EXECUTIVE SUMMARY

Recommendation to approve a proposal from CB&I Coastal Planning & Engineering dated October 22, 2014 for Collier County Creek Feasibility Analysis, approve a work order under Contract No. 13-6164-CZ for a not to exceed amount of $59,807.44, approve necessary budget amendment, and make a finding that this item promotes tourism.

OBJECTIVE: To approve a proposal from CB&I Coastal Planning & Engineering for Collier County Creek Feasibility Analysis.

CONSIDERATIONS: Collier Creek is at the mouth of Collier Bay and connects the Bay to the Big Marco River/Capri Pass and ultimately to the Gulf of Mexico. Approximately one-third of Marco Island boaters use Collier Creek to access the Gulf of Mexico, and the Esplanade area within Collier Bay. This pass has been dredged twice within the past ten (10) years utilizing Tourist Development Council (TDC) funds. Beach quality sand from these dredging events has been placed in the intertidal zone of State property, seaward of the erosion control line.

This area is one of the most ephemeral areas within Collier County over the past ten (10) years. This study will analyze the coastal processes at the Collier Creek entrance to Big Marco/Capri Pass; identify the problems and potential solutions. The goal is to reduce erosion forces caused by the existing current pattern and improve navigation.

The work will include: a site visit and kick-off meeting to gather information from stakeholders, a reconnaissance level field investigation, research of historic reports and summarization of the area's history, analysis of the information and alternatives, and preparation for a report on possible causes, solutions and cost sharing.

FISCAL IMPACT: Funding for the proposed work order is not presently included in the budget. However, sufficient funding is available in Tourist Development Tax Fund (195) reserves. A budget amendment will be necessary to move funds, in the amount of $59,807.44, from reserves into new Project No. 90064. Funding for this project will not be requested for reimbursement from any grantor agency.

GROWTH MANAGEMENT IMPACT: There is no impact to the Growth Management Plan related to this action.

ADVISORY COMMITTEE RECOMMENDATIONS: At the October 23, 2014 CAC meeting this item was unanimously approved by an 8 to 0 vote. The TDC will review this item on Monday, October 27, 2014, and the recommendation will be presented to the BCC on Tuesday, October 28, 2014.

LEGAL CONSIDERATIONS: Pass and inlet maintenance is an authorize expenditure under Collier County's Tourist Development Tax Ordinance No. 92-60, as amended. The CAC and TDC must each make a recommendation regarding approval and a recommendation that the project expenditure promotes tourism. The BCC may accept the recommendation or make its

own recommendation and finding. This item has been approved as to form and legality and requires majority vote for approval. – CMG

RECOMMENDATION: That the Board of County Commissioners approves a proposal from CB&I Coastal Planning & Engineering dated October 23, 2014 for Collier County Creek Feasibility Analysis and approve a work order under Contract No. 13-6164-CZ for a not to exceed amount of $59,807.44, and make a finding that this item promotes tourism.

Prepared By: J. Gary McAlpin, P.E., Coastal Zone Management, Natural Resources Department

Attachments**:** A) Proposal
B) Work Order

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October 22, 2014

Gary McAlpin
Collier County Government
2800 N. Horseshoe Drive
Naples, FL 34104

RE: Collier County, Collier Creek Feasibility Analysis
(Contract No. 13-6164-CZ "Professional Services: Architect and Engineering")

Dear Gary:

This letter is in response to Collier County's request for a proposal for coastal engineering services to study the coastal processes at the Collier Creek entrance into Big Marco/Capri Pass, and identify the problem and potential solutions. The goal is to reduce erosive forces caused by the existing current pattern and improve navigation. The work will include: a site visit and a kick-off meeting to gather information from stakeholders, a reconnaissance level field investigation, research of historic reports and summarization of the area's history, analysis of the information and alternatives, and preparation of a report on possible causes, solutions and cost sharing.

1. Site Visit and Kickoff Meeting.

   We will attend a meeting arranged by the County and any other County invited stakeholders to discuss the County's concerns regarding the Collier Creek erosion and navigation problems.

   A site visit to the locations will be undertaken to document pertinent structures, sediment transport and current patterns, evidence and location of areas of critical erosion, problematic currents, public usage, and sediment characteristics.

   Meeting minutes and an observation report will be developed.

2. Field Investigation: Survey and Current Measurements.

   The field investigation will consist of topographic and hydrographic survey of channel cross-sections and the adjacent beaches, current measurements, sediment sampling, and a follow up site visit.

   The channel cross-section and beach profile survey will use the lines established for Collier Creek and Hideaway Beach monitoring to the extent feasible, supplemented with a new cross-section of Big Marco/Capri Pass east from the Creek. A sufficient number of lines will be surveyed within the two field days included with this proposal to define bathymetry, topography and structural locations in the project vicinity. The surveys will note the edge of vegetation, location the top and toe all seawalls, rock structure locations and other features within project area. The surveys will not extend shoreward of the top of seawall or mangroves or edge of buildings. A center line survey of Collier Creek and its extension into Collier Bay will be conducted.

Real Time Kinematics (RTK) Global Positioning System (GPS) will be used to locate and confirm the survey control for this project. In order to achieve required accuracy, the survey will be controlled using Florida Department of Environmental Protection (FDEP) 2nd order monuments or equivalent.

The topographic survey will be conducted using RTK GPS rovers and differential leveling techniques where needed. Leveling techniques will only be used in areas inaccessible to RTK GPS rovers due to satellite obstructions.

A Trimble RTK GPS and a TSS Motion Compensator are used onboard the survey vessel to provide instantaneous tide corrections as well as heave, pitch, and roll corrections. In order to maintain the vessel navigation along the profile lines, HYPACK navigation software will be used. This software provides horizontal position to the sounding data allowing real-time review of the profile data in plan view or cross section format. HYPACK also provides navigation to the helm to control the deviation from the online azimuth.

Channel cross sections will normally end with the first measurement above MHW, except at seawall and rock structures. At the jetty, the survey will extend landward approximately 100 feet.

Horizontal and vertical positioning checks are conducted at the beginning and end of each day using 2nd order FDEP "A" monuments or equivalent located in the project area. The sounder will be calibrated via bar-checks or a sound velocity probe at the beginning and end of the day. All work will be performed under the direct supervision of a Florida Professional Surveyor and Mapper.

Current measurements will be taken using a hand held gauge at a few pertinent points. Three measurements will be taken at each location and averaged. Measurements will be taken near the peak of the ebb and flood currents. Location will include the entrance of Collier Creek at an east, west and central points cross channel center of Collier Creek; and in the center of Big Marco River east of the Creek entrance. Three sand samples will be taken from the Creek and the flood shoal in Collier Bay.

Deliverables will include a bathymetric survey drawing certified by a Florida registered surveyor and mapper and digital files of data represented on the survey drawing and volume changes will be calculated and delta elevation charts will be prepared for the project area.

3. Research Historical Reports and Prepare a Historical Summary.

CB&I will research past reports, maps, aerial photographs, environmental reports and survey data. A historical summary will be developed to describe changes in the topography, bathymetry and structures that may have an influence on changes in the regional coastal processes pertinent to Collier Creek. In addition, we will review, where feasible, historic reports from County, City, State agencies and other consultants which are pertinent to the study area. We will identity local stakeholders and ask them to provide their views of the problem, solutions and restrictions. We will summarize these stakeholder views and describe the results of past environmental studies and historical findings that may be pertinent to changes in the area.

4. Engineering Analysis of Alternatives.

In order to develop an understanding of the coastal processes of the area, CB&I will utilize coastal engineering principles to analyze historic reports and data along with recent field measurements, existing descriptions of the processes, existing survey data and recent aerial photographs.

We will develop and evaluate select alternatives to determine if they meet the objectives of improving the condition of the Collier Creek entrance channel. Alternatives and/or project features to be considered include, but are not limited to the following:

1. Channel realignment
2. Review terminal jetty modification-2012 FDEP Permit #0309260-001-JC
3. Higher, longer and sand tightened terminal jetty
4. Terminal jetty relocation and/or second jetty
5. East Channel Bank/Slope Stabilization
6. Seawall toe protection
7. Modify Collier Creek and adjacent shoreline dredging plan
8. Sand trap
9. Combinations of the above

Alternatives will be evaluated to a feasibility level and a recommended alternative identified. Construction cost estimates will be prepared for the recommended alternative.

5. Government Process.

Permitting and cost sharing of the project will be evaluated. We will identify aspects of the project that will decrease time to permit, and/or where permitting can be piggy backed on existing projects or permits. Based on Collier County funding principals, we will propose a cost breakdown for each project purpose and show how on they might be divided among governments and stakeholders. We will prepare a preliminary cost estimate of the recommended project.

6. Report Preparation and Presentation.

We will prepare a report and make recommendations on a selected alternative and future detailed studies needed to implement it. We will attend a meeting to present the finding and prepare a summary of the County's recommendation form a future directions based on the presentation.

Compensation:

A fee proposal is included as Exhibit A and the rate schedule is provided as Exhibit B. The cost of these services is time and materials of $59,807.44.

All work will be completed within 180 days of receiving the Notice to Proceed.

Sincerely,

Thomas P. Pierro, P.E., D.CE.
Director
CB&I Coastal Planning & Engineering, Inc.

cc: Stephen Keehn, P.E
Tara Brenner, P.G.

Confidentiality Statement

The information contained in this proposal is confidential commercial information and shall not be disclosed, except for evaluation purposes, provided that if a contract is awarded to CB&I Environmental & Infrastructure, Inc. as a result of or in connection with the submission of this proposal, the requester shall have the right to use or disclose the data to the extent provided in the contract. This restriction does not limit the requestor's right to use or disclose any technical data obtained from another source without restriction.

Exhibit A
Fee Proposal

EXHIBIT B

FEE PROPOSAL FOR
COLLIER CREEK FEASIBILITY ANALYSIS
COLLIER COUNTY, Contract No. 13-6164

October 22, 2014

	Task Item	Cost	LABOR COSTS											INDIRECT COSTS				EQUIPMENT COSTS							
			Senior Project Manager (Hours)	Project Manager / Professional Surveyor & Mapper (Hours)	Senior Engineer (Hours)	Engineer (Hours)	3-Man Survey Crew (Hours)	Marine Biologist/Hydrogeologist (Hours)	Senior Marine Biologist/Hydrogeologist (Hours)	Senior GIS Specialist/ Senior CAD Specialist (Hours)	Clerical/Administrative (Hours)	Surveyor and Mapper (Hours)	CADD Technician (Hours)	Lodging (Daily)	Meals (Daily)	Mileage (Daily)	Tolls	Survey Boat 24' (Daily)	Truck (Road Use per mile) (Daily)	RTK GPS (Daily)	Heave, Pitch & Roll Compensator (Daily)	Speed of Sound Velocity Meter (Daily)	Hypack/ Hysweep Navigation System (Daily)	Odom Hydrotrac Sounder (Daily)	Sand Sample Analysis
1	SITE VISIT AND KICK OFF MEETING	$3,306.36	8		4	8					2				2	248	1								
2	FIELD INVESTIGATIONS	$17,960.36		16			32	8				24	16	6	9	248	2	2		2	2	2	2	2	3
3	RESEARCH HISTORICAL REPORTS	$9,506.36	6		4	20		20	16		8		4		1	248	1								
4	ENGINEERING ANALYSIS OF ALTERATIVES	$18,096.00	10		30	40				10	8		60												
5	GOVERNMENT PROCESS	$3,700.00	6		4	12			4								1								
6	REPORT PREPARATION AND PRESENTATION	$7,238.36	8		12	24					14				1	248	1								
	Total Hours =		38	16	54	104	32	28	20	10	32	24	80	6	13	992	6	2	0	2	2	2	2	2	3
	Rate =		$172	$147	$157	$123	$161	$110	$138	$139	$62	$120	$81	$136	$36	$0.445	$12.000	$790	$0	$495	$215	$63	$260	$165	$50
	Cost =		$6,536	$2,352	$8,478	$12,792	$5,152	$3,080	$2,760	$1,390	$1,984	$2,880	$6,480	$816	$468	$441	$72	$1,580	$0	$990	$430	$126	$520	$330	$150

LABOR COSTS	**$53,884.00**
INDIRECT COST	**$1,797.44**
EQUIPMENT COST	**$4,126.00**
TOTAL	**$59,807.44**

Exhibit B
Rate Schedule

SCHEDULE B: RATE SCHEDULE

Title	Standard Hourly Rate
Principal	$ 206.00
Senior Project Manager	$ 172.00
Project Manager	$ 147.00
Senior Engineer	$ 157.00
Engineer	$ 123.00
Senior Inspector	$ 96.00
Inspector	$ 76.00
Senior Planner	$ 139.00
Planner	$ 110.00
Senior Designer	$ 114.00
Designer	$ 94.00
Environmental Specialist	$ 109.00
Senior Environmental Specialist	$ 134.00
Scientist/Geologist	$ 93.00
Senior Scientist/Geologist	$ 118.00
Marine Biologist/Hydrogeologist	$ 110.00
Senior Marine Biologist/Hydrogeologist	$ 138.00
Senior GIS Specialist	$ 139.00
GIS Specialist	$ 102.00
Clerical/Administrative	$ 62.00
Senior Technician	$ 85.00
Technician	$ 72.00
Surveyor and Mapper	$ 120.00
CADD Technician	$ 81.00
Survey Crew - 2 man	$ 130.00
Survey Crew - 3 man	$ 161.00
Survey Crew - 4 man	$ 189.00
Senior Architect	$ 154.00
Architect	$ 121.00

This list is not intended to be all inclusive. Hourly rates for other categories of professional, support and other services shall be mutually negotiated by Collier County and firm on a project by project basis as needed.