REQUEST FOR PROPOSAL (RFP 04-16)
8TH ST. EAST TO 14TH ST. EAST
GROIN REHABILITATION PROJECT
FOLLY BEACH, SC
PROFESSIONAL ENGINEERING, DESIGN,
PERMITTING, AND CONSTRUCTION
OVERSIGHT SERVICES

1. GENERAL

The City of Folly Beach (“City”) is soliciting submittals from qualified firms to provide engineering, design, permitting, and construction oversight services for the specific rehabilitation and sand tightening of nine groins located between 8th St. East and 14th St. East in the City.

The purpose of this Request for Proposal (“RFP”) is to solicit proposals from various engineering firms, conduct a fair and extensive evaluation based on criteria listed herein, and select the candidate who can best meet the needs of the City.

2. SCOPE OF WORK

Project Description: This is a three-phase project to provide engineering services to rehabilitate and increase the sand trapping capability of 9 existing groins located between 8th St. East and 14th St. East.

   Phase I: Preliminary state permit application submittal,
   Phase II: Engineering, design, and final permitting, and
   Phase III: Option - Construction Plans, Specs development and Construction Oversight.

Consultant will use existing data and studies to the extent possible to avoid duplication of work. Surveys of the existing conditions will be necessary to provide detailed final permitting and construction drawings. Based on a pre-application meeting with OCRM, a downdrift impacts analysis involving numerical modeling may be required for Phase II.

Timeframe: The timeframe for these engineering services is the immediate completion of Phase I within 60 days of award. The completion of Phase II shall be no later than October 2017. The optional Phase III will be dependent on the timing of the next federal renourishment of Folly Beach, tentatively scheduled for FY18, but subject to an expedited timeline due to damages from Hurricane Matthew. Construction of the groin rehabilitation project will follow the next federal renourishment.
Pre-design planning already completed: The specific groin locations, as well as existing data and photos, are detailed in Attachment A. This document also details the desired product, which are impermeable, low-profile groins; not capped sheetpile groins that were rehabilitated in 1993. The footprint of the structures will not change, rather the elevation may be increased and the structures should be sand tightened as described in Appendix A.

See attached document: Attachment A – Groin Rehabilitation: Field Conditions and Available Data – Supplement to RFP.

3. **OTHER REQUIREMENTS OF THE CONTRACTOR**

Firms providing responses shall be licensed and responsible for complying with South Carolina laws, regulations, and local ordinances.

If contract is awarded, contractor must be prepared to provide and agree to the following, at his or her own expense, prior to beginning work and at all times during performance of services.

a. Professional Liability Insurance in the amount of $500,000 per claim. In no event shall the deductible on any such policy of insurance exceed $25,000.

b. Commercial General Liability Insurance on an occurrence basis in an amount equal to $1,000,000 for each occurrence and must include the following coverages: (i) completed operations coverage, (ii) blanket contractual coverage, including both oral and written contracts, (iii) personal injury coverage.

c. Workers' Compensation Insurance in the amounts as follows:
   1. Bodily Injury by accident, $500,000 each accident
   2. Bodily Injury by disease, $500,000 policy limit
   3. Bodily Injury by disease, $500,000 each employee

d. Maintenance of state and local licenses necessary to operate a business in the City of Folly Beach. These costs are not to be paid in whole or in part by the City.

e. Indemnify and hold the City of Folly Beach harmless for any and all claims arising out of its performance of its duties under this contract.

f. Comply with all applicable federal, state and local laws, ordinances and regulations.

4. **PROPOSAL PROCESS**

a. Bid packets can be picked up at the Municipal Clerk’s Office, 2nd Floor, 21 Center Street or can be requested from Colleen Jolley by phone at 843-513-1836 or email at cjolley@cityoffollybeach.com.

b. There will be an optional on-site visit Friday, November 18 at 10 a.m. Any interested contractor should attend as we will be unable to schedule individual visits.
c. Each company shall submit the following documents as applicable to be considered a responsive bidder:

1. Consulting firm’s background, office locations, size, capabilities.
2. Project experience with designing and permitting groin field rehabilitation projects in South Carolina in the recent past. Include a brief project description, an example design cross-section (product), initial and final project budget, dates that phases were completed, principal engineer and/or project manager in charge of project, and client contact information to serve as a reference.
3. A statement describing why this firm is most qualified to perform this work. Demonstrate the firm’s qualifications, competence and capacity.
4. Project timeline
5. Detailed cost proposal in three phases. Phase I: Preliminary permit application submittal, Phase II: Engineering, design, and final permitting, and Phase III: Option - Construction Plans and Specs development and Construction Oversight. Include estimates of all direct and indirect costs. Include cost estimates for surveys, permits, etc. as required by the project. Include a fee schedule including hourly rates for all personnel, subcontractors, and reimbursables. Subcontractors must be explicitly listed.
6. Oath of Non-Collusion (form in bid packet) signed by a principal of the firm or an officer authorized to bind the corporation.
7. Provide current copy of IRS Form W9.
8. Indicate and list any pending legal actions.

The proposal shall be no more than 20 pages (or 10 2-sided pages), 8 ½ x 11” size. Detailed resumes and supporting documentation for the detailed cost proposal may be provided as separate Appendices, not to exceed 15 pages each.

d. All sealed bids must be received in the Office of the Municipal Clerk no later than 2:00 p.m., December 1, 2016. Sealed proposals may be hand-delivered to 21 Center Street, Colleen Jolley, 2nd Floor, or mailed to P.O. Box 48, Folly Beach, SC 29439, Attn: Colleen Jolley, Municipal Clerk. Any proposals received after this date and time will be returned to the sender. All proposals must be signed by an official agent or representative of the company submitting the proposal. Proposals must be clearly labeled “RFP 04-16: 8th St. East to 14th St. East Groin Rehabilitation Project”.

e. The proposals will be opened at 2:05 p.m. on December 1, 2016. All submitters are invited to be present or send a representative. Under the provisions of the Freedom of Information Act, all proposals, excluding pending legal actions and financial statements, will become public information.

f. Evaluation of proposals will be conducted from December 1, 2016 through December 12, 2016. The selection decision for the winning bidder will be at the regularly scheduled Council meeting on December 13, 2016 and the selected contractor will be notified by December 15, 2016.
5. **PROPOSAL EVALUATION CRITERIA**

The primary intent with regards to the procurement of these services is to obtain what the City would consider to be the best package of product and service. This includes overall proposal suitability, a clear and organized proposal, price competitiveness, quality and timeliness of previous work performed. Bidders will further be evaluated on their experience, qualifications, and references.

The City of Folly Beach reserves the right to reject, in whole or in part, any bid submitted which, in the judgment of the City of Folly Beach, would not be in its best interest. The City also reserves the right to waive minor deficiencies or reject all proposals.

6. **CONTRACT**

a. The bidder selected will engage in a contractual agreement based on this proposal prior to any work being performed.

b. All contractual terms and conditions will be subject to review by the City of Folly Beach. This will include scope, budget, schedule, and other necessary items pertaining to the contract. This request does not commit the City to the award of a contract, or to pay any costs incurred in the preparation of a response to this request.

c. The City reserves the right to negotiate fees and terms prior to contract signing.

d. Any modifications to the contract shall be in writing and signed by both parties.
Vendor Name: __________________________

Non-Collusion Oath

Before me, the Undersigned, a Notary Public, for and in the County and State aforesaid, personally appeared __________________________and made oath that the Bidder herein, his agents, servants, and/or employees, to be best of his/her knowledge and belief, have not in any way colluded with anyone for and on behalf of the Bidder, or themselves, to obtain information that would give the Bidder an unfair advantage over others, nor have they colluded with anyone for and on behalf of the Bidder, or themselves, to gain any favoritism in the award of the Contract herein.

__________________________________________
Authorized Signature for Vendor

Sworn to and Subscribed before me

this____day of__________, 2016

__________________________________________
Notary Public in and for South Carolina
My Commission Expires:
FOLLY BEACH, SC – 2016
GROIN REHABILITATION

9/12/2016
Report to OCRM for Pre-Application Meeting

Prepared for: The City of Folly Beach
Prepared by: Elko Coastal Consulting, Inc.
Photo: Groin at 14th St. E., September 2016
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INTRODUCTION

The City of Folly Beach has historically relied on federal beach renourishment and erosion control structures to mitigate chronic erosion, the majority of which is attributable to the Charleston Harbor jetties\(^1\). Both the City and the federal government have made a 50-year commitment to beach nourishment through a 1992 Local Cooperation Agreement. The City intends to continue to honor this agreement and partner with the U.S. Army Corps of Engineers (USACE) on future renourishment projects. At the same time, the City desires to proactively manage the beach in an effort to mitigate severe erosion between federal renourishments, which often do not occur until erosion becomes an emergency situation.

During the initial 1993 federal nourishment project, 9 groins in the vicinity of the pier and Center Street were refurbished by the USACE (Appendix B). The 1993 groin rehabilitation has proven effective in stabilizing the beach and extending the life of the nourished sand along the central portion of the island\(^2\).

The overall **goal** of this rehabilitation project is to improve beach nourishment performance (decrease volume of sand needed for renourishment, retain higher unit volume between nourishment events) between 8\(^{th}\) St. E. and 14\(^{th}\) St. E. This section of beach is located adjacent and to the northeast of the 9 groins that were rehabilitated in 1993 in the vicinity of the pier. An objective of this project is to link this area of good performance with the region to the northeast, which is performing relatively poorly post-nourishment. To accomplish these goals and objectives, the City aims to increase the sand trapping capability of 9 additional groins located between 8\(^{th}\) St. E. and 14\(^{th}\) St. E. This will result in a section of beach along the central portion of the island with 18 continuous rehabilitated groins extending from southwest of the pier to 14\(^{th}\) St. E., just southwest of the Washout.

This report summarizes the desired product, the recent and historic beach performance, and the present conditions of the 9 groins between 8\(^{th}\) St. E. and 14\(^{th}\) St. E.

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\(^2\) City of Folly Beach Local Comprehensive Beach Management Plan, 2015
GROIN LOCATIONS

The City of Folly Beach recently updated their state-mandated Local Comprehensive Beach Management Plan (LCBMP), which included an inventory of all beachfront structures, including groins. There are 50 groins on Folly Beach, numbered from northeast to southwest with #50 being the new terminal groin at the Folly Beach County Park. Figure 1 and Figure 2 illustrate the location of the 9 groins to be rehabilitated in this project. They are numbered 21 to 29 from northeast to southwest. The LCBMP also indicated the groin condition. All of the groins being considered for rehabilitation are either in Poor Non-functional or Buried condition.
FIGURE 2. FIGURE 35 FROM THE FOLLY BEACH LOCAL COMPREHENSIVE BEACH MANAGEMENT PLAN SHOWING A STRUCTURAL INVENTORY INCLUDING HABITABLE STRUCTURES, POOLS, EROSION CONTROL STRUCTURES AND GROINS FROM 4TH ST. E. TO 11TH ST. E. THIS IMAGE SHOWS 4 OF THE 9 GROINS (26-29) TO BE REHABILITATED.

BEACH PERFORMANCE

As indicated in the next section, beach performance on Folly Beach has been monitored since the 1980’s. Annual profile data are readily available from 2014 to 2016 at all the OCRM monuments on Folly Beach. The groin rehabilitation area is between monument 2843 at 8th St. E. and monument 2863 near 14th St. E.

Since the 2014 federal renourishment, this region has performed relatively poorly as compared to the adjacent section to the southwest in the vicinity of the pier (Figure 3). The goal of this rehabilitation project is to increase the beach width between the perpetual easement line (PEL) and the 8-ft berm (USACE construction trigger) and to slow post-nourishment volume loss. For example, two years after nourishment, the average unit volume in this area was between 10 and 15 cy/ft. Ideally, this unit volume retained can be increased by 10 cy/ft to at least 20 to 25 cy/ft.
HISTORIC PERFORMANCE OF CENTRAL FOLLY BEACH

Unit volumes have increased along central Folly Beach since the initial nourishment in 1993 (Figure 4) when the dilapidated groins in this region were rehabilitated. Nourished material does not erode rapidly after placement. Rather, unit volumes have been stable to slightly accretional after nourishment events in 1993, 2005, and 2007. As of 2012, this healthy region was characterized by a unit volume of roughly 100 cy/ft. As a result, the 2014 project added little volume (Figure 5). This pattern of little volume change during and after the previous nourishment projects (Figure 4) is similar to the 2014 nourishment (Figure 5). This is the type of performance desired for the area of beach between 8th and 14th St. E.

FIGURE 4. VOLUME CHANGE DATA MEASURED ABOVE MHW AND ABOVE -4.9 FT NAVD88 FOR BENCHMARK 2828 FROM 1988 TO 2012.

FIGURE 5. VOLUME CHANGE DATA MEASURED ABOVE -5FT NAVD88 FOR 2828 FROM 2013 TO JUNE 2016.

3 From the Folly Beach Local Comprehensive Beach Management Plan, 2015.
4 From the Folly Beach 2-yr Post-Construction Monitoring Report, 2016.
DESIRED PRODUCT: IMPERMEABLE LOW-PROFILE GROINS

The existing exposed groins follow the natural, gentle slope of the active beach, extending from the backbeach to the low tide terrace, below mean sea level. The groins and the profiles are effectively anchored at the low water mark. The groins tie in to the backbeach or toe of vegetation at approximately elevation +7 ft NAVD 88. This is the desired configuration for the rehabilitated groins. If the groins' sand trapping capacity was increased, their functionality would improve.

Although the goal of this project is to improve beach performance similar to how the 1993 USACE groin rehabilitation project worked, the design goal is not to reproduce the capped sheetpile groin design. Rather, the desired product is to restore the functionality of the existing low-profile groins by making them impermeable. The existing structures will not be lengthened; they will be sand tightened. Some of the existing groins that are buried or partially-buried will need to be raised several feet. The footprint of the structures will not change.

Additional armor stone will be added to the existing rock that can be salvaged from the existing groins, and placed in a prism section along the entire length of the structure (along both the existing rock and timber-pile portions). In cases where all of the rock or timber pile structure is gone, bedding stone will be added to form a base for the new armor stone. New rock and existing groin structure can then be grouted together to create an impermeable groin with improved sand trapping capacity.

A similar rehabilitation project was undertaken in the past at Edisto Beach (Figure 6 and Figure 7).

Figure 6. Photos of groins on Edisto Beach that were rehabilitated in a similar manner to this proposal.
The next section details the present condition for each of the 9 groins to be rehabilitated.
CONDITION OF THE 9 GROINS, SEPTEMBER 2016

This section documents the condition of the 9 groins to be rehabilitated between 8th and 14th St. E. in September 2016. The photos were taken just after low tide on September 7, 2016. The photos were taken between 7:30 and 8:00 am. NOAA’s tide prediction for this time was rising from 2 to 2.5 ft (MLLW). The observed and predicted water levels at the NOAA Charleston Station 8665530 were within 0.1 ft at this day and time. For each groin, two photos are presented. The first photo is a cross-sectional view looking southwest (downdrift) and the second photo is a view looking offshore along the groin centerline or crest.

In general, the groins along the southwest end of the project area are buried or only slightly exposed. Exposure increases to the northeast with Groin #21, at 14th St. E. near the southwest end of the Washout being the most exposed structure. All of the groins extend from backbeach or the toe of vegetation offshore to the low tide terrace. The upper section of most of the groins is made of timber pile (Figure 8) and the lower section is made of rock (Figure 9). The exceptions are Groins #23 and 25 (and perhaps 28), which have an inverted construction design relative to the others. The timber pile portion of the structure is at the lower, seaward end and the rock portion is at the upper, landward end.

Recent beach monitoring data for the four (4) OCRM monuments along this section of beach is included.

FIGURE 8. TIMBLE-PILE PORTION OF GROIN #21 SHOWING SOME OF THE INTACT WOODEN "SHEETS" AND CROSS BEAMS, AS WELL AS THE PILINGS WHICH ARE RELATIVELY INTACT.
Figure 9. Illustration of the existing timber-pile and rock groins in plan view from the 1993 groin rehabilitation design (USACE General Design Memorandum\(^5\)) provided to illustrate the existing condition only. This is not the recommended rehabilitation design for this project.

**Groin #29**

Groin #29 is the first groin to the northeast of the portion of the groin field that was rehabilitated in 1993. It is located southwest of 9\(^{th}\) St. E. South Carolina Department of Health and Environmental Control (SCDHEC) Office of Ocean and Coastal Resource Management (OCRM) records (Appendix A) indicate that this groin is 215 ft long and was constructed in the 1950’s or 1960’s by the South Carolina Department of Transportation (SCDOT). As of September 2016, the seaward rock portion of the structure followed the beach profile along the beach face and low tide terrace (Figure 10) and the landward, timber portion of the structure was nearly 100% percent buried (Figure 11). There is no record of a permitted repair, but a different type of rock (larger granite) appears to have been added between the timber piles and the seaward rock section.

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FIGURE 11. CENTERLINE VIEW OF GROIN #29, LOCATED TO THE SOUTHEAST OF 9TH ST. E.
Groin #28

Groin #28 is located northeast of 9th St. E. SCDHEC OCRM records (Appendix A) indicate that this groin is 170 ft long and was constructed in 1950’s or 1960’s by SCDOT. As of September 2016, the entire structure was nearly 100% percent buried (Figure 13) with the exception of the top of a timber pile and a portion of two rocks (Figure 14). The timber pile being seaward of the rocks suggests that this groin may have the inverted design similar to Groins #23 and 25.
Groin #27

Groin #27 is located at 10th St. E. SCDHEC OCRM records (Appendix A) indicate that this groin is 105 ft long and was constructed in 1947 by the City of Folly Beach. As of September 2016, the entire structure was 100% percent buried (Figure 15Figure 13). The top of three rocks were barely visible (Figure 16Figure 14) with one rock at the waterline. This evidence suggests that the groin design is of the standard configuration, shown in Figure 9. Recent beach monitoring data is shown in Figure 17. The repair of this groin will require additional excavation.
FIGURE 15. CROSS-SECTIONAL VIEW OF BURIED GROIN #27 LOCATED AT 10TH ST. E. THREE ROCKS ARE VISIBLE, ONE AT THE WATERLINE.

FIGURE 16. CENTERLINE VIEW OF BURIED GROIN #27 AT 10TH ST. E. THREE ROCKS ARE VISIBLE, ONE AT THE WATERLINE.
Groin #26

Groin #26 is located southwest of 11th St. E. SCDHEC OCRM records (Appendix A) indicate that this groin is 145 ft long and was constructed in 1947 by the City of Folly Beach. As of September 2016, the seaward rock portion of the structure followed the beach profile along the beach face and low tide terrace (Figure 18) and the landward, timber portion of the structure was partially visible including an exposed damaged cross beam (Figure 19 and Figure 20).

FIGURE 17. RECENT BEACH MONITORING DATA FROM MONUMENT 2850, LOCATED AT 10TH ST. E. VERY CLOSE TO GROIN #25.

FIGURE 18. CROSS-SECTIONAL VIEW OF GROIN #26, LOCATED SW OF 11TH ST. E.
FIGURE 19. CENTERLINE VIEW OF GROIN #26, LOCATED SW OF 11TH ST. E.
Groin #25

Groin #25 is located northeast of 11th St. E. SCDHEC OCRM records (Appendix A) indicate that this groin is 140 ft long and was constructed in 1947 by the City of Folly Beach. This structure does not have the same construction template as the other groins in this area, as shown in Figure 9. Instead, the timber pile portion of the structure is at the lower, seaward end and the rock portion is at the upper, landward end (Figure 21). As of September 2016, the seaward timber pile portion of this structure was severely deteriorated and the upper rock portion was partially buried (Figure 22).
Groin #24

Groin #24 is located at 12th St. E. SCDHEC OCRM records (Appendix A) indicate that this groin is 170 ft long and was constructed in 1949 by SCDOT. As of September 2016, this structure was somewhat exposed (Figure 23) and in relatively good condition (Figure 24).
FIGURE 23. CROSS-SECTIONAL VIEW OF GROIN #24, LOCATED AT 12TH ST. E.

FIGURE 24. CENTERLINE VIEW OF GROIN #24, LOCATED AT 12TH ST. E.
Groin #23

Groin #23 is located at the northeast end of Arctic Ave., southwest of 13th St. E. SCDHEC OCRM records (Appendix A) indicate that this groin is 190 ft long and was constructed in 1947 by the City of Folly Beach. Like Groin #25, this structure has an inverted construction template as compared to the other groins in this area. As of September 2016, the seaward timber pile portion of this structure was severely deteriorated (Figure 25) and the upper rock portion was partially buried (Figure 26). Beach profile monitoring data are available for monument 2860, located about 100 ft to the northeast (Figure 27).

FIGURE 25. CROSS-SECTIONAL VIEW OF GROIN #23, LOCATED AT THE END OF ARCTIC AVE., SOUTHWEST OF 13TH ST. E.

FIGURE 26. CENTERLINE VIEW OF GROIN #23, LOCATED AT THE END OF ARCTIC AVE., SOUTHWEST OF 13TH ST. E.
Groin #22

Groin #22 is located southwest of 14th St. E. SCDHEC OCRM records (Appendix A) indicate that this groin is 285 ft long and was constructed in 1947 by the City of Folly Beach. As of September 2016, the seaward rock portion of the structure followed the beach profile along and beyond the low tide terrace (Figure 28) and the lower section of the timber pile portion of the structure that used to tie the timber to the rock portion was severely deteriorated (Figure 29). The upper section of the timber pile portion was in relatively good condition.
Groin #21

Groin #21 is located northeast of 14th St. E. at the southwest end of the Washout. SCDHEC OCRM records (Appendix A) indicate that this groin is 255 ft long and was constructed in 1947 by the City of Folly Beach. As of September 2016, the structure was in similar condition to Groin #22. The seaward rock portion of the structure followed the beach profile along and beyond the low tide terrace (Figure 30) and the lower section of the timber pile portion of the structure that used to tie the timber to the rock portion was severely deteriorated (Figure 31). The upper section of the timber pile portion was in relatively good condition.
Based on recent monitoring data (Figure 32), it is assumed that the top elevation of the timber pile portion of the structure is about +7 ft NAVD88.

Figure 30. Cross-sectional view of Groin #21, located NE of 14th St. E. at the SW end of the washout.
FIGURE 31. CENTERLINE VIEW OF GROIN #21, LOCATED NE OF 14TH. ST. E. AT THE SW END OF THE WASHOUT.
FIGURE 32. RECENT BEACH PROFILE MONITORING DATA FOR MONUMENT 2863, LOCATED ABOUT 70 FT NORTHEAST OF GROIN #21.

APPENDIX A

Inventory of Folly Beach Groins provided by SCDHEC OCRM

<table>
<thead>
<tr>
<th>Groin</th>
<th>Length in feet</th>
<th>Build date</th>
<th>Built by</th>
<th>Rebuild date</th>
<th>Rebuilt by</th>
<th>Material</th>
<th>Condition</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>230</td>
<td>1962</td>
<td>US Coast Guard</td>
<td>none</td>
<td>none</td>
<td>riprap</td>
<td>Poor Non-functional</td>
</tr>
<tr>
<td>2</td>
<td>315</td>
<td>1962</td>
<td>US Coast Guard</td>
<td>none</td>
<td>none</td>
<td>riprap</td>
<td>Poor Non-functional</td>
</tr>
<tr>
<td>3</td>
<td>400</td>
<td>1976</td>
<td>US Coast Guard</td>
<td>none</td>
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APPENDIX B

FIGURE 33. PLAN VIEW OF 1993 GROIN REHABILITATION DESIGN FROM THE USACE GENERAL DESIGN MEMORANDUM