources.
