May 12, 2026

Meeting Agenda and Notice

Coastal Advisory Committee (CAC)
Thursday, May 14, 2026– 1:00 p.m.
Collier County Board Chambers
Collier County Government Center
3299 Tamiami Trail East, Third Floor, Naples, FL

Sunshine Law on Agenda Questions
2026 CAC MEETING DATES

I. Call to Order

II. Pledge of Allegiance

III. Roll Call

IV. Changes and Approval of Agenda

V. Public Comments

VI. Approval of CAC Minutes

January 8, 2026

VII. Staff Reports

Extended Revenue Report

VIII. New Business

1. ES- 2026 Hardbottom Monitoring

   - W.O 2026 Hardbottom Monitoring

IX. Old Business

X. Announcements

XI. Committee Member Discussion

XII. Next Meeting Date/Location

June 11, 2026 at 1:00 p.m.

XIII. Adjournment

All interested parties are invited to attend, and to register to speak and to submit their objections, if any, in writing, to the board prior to the meeting if applicable. For more information, please contact Andrew Miller at (239) 252-2922.
If you are a person with a disability who needs any accommodation in order to participate in this proceeding, you are entitled, at no cost to you, to the provision of certain assistance. Please contact the Collier County Facilities Management Department located at 3301 East Tamiami Trail, Naples, FL 34112, (239) 252-8380.

Public comments will be limited to 3 minutes unless the Chairman grants permission for additional time.

Collier County Ordinance No. 99-22 requires that all lobbyists shall, before engaging in any lobbying activities (including, but not limited to, addressing the Board of County Commissioners) before the Board of County Commissioners and its advisory boards, register with the Clerk to the Board at the Board Minutes and Records Department.

COLLIER COUNTY COASTAL ADVISORY COMMITTEE (CAC)
Thursday, January 08, 2026 – 1:00 p.m.
Collier County Board Chambers
Collier County Government Center,3rd Floor
3299 Tamiami Trail East, Naples, FL 34112

LET IT BE REMEMBERED that the COLLIER COUNTY COASTAL ADVISORY COMMITTEE, in and for the County of Collier, having conducted business herein, met on this date January 8, 2026, at 1:00 p.m., at the Board of County Commissioners Chambers, Third Floor, Collier Government Center, East Naples, Florida, with the following members present:

CAC MEMBERS PRESENT

Joseph S. Burke, Chairman
Dave J. Trecker, Vice Chairman
Erik Brechnitz
Dr. Judith Hushon
Linda Penniman
Bob Raymond

ALSO, PRESENT

Andrew Miller, P.E., Coastal Zone Management, Capital Project Planning, Impact Fees, and Program Management Division, Colleen Greene

Any person who decides to appeal a decision of this Board will need a record of the proceedings pertaining thereto and therefore may need to ensure that a verbatim record of the proceedings is made, which record includes the testimony and evidence upon which the appeal is to be based. Neither Collier County nor this Board shall be responsible for providing this record.

I) Call to Order

Chairman Burke called the meeting to order at 1:00 p.m.

II) Pledge of Allegiance

The Committee recited the Pledge of Allegiance.

III) Roll Call

Chairman Burke confirmed a quorum with six members present. Erik Brechnitz may be arriving. Daniel High is not attending. The committee is short one member who is expected to be approved for the February meeting.

IV) Changes and Approval of the Agenda

Chairman Burke noted one addition to the agenda for the Doctors Pass dredge. Motion was made to approve the agenda with the addition of the Doctors Pass dredge. The motion was seconded. All in favor said. None opposed. Motion passed unanimously.

V) Public Comment

Colleen confirmed there were no public comments.

VI) Approval of Previous Meeting Minutes

Dave J. Trecker noted a few spelling corrections on the last page: "Motion to approve recommendations as presented was made by Eric Recknitz. Misspelled. Take the N out." So corrected to Erik Brechnitz. "Second by Dave Tucker. Replace the U with an R and an E." So corrected to Dave Trecker. And the last one, chair vacancy number three, should be S-A-B-O-U-R-I-N, not Tom Saverin's but S-A-B-O-U-R-I-N. Linda Penniman thanked for the good catch. No other edits. Motion was made to approve the meeting minutes with the indicated changes. The motion was seconded. All in favor. None opposed. Motion passed unanimously.

VII) Staff Reports

Andrew Miller, P.E., from Coastal Zone Management, presented the staff reports. He noted a brand new year with the first reporting and good numbers. He slid straight to the graph at the bottom showing the red dot indicating the first month's revenues are above the shaded line from last year's revenues. For the adopted budget, starting off the year at about 36 percent above what was anticipated, which is great news. Erik Brechnitz had a question: He read in the paper about tax revenues in Collier County, with a blip on what the sports center contributed, calling it a crock of baloney with wrong numbers. He questioned how they counted 720,000 people—whether new every day or repeats—and the math on sales tax revenue and economic impact was wrong. He suggested going back to math 101. Someone asked what paper it was, and it was noted as silly. Andrew Miller advised Erik Brechnitz to go straight to the TDC and talk to Jay Tusa, the director, for the correct numbers and scenario, as he has the scoop. No other comments on staff reports.

VIII) New Business

i) ES-2027-2028 LGFR Analysis Work Order – 2027/2028 LGFR Analysis
Andrew Miller presented this annual item. Everyone on the committee should have seen this. The LGFR is the local government funding request submitted to the state for beach and inlet projects. They hire a consultant, Aptim Environmental and Infrastructure LLC, to walk through it every year due to their great relationship with the state and knowledge of the format. They've been doing it since Miller has been in coastal zones, doing a great job. This year it's $28,462, standard for this exercise. Recommendation summary: Approve a work order with APTIM Environmental & Infrastructure, LLC to provide professional engineering services for 2027-2028 Local Government Funding Request under Contract No. 18-7432-CZ for time and material not to exceed $28,462 and make a finding that this item promotes tourism (Project No. 90065). Dave trecker asked if this is an annual request. Miller confirmed it is an annual work order.
Moved by Dave Trecker; Seconded by Linda Penniman.
All in favor said. None opposed. Motion passed unanimously.

ii) ES - Wiggins Pass Dredge: Andrew Miller presented: What they are doing soon, wanted for the past couple years pending Army Corps permit, is to dredge Wiggins Pass. It's been on schedule, but with recent hurricanes, it's filled in significantly, hard to get in and out at low tide. Got Army Corps

permit several weeks ago, put project out to bid, bids due January 19th. Bringing funding to CAC and TDC to authorize so can go straight to BCC with contract, not waste another month. Engineer's estimate conservative at $2 million, including $300,000 contingency. Expects bids under that. Recommendation summary: Approve the 2026 Wiggins Pass Dredge project scheduled for March/April 2026 and authorize Tourist Development Tax expenditures for an estimated project cost not to exceed $2,000,000; and make a finding that this item promotes tourism (Project 80288). Dave Trecker asked if this is part of the regular four-year cycle. Miller confirmed it is, last dredged end 2021-beginning 2022, would have liked last year but due to storms, on four- to five-year cycle. Dave Trecker asked the basis for where the dredge sand is placed, noting it wasn't seen. Miller explained there's an inlet management plan for Wiggins Pass calling for one-third north, two-thirds south, but not every time; engineers look at beaches north and south based on year's survey. Over time, balance is one-third to two-thirds. This year, sand going to Delnor-Wiggins State Park between R-18 and R-20 FDEP monuments. Dave Trecker asked if the cost is consistent with pass dredging. Miller confirmed it is, in line with 2021-22 dredge at $1.5 to $2 million, which included Doctors Pass. Erik Brechnitz asked how much per cubic yard. Miller said about 75,000 yards to $2 million, they can do the math, but cheaper than truck haul by the yard. Chairman Burke asked the estimated duration. Miller said hoping to finish in a month and a half to two months max, and will explain timing with Doctors Pass. Chairman Joe Burke asked when sea turtle nesting starts. Miller said May 1st is the first day, must be done by then. Dr.Judy Hushon noted last year they had them in April. No other questions.
Moved by Erik Brechnitz; Seconded.
All in favor. None opposed. Motion passed unanimously.

iii) ES - Doctors Pass Dredge Andrew Miller presented: Typically bid both Doctors and Wiggins under same contract for single mobilization. But waiting on Wiggins permit, didn't know when it would come, so split projects. As luck, got permit two-three weeks ago, consultant working on Doctors design, comfortable with estimate, plans almost final. If waited, could have put together, but couldn't risk. Bids for Wiggins due Jan 19th, putting Doctors bid package together. By time bidders look at Doctors, will have apparent low bidder for Wiggins, if same contractor bids Doctors, already mobilized, hope for good mobilization bid. Need to do both before May 1st. Recommendation summary: Approve the 2026 Doctors Pass Dredge project scheduled for April/May 2026 and authorize tourist development tax expenditures for an estimated project cost not to exceed $1,250,000; authorize a budget amendment; and make a finding that this item promotes tourism (Project 90549). Bob Roth asked, that being the case, would award first contract before second hits street? Contractor knows has one, doesn't have to mobilize for second, while others do? Miller said made known at pre-bid conference Tuesday, both projects potentially on street, one awarded prior. Fair enough.

Dr. Judy Hushon asked if end up with two bids from same contractor, can renegotiate mobilization? Miller said may or may not, doesn't know won one before bidding other. Miller explained bids still out for Doctors when Wiggins bids come in, apparent low bidder can modify mobilization for Doctors. Dave Trecker asked if within usual four-year cycle. Miller said yes, both done end 2021-2022. Potentially sequentially or simultaneously? Sequentially, if same contractor, finish Wiggins then to Doctors, up against May 1st. Linda Penniman reminder lag time between awarding bid and permitting. Miller said permits in place for both. Just got Army Corps for Wiggins three-four weeks ago, pulled trigger. Traditional they come in before awarding? Permits generally in place 15-20 years. Wiggins expired 2023, waiting on modification. Maintenance dredging permits. Erik Brechnitz asked if surprised at high bid per cubic yard for Wiggins, engineer's estimate little less than $30/cy. Miller said numbers similar to 2021-22 contract award. Compared to Hideaway Sand Dollar at $13/cy. That was hydraulic dredge. No other questions.
Moved by Dave Trecker; Seconded
All in favor. No opposed. Motion passed unanimously.

iv) ES - John Deere – Tractor Proposal. Andrew Miller presented: Maintain South Marco or Marco Beach, rake every morning, also Vanderbilt Beach. John Deere tractor on Marco, one at Vanderbilt, keep at least one spare as in salt water every day, break down frequently. Keep spare so beaches stay maintained. Three tractors now, one limping along, barely serviceable, repairs more than worth keeping. This will be redundant tractor. Recommendation summary: Approve and authorize the purchase of a John Deere 6135E Cab Tractor from Deere & Company utilizing Cooperative Procurement Piggyback 411 “Sourcewell Ag Tractors 082923-DAC” using Tourist Development Tax fund 1105 in the amount of $116,292.81 and make a finding that this expenditure promotes tourism. Erik Brechnitz asked, when groom the beach, use barber rakes? Miller confirmed barber surf rakes. How long last, replacing soon? Miller said replace, replaced at least one in past five years, wear out, many moving parts. No other questions. Moved by Erik Brechnitz; All in favor. None opposed. Motion passed unanimously.

IX) Old Business

Dave Trecker made a report to keep everyone in the loop on Pelican Bay Services Division, as they work hand in glove with the county. Clam Pass dredging now complete. Beach renourishment should be completed by end of February, pretty good timing. Learned yesterday, 3,000 mangroves planted behind dunes south of Clam Pass and just inside the pass. Fabulous, where they were destroyed, really good news. 3,000, that's 3,000. Should hold things in place for a while. Dr. Judy Hishon asked how deep ultimately made that area, sure reshaped, where water came over into Clam Bay, over dune through thin mangroves. Dave Trecker didn't have specifics. Don't

really know. Also added height. Some dunes nine feet in height. They're huge. No other old business.

X) Announcements

Andrew Miller noted no announcements, but discussed new member coming on after BCC approves recommendation on January 13th next week, should attend formally next month.

Dr. Judith Hushon asked when scheduled to look at dune plantings for replacement, contract had if didn't take, contractor replace. Miller didn't have answer off top of head, probably coming up soon, within next couple months. Perhaps next meeting let know status on plantings. May require someone from garden to brief on how well doing, status of exercise. Linda Penniman asked if need motion to have someone from garden. Miller suggested add old business item for discussion.

XI) Committee Member Discussion

No committee member discussion items.

XII) Next Meeting Date

Next meeting date is February 12, 2026 here at 1:00 p.m.

XIII) Adjournment

There being no further business, the meeting was adjourned at 1:32 p.m.

Chairman Jose S. Burke

The Minutes were approved by:

_____

_____

Name Signature

as presented on _____
or amended on _____

FY 26 TDT Collections Report

30-Apr-2026

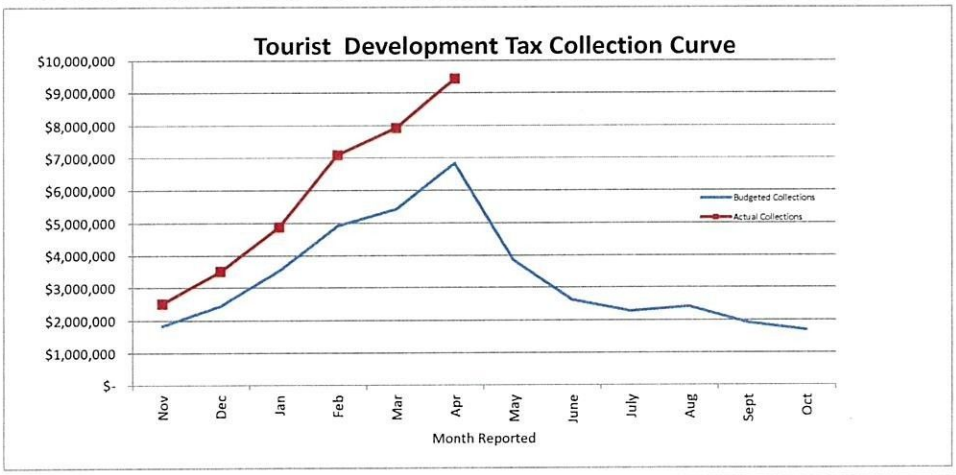
Fund Reporting	Fund	Adopted Budget	Updated Annual Forecast	Budgeted YTD	YTD Actual	Variance to Budgeted YTD
Beach Park Facilities	1100	1,425,600	1,796,016	895,924	1,266,521	370,598
TDC Promotion	1101	14,425,900	18,693,874	9,066,011	12,591,217	3,525,207
Non-County Museums	1103	760,600	958,228	478,002	674,462	196,460
TDC Admin	1104	-	-	0	-	-
Beach Renourishment	1105	15,522,000	19,555,112	9,754,859	13,787,082	4,032,223
Disaster Recovery	1106	-	-	0	-	-
County Museums	1107	2,000,000	2,000,000	1,256,907	2,000,000	743,093
TDC Capital	1108	5,686,300	7,163,783	3,573,577	5,052,611	1,479,035
	Gross Budget	**39,820,400**	**50,167,013**	**25,025,279**	**35,371,893**	**10,346,614**
	Less 5% Rev Res	(1,991,000)	25.98%		% Over/(Under) Bud	41.3%
	Net Budget	37,829,400				

Collections

Month Reported	Actual	Cum YTD	% Budget Collected to Date	% Variance FY25 Collections	% Variance FY24 Collections	% Variance FY23 Collections
Nov	2,516,790	2,516,790	6.32%	17.74%	-1.94%	6.91%
Dec	3,509,492	6,026,282	15.13%	1.28%	7.18%	32.60%
Jan	4,887,253	10,913,535	27.41%	5.49%	10.79%	31.68%
Feb	7,097,537	18,011,072	45.23%	9.76%	8.55%	31.17%
Mar	7,930,825	25,941,897	65.15%	12.61%	15.47%	24.62%
Apr	9,429,996	35,371,893	88.83%	11.96%	15.86%	29.22%
May	-	35,371,893	88.83%	n/a	n/a	n/a
June	-	35,371,893	88.83%	n/a	n/a	n/a
July	-	35,371,893	88.83%	n/a	n/a	n/a
Aug	-	35,371,893	88.83%	n/a	n/a	n/a
Sept	-	35,371,893	88.83%	n/a	n/a	n/a
Oct	-	35,371,893	88.83%	n/a	n/a	n/a
Total	**35,371,893**	**35,371,893**	YTD	**9.96%**	**11.24%**	**27.31%**

Budget Comparison

	5 Yr History-Cum	5 Yr History-Monthly	Budgeted Collections	Actual Collections	Budget to Actual Variance	Updated Forecast
Nov	4.6%	4.6%	1,847,290	2,516,790	669,501	2,516,789
Dec	10.8%	6.1%	2,443,425	3,509,492	1,066,067	3,509,492
Jan	19.7%	8.9%	3,542,007	4,887,253	1,345,246	4,887,253
Feb	32.0%	12.3%	4,915,037	7,097,537	2,182,500	7,097,537
Mar	45.7%	13.6%	5,434,547	7,930,825	2,496,278	7,930,825
Apr	62.8%	17.2%	6,842,974	9,429,996	2,587,023	9,429,996
May	72.5%	9.7%	3,845,085	-	-	3,845,085
June	79.1%	6.6%	2,624,709	-	-	2,624,709
July	84.8%	5.7%	2,287,169	-	-	2,287,169
Aug	90.9%	6.1%	2,415,026	-	-	2,415,026
Sept	95.7%	4.8%	1,919,153	-	-	1,919,153
Oct	100.0%	4.3%	1,703,978	-	-	1,703,978
Total	100.0%	100.0%	**39,820,400**	**35,371,893**	**10,346,614**	**50,167,013**
			% over/(under) budget		41.3%	25.98%



EXECUTIVE SUMMARY

Recommendation to approve the Work Order for CSA Ocean Sciences, Inc. to continue the required post-construction hardbottom monitoring for the Collier County Beach Nourishment Project in summer 2026 in a lump sum amount not to exceed $293,606.00 utilizing Tourist Development Tax funds under Professional Services Agreement No. 22-8015, authorize the Chairman to execute the Work Order, and to find that this item promotes tourism (Fund 1105, Project No. 90033).

OBJECTIVE: To continue to conduct post-construction hardbottom monitoring of Collier County's coast as required by regulatory permits and accept a proposal dated April 24, 2026, to perform biological monitoring in the summer of 2026.

CONSIDERATIONS: The Florida Department of Environmental Protection (FDEP) and the United States Army Corps of Engineers require nearshore hardbottom monitoring to be performed on a yearly basis to assure that beach renourishment sand has not migrated onto the nearshore coral outcropping off the coast of Collier County. This work is required to be performed during the spring and summer of each year when underwater visibility in the Gulf of Mexico is greatest. Field work must be completed, according to permit, by September 30, 2026.

Pending the results of annual inlet monitoring, should dredging be required in areas known to have seagrass habitat, CSA may also be required to perform sub aquatic vegetation surveys during the summer growing season.

On February 27, 2024, the Board of County Commissioners (BCC) approved Agreement 22-8015 (Item 16.B.5). A work order will be released against the master contract identifying specific scope of work, schedule, and pricing for the summer 2026 nearshore hardbottom monitoring. The Work Order for 2026 is for a lump sum not to exceed amount of $293,606.00.

This item is consistent with the Quality of Place Objectives of the County's Strategic Plan.

GROWTH MANAGEMENT IMPACT: This item is consistent with the Conservation and Coastal Management Element of the Growth Management Plan.

ADVISORY COMMITTEE RECOMMENDATIONS: This item will be presented to the Coastal Advisory Committee (CAC) on May 14, 2026, and the Tourist Development Council (TDC) on May 19, 2026.

LEGAL CONSIDERATIONS: This item is approved as to form and legality and requires majority vote for approval. – CMG

FISCAL IMPACT: Funding in the amount of $293,606.00 is available in the Tourist Development Tax Beach Renourishment Fund (1105) project 90033.

FDEP cost-share funding will be requested if eligible at a future date to reimburse Collier County for a portion of the completed work.

RECOMMENDATION: To approve a Work Order for CSA Ocean Sciences, Inc. to continue the required post-construction hardbottom monitoring for the Collier County Beach Nourishment

Project in summer 2026 for lump sum not to exceed $293,606.00 Tourist Development Tax funds under Professional Services Agreement No. 22-8015, authorize the Chairman to execute the Work Order, and to find that this item promotes tourism (Fund 1105, Project No. 90033).

Prepared By: Andrew Miller, P.E., Coastal Zone Management, Capital Project Planning, Impact Fees, and Program Management Division

WORK ORDER/PURCHASE ORDER

Contract 22-8015 "Professional Services for Nearshore Biological Monitoring "
Contract Expiration Date: March 1, 2027

This Work Order is for professional Engineering services for work known as:

Project Name: Collier County 2026 Nearshore Hardbottom Biological Monitoring and SAV Surveys
Project No: 90033.1

The work is specified in the proposal dated April 24, 2026, which is attached hereto and made a part of this Work Order. In accordance with Terms and Conditions of the Agreement referenced above, this Work Order/Purchase Order is assigned to: CSA Ocean Sciences Inc.

Scope of Work: As detailed in the attached proposal and the following:

* Task 1 Nearshore Hardbottom Biological Monitoring
* Task 2 Doctors Pass Post-Dredging SAV Survey
* Task 3 Wiggins Pass Post-Dredging SAV Survey
* Task 4 Water Turkey Bay Post-Dredging SAV Survey
* Task 5 Collier Creek Pre-Dredging SAV Survey

Schedule of Work: Complete work within 270 days from the date of the Notice to Proceed which is accompanying this Work Order. The Consultant agrees that any Work Order that extends beyond the expiration date of Agreement # 22-8015 will survive and remain subject to the terms and conditions of that Agreement until the completion or termination of this Work Order.

Compensation: In accordance with the Agreement referenced above, the County will compensate the Firm in accordance with following method(s): ☒Negotiated Lump Sum (NLS) ☐Lump Sum Plus Reimbursable Costs (LS+RC) ☐Time & Material (T&M) (established hourly rate – Schedule A) ☐ Cost Plus Fixed Fee (CPFF), (define which method will be used for which tasks) as provided in the attached proposal.

Task 1	$163,939.00	NLS-NTE
Task 2	$44,092.00	NLS-NTE
Task 3	$30,671.00	NLS-NTE
Task 4	$34,352.00	NLS-NTE
Task 5	$20,552.00	NLS-NTE

TOTAL FEE $293,606.00 NLS-NTE

PREPARED BY: HumphriesLarry Digitally signed by HumphriesLarry Date: 2026.04.27 13:18:48 -04'00' 4/27/2026

Larry Humphres, Project Manager II — Date

APPROVED BY: ThomasMatthew Digitally signed by ThomasMatthew DN: E=Matthew.Thomas@colliercountyfl.gov, CN=ThomasMatthew, OU=Transportation Engineering Users, OU=GMD CM Transportation Engineering, OU=Construction and Maintenance, OU=GMD, OU=Divisions, DC=bcc, DC=colliergov, DC=net Date: 2026.04.29 11:16:13-04'00'

Jay Ahmad, Division Director — Date

APPROVED BY: ScottTrinity Digitally signed by ScottTrinity Date: 2026.05.04 08:47:13 -04'00'

Trinty Scott, Department Head — Date

By the signature below, the Firm (including employees, officers and/or agents) certifies, and hereby discloses, that, to the best of their knowledge and belief, all relevant facts concerning past, present, or currently planned interest or activity (financial, contractual, organizational, or otherwise) which relates to the proposed work; and bear on whether the Firm has a potential conflict have been fully disclosed.

Additionally, the Firm agrees to notify the Procurement Director, in writing within 48 hours of learning of any actual or potential conflict of interest that arises during the Work Order and/or project duration.

ACCEPTED BY: CSA Ocean Sciences Inc.

DocuSigned by: Frederick B Ayer II 553701705215458... Apr 30, 2026

Frederick B. Ayer, II, Executive President — Date

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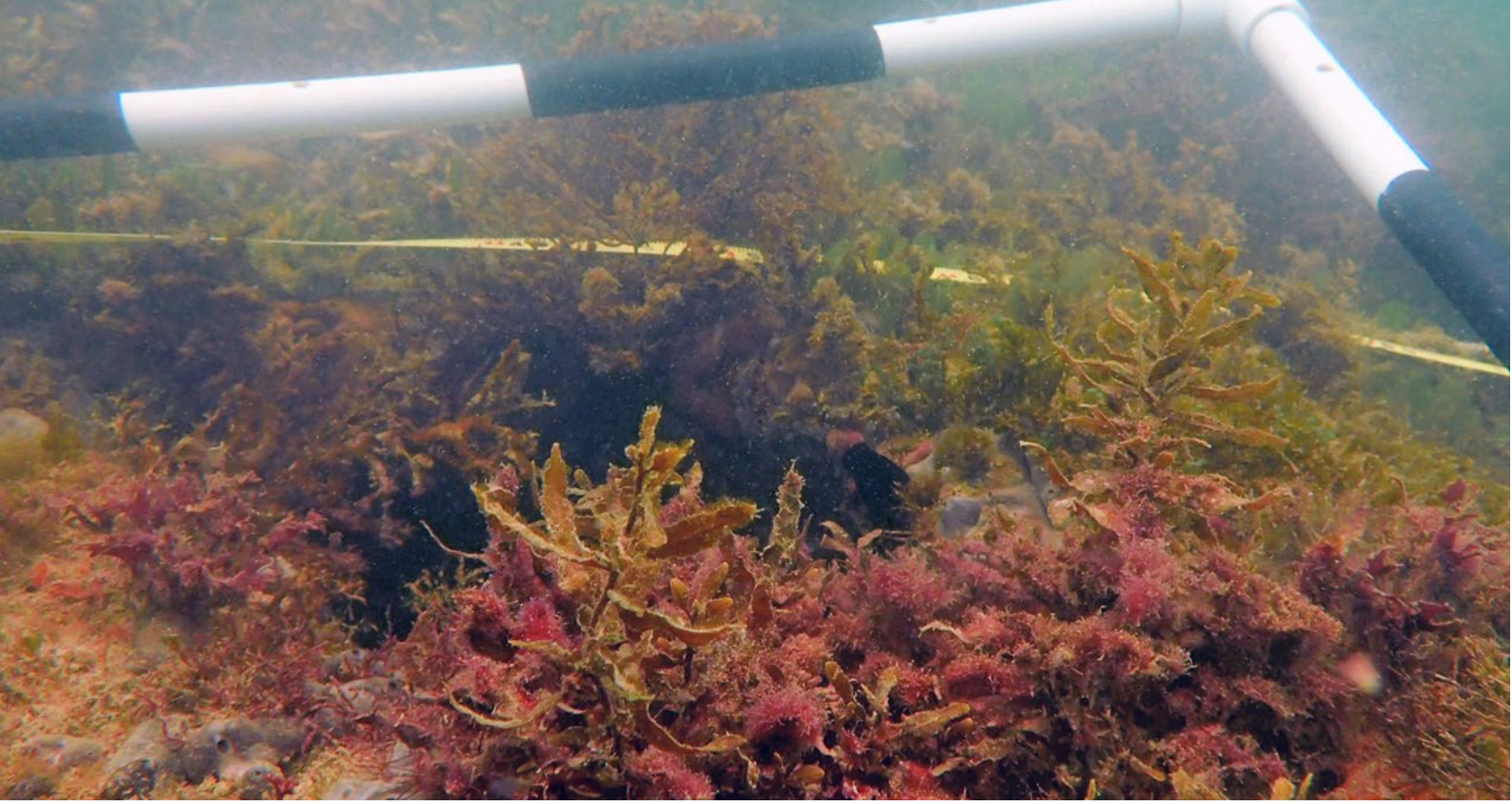

TECHNICAL & COMMERCIAL PROPOSAL

Collier County 2026 Nearshore Hardbottom Biological Monitoring and SAV Surveys

Submitted To:

Collier County

Collier County – Coastal Zone Management Section
Capital Project Planning, Impact Fees and Program Management Division
2685 South Horseshoe Drive, Unit 103
Naples, Florida 34104

Submitted By:

CSA

CSA Ocean Sciences Inc.
8502 SW Kansas Avenue
Stuart, Florida 34997
Office: 772-219-3000

TRACE CERTIFIED

PEC SAFETY SafeGulf AUTHORIZED PROVIDER

ISO 9001:2015 CERTIFIED COMPANY

Prepared For:	Prepared By:
Collier County; Coastal Zone Management Andrew Miller, P.E. Manager Collier County Coastal Zone Management Tel: 239-252-2966 Andrew.Miller@colliercountyfl.gov	**CSA Ocean Sciences Inc.** Lystina Kabay Market Director Ports and Coastal Sciences Tel: 724-316-4225 lkabay@conshelf.com CSA Ref: 82980

The following version(s) of this proposal have been issued:

Ver.	Date	Description	Approved	
01	26 February 2026	Collier County 2026 NSHB Biological Monitoring and SAV Surveys	OG	FA KP
02	20 March 2026	Revisions to costing structure from day rate to lump sum and task number reduction	JP	FA
03	27 March 2026	Revision to project-specific terms	LK	FA
04	30 March 2026	Revise pricing table	LK	FA
05	24 April 2026	Addition of Attachment C – lump sum price breakdown	LK	FA

TABLE OF CONTENTS

PROPOSAL OVERVIEW

CSA Ocean Sciences Inc. (CSA) is pleased to submit this combined revised proposal to Collier County for professional environmental monitoring services. The proposal presents the scope of work, level of effort, project schedules, and costs and billing schedule for nearshore hardbottom biological monitoring and four submerged aquatic vegetation (SAV) surveys to be conducted in 2026:

1. Post-construction hardbottom biological monitoring survey for the Collier County Beach Nourishment Project and Wiggins Pass Maintenance Dredging and Navigation Improvement Project (**Sections 1.0** and **5.0**);
2. Post-construction SAV survey for maintenance dredging of Doctors Pass (**Sections 2.1** and **5.0**);
3. Post-construction SAV survey for maintenance dredging of Wiggins Pass (**Sections 2.2** and **5.0**);
4. Post-construction SAV survey for maintenance dredging of Water Turkey Bay (**Sections 2.3** and **5.0**); and
5. Pre-construction SAV survey for maintenance dredging of Collier Creek (**Sections 2.4** and **5.0**).

1.0 NEARSHORE HARDBOTTOM BIOLOGICAL MONITORING

1.1 INTRODUCTION

CSA is submitting this revised proposal to conduct post-construction nearshore hardbottom biological monitoring for the Collier County Beach Nourishment Project and Wiggins Pass Maintenance Dredging and Navigation Improvement Project in summer 2026. This proposal was prepared at the request of Mr. Chris D'Arco, Project Manager, Collier County Coastal Zone Management (CZM), for a pending work order from Collier County under Professional Services for Nearshore Hardbottom Monitoring, Contract # 22-8015, and is based on the scope of work for the Collier County Beach Nourishment Project Final Hardbottom Biological Monitoring Plan (BMP; Revised 2018). This project will conform to all associated Florida Department of Environmental Protection (FDEP) permits, which include Collier County Beach Renourishment FDEP Permit No. 02222355-001-JC and U.S. Army Corps of Engineers (USACE) Permit No. SAJ–2004-08754; Doctors Pass Maintenance Dredging FDEP Permit No. 0235740 001 JC and USACE Permit No SAJ 2004 09754; Wiggins Pass Maintenance Dredging and Navigation Improvement FDEP Permit No. 0142538 001 JC; and USACE Permit No. SAJ-2004-07621.

1.2 SCOPE OF WORK

The following monitoring tasks will be completed in the Collier County Beach Nourishment and Wiggins Pass Maintenance Dredging Project areas (**Figure 1-1**). FDEP will be notified when the survey will begin and when it is completed, which will take place during the hardbottom monitoring season (between 1 May and 30 September 2026), as required in the BMP.

Administration, Travel, Mobilization, and Demobilization

CSA will provide project administration including oversight, coordination, and management of the 2026 nearshore hardbottom monitoring program. CSA's Project Manager will be responsible for supervising all managerial aspects of the project and will have oversight of all team personnel, including field scientists (i.e., subject matter experts), authors, editors, and technical and support staff. CSA will plan and execute project activities to meet required deadlines and/or client needs for the project. CSA will provide a two-person scientific dive team and required equipment; Collier County will provide a vessel, captain, and one diver to support the survey.

CSA will hold a kickoff meeting with Collier County staff to review the scope of work and confirm project logistics prior to beginning mobilization efforts for the monitoring survey. This meeting will take place either virtually, or on day one of the survey prior to the commencement of field activities. Once a notice to proceed (NTP) has been issued by Collier County, initial mobilization activities will be conducted prior to commencement of field activities. Initial mobilization activities will require approximately 2 weeks from issuance of the NTP and will include internal Health, Safety, Security, and Environment (HSSE) requirements, a kickoff meeting, equipment and personnel preparation, and coordination with Collier County on acceptable weather and sea state conditions. CSA will mobilize a two-person scientific dive team and required equipment during ideal sea-state and weather windows to perform surveys. Travel to and from Collier County is anticipated to take one half-day each way and includes appropriate per diem according to Class B travel. This task will also include a hotel for the first night in Naples, Florida.

CSA will confirm visibility of nearshore waters with Collier County staff prior to mobilization to minimize travel back and forth during monitoring due to poor sea state and water visibility, but several mobilizations and demobilizations may be necessary to complete all tasks depending on weather and sea conditions. Therefore, collectively, we have included the provision for up to three round trips for the CSA team and associated per diem for the field effort.

Field Monitoring Survey

CSA will provide two American Academy of Underwater Sciences (AAUS)-certified marine biologists from our Ports and Coastal Sciences group to join the Collier County field team as subject matter experts; they will guide the field activities and data collection processes.

A total of 35 permanent monitoring transects (50-m length) established in 2006 by Coastal Planning and Engineering (CP&E) during the original baseline pre-construction survey and those installed in 2018 for the Wiggins Pass nearshore hardbottom monitoring will be re-surveyed in 2026. The transects are located among five beach segments: Wiggins Pass, three transects (R-18+900, R-19+400, and R-20); Vanderbilt, seven transects (R-21+080 to R-29+700); Pelican Bay, six transects (R-31+480 to R-38+380); Park Shore, ten transects (R-43+550 to R-55); and Naples Beach, nine transects (R-58+300 to R-65) (**Figure 1-1**). The transect endpoints supplied by Collier County as listed in Table 1 of the BMP (FDEP, 2018) will be utilized to re-survey all transects. Each transect will be re-occupied by extending a 50-m tape along the transect length and aligning it with permanent markers installed on the seafloor and maintained during previous monitoring surveys. Impacts to permanent transect markers from storms and local activity are common and will be evaluated by the field team in terms of urgency to repair. General transect maintenance, as needed during the 2026 field survey, is included in this proposal.

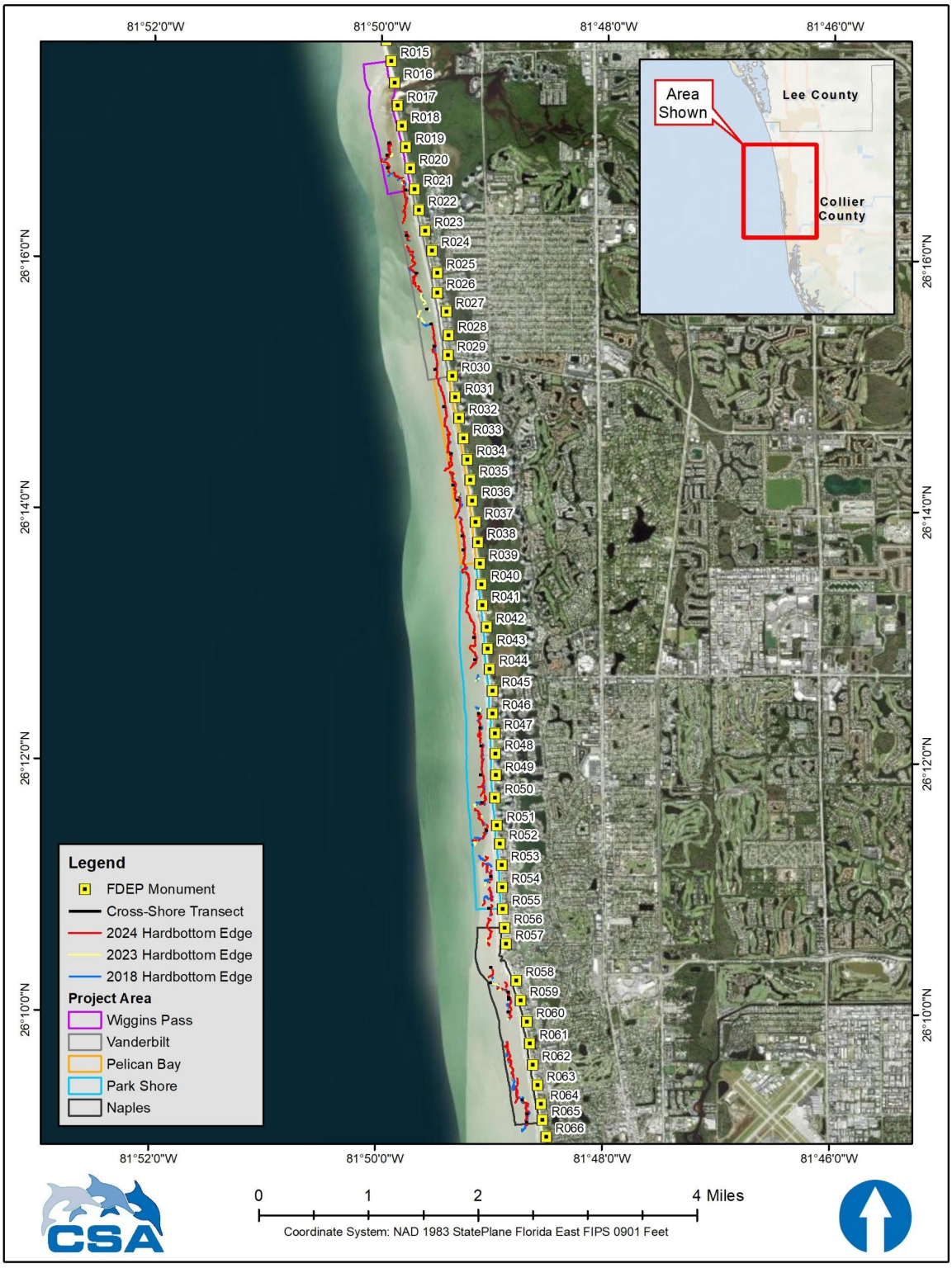

Figure 1-1. Collier County Beach Nourishment and Wiggins Pass Maintenance Dredging Project areas located along the coastline near Naples, Florida. FDEP = Florida Department of Environmental Protection.

Transect Monitoring

Along each 50-m transect, the team will conduct line-intercept and interval sediment depth measurements, survey 11 benthic quadrats, collect photos of quadrats and corals within them, and conduct a coral census as described in the BMP. Quantitative video of each transect will be recorded at 40-cm height off the bottom at a slow 4 m min^{-1} speed for archival purposes. A high definition (HD) video camera with video lights and two lasers mounted to converge at a point 40 cm from the camera will be used to ensure that divers maintain the appropriate height off the bottom. Sediment depth measurements will be made at 1-m intervals along the entire length of the transect with a marked stainless-steel ruler inserted up to 30 cm into the sediment. A delineation of hardbottom and sand cover will be made by meter of coverage along the transect, and the maximum height of hardbottom at the start of each transect will be recorded.

A 0.5 m × 0.5 m quadrat (0.25 m^2 area) will be sampled at 11 individual hardbottom locations spaced approximately every 5 m along the transect in the same locations as those established and surveyed during the pre-construction monitoring survey. Quadrats containing 100% sand (due to cover by sand) will be surveyed and included in the dataset.

Within each quadrat, percent cover by major benthic taxonomic groups as defined in the BMP will be visually estimated. These include macroalgae, coralline algae, turf algae, sponges, hydroids, wormrock, octocorals, stony corals, bryozoans, and tunicates as well as percent cover of various abiotic substrate types. Within each quadrat, sediment depth will be measured at five haphazardly selected positions and the maximum vertical relief of hardbottom will be measured. Still digital photographs of each quadrat will be collected at the time of survey.

Nearshore Hardbottom Edge Surveys

The nearshore hardbottom edge (landward edge of hardbottom) seaward of the equilibrium-toe-of-fill (ETOF) of each beach segment will be mapped during the survey. Two divers will swim the nearshore hardbottom edge located immediately west of the ETOF, recording video of the edge and associated benthic community. The team will tow a buoy equipped with radio telemetry and a differential global positioning system (DGPS) antenna, which wirelessly transmits continuous buoy/diver positions to HYPACK hydrographic survey software on board the vessel. The HD video camera will be held at an oblique angle and filming will occur simultaneously with the DGPS buoy to allow geo-referencing. If the continuous nearshore hardbottom edge crosses east of the ETOF toward land, mapping will continue until the edge of hardbottom ends.

Analysis, Reporting, and Deliverables

Data deliverables and reports will be provided to Collier County and FDEP, with conformance to requirements and schedules set forth in the 2018-approved BMP. A comprehensive raw data deliverable will be provided on an external hard drive and will include all video and photo data, Excel spreadsheets of quadrat data, draft GIS shapefiles, and *.pdf copies of field data sheets, as applicable. Notification of survey completion will be made by letter or email to the FDEP Joint Coastal Permit Compliance Officer.

As per Contract # 22-8015, nearshore hardbottom monitoring results will be compiled into a summary report. The report will discuss the results of the 2026 Nearshore Hardbottom Monitoring Survey and include general comparisons with annual monitoring survey results from the 2018 (CSA 2019a), 2019 (CSA, 2019b), 2020 (CSA, 2020), 2021 (CSA, 2022a), 2022 (CSA, 2022b), 2023 (CSA, 2024), 2024 (CSA, 2025a), and 2025 (CSA, 2025b) nearshore hardbottom monitoring reports; however, the primary focus of the statistical analysis will compare the baseline dataset from 2018 to the most current year (i.e.,

2026 survey). The 2026 monitoring report will include graphs, tables, and statistical analyses of collected data. Geo-referenced maps showing hardbottom along transects and the nearshore hardbottom edge will be included. All reports will be provided in electronic format with a hardcopy upon request.

Raw data deliverables listed below will be submitted within 45 days of completion of the survey as required by FDEP:

- All video and photo data;
- Excel spreadsheets of quadrat data;
- Draft GIS shapefiles: pipeline corridors, nearshore hardbottom edge, and transects; and
- *.pdf copies of field data sheets.

Nearshore Hardbottom Monitoring Survey Report and deliverables listed below will be submitted within 90 days of completion of survey as required by FDEP:

- Graphs, tables, statistical analyses, and results/discussion of collected data;
- Geo-referenced maps showing hardbottom along transects and the nearshore hardbottom edge;
- Selected qualitative imagery of transects and nearshore hardbottom edge; and
- Provided in electronic format, *.pdf, with hardcopy on request.

Note that all project related tasks will be completed within 270 days of the NTP from Collier County.

2.0 Submerged Aquatic Vegetation Surveys

2.1 Doctors Pass Post-Dredging Submerged Aquatic Vegetation Survey

2.1.1 Introduction

Maintenance dredging of Doctors Pass, located in Collier County, Florida, is authorized under FDEP Permit No. 0331817-004-JM. To fulfill the monitoring requirements for Specific Condition 1.i. of the Permit, pre- and post-construction SAV surveys are required in accordance with the approved Seagrass BMP (Chicago Bridge and Iron [CB&I], 2015) and with special consideration for the FDEP Guidance on Surveys for Potential Impacts to SAV, dated 08 December 2020. The plan calls for the monitoring of all SAV resources within the influence of the project area before and after construction. This proposal focuses survey activities in Moorings Bay only; SAV has previously been observed across all of Moorings Bay immediately north of the Inlet at Doctors Pass, where the tidal flood shoal forms.

The maintenance dredging project is designed to remove approximately 45,000 cubic yards of sand from the navigational channels in Doctors Pass and place the dredged material in a nearshore area south of the inlet (R-58A -457 ft to R-58 +500 ft) and at Lowdermilk Park (R-60 to R 61 +816 ft). SAV patches were delineated in close proximity to the dredge footprint and in the adjacent mixing zone within Moorings Bay during the pre-construction survey of 2025 (CSA, 2025). The dredge template has been previously permitted and dredged repeatedly.

FDEP does not require mitigation or monitoring for direct impacts to SAV resources located within the previously permitted dredge footprint; however, maintenance dredging may result in secondary impacts to SAV resources within the adjacent mixing zone, including sedimentation and sediment sloughing. To determine potential secondary impacts to SAV from Doctors Pass maintenance dredging, pre- and post-construction, biological monitoring of SAV located within the mixing zone (400 ft buffer from the dredge area) is required. This post-construction survey will determine the geographic extent, composition, and density of SAV within the project area.

This proposal provides the scope of work and updated level of effort for a potential 2026 post-construction SAV survey for Doctors Pass maintenance dredging.

2.1.2 Scope of Work

The following monitoring tasks will be completed in the areas of SAV within the mixing zone of the Doctors Pass dredge template in Moorings Bay (**Figure 2-1**). FDEP will be notified when the survey will begin and when it is completed, which will take place during the SAV growing season (prior to 30 September 2026), as required in the Seagrass BMP.

Administration, Project Management, Travel, Mobilization, and Demobilization

All project management, HSSE duties and requirements, and internal kickoff meeting are included in this task. A single mobilization/demobilization of CSA equipment and personnel to and from our headquarters in Stuart, Florida is included in this task. This task will also include hotel and per diem for the first night in Naples, Florida.

Field Survey – Mapping, Qualitative and Quantitative Characterization

This task includes labor for two CSA AAUS divers in the field and data analysis activities described below, equipment, hotel, and per diem. This proposal assumes that Collier County will provide the vessel and operator to augment the CSA survey team.

<u>In situ SAV Delineation and Qualitative Assessment</u>

Divers (or snorkelers) will visually locate the edge of the SAV patches and follow the edge of the community while towing a 'Garmin GLO' GPS receiver, communicating via Bluetooth to Esri ArcGIS Field Maps application. The Esri ArcGIS Field Maps application collects and displays spatial data in real time and is also able to determine total acreage of outlined areas (SAV patches) on the fly.

During SAV delineation, biologists will visually assess species composition, above-ground biomass, epiphyte coverage, and overall condition of each SAV patch within the mixing zone survey area.

<u>In situ Delineation Acreage Analysis</u>

Diver track lines recorded during the in situ SAV delineation will be assessed for quality assurance/quality control (QA/QC) by a CSA GIS analyst and the total acreage of each SAV patch observed will be extrapolated and reported to the field team prior to the commencement of the quantitative survey. These data will determine the level of effort for the quantitative survey based on the requirements of the Seagrass BMP.

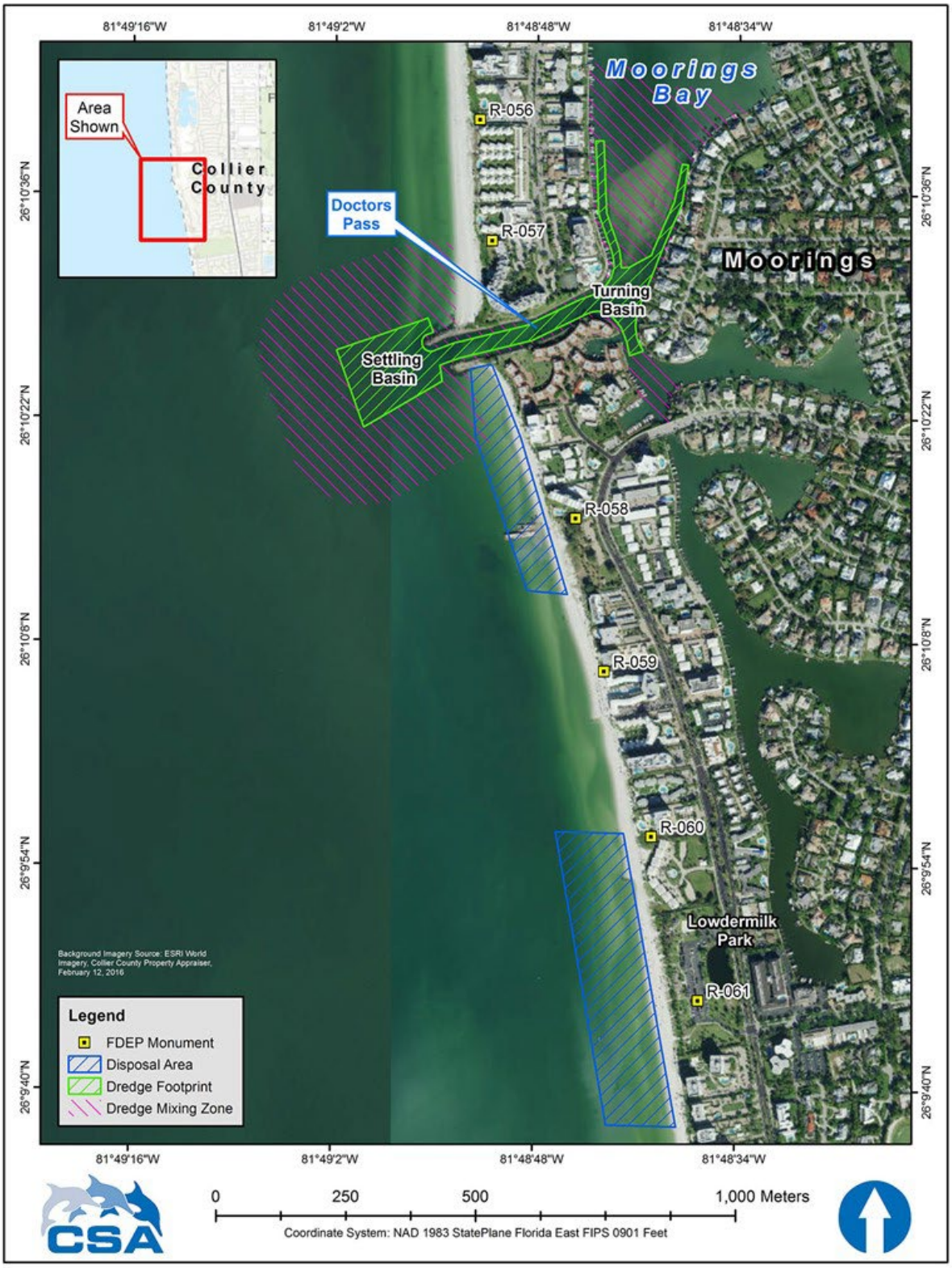

Figure 2-1. Doctors Pass Maintenance Dredging area project overview. FDEP = Florida Department of Environmental Protection.

Quantitative Survey

To characterize the cover of SAV within the project area, biologists will document the Braun-Blanquet (BB) cover-abundance scores for SAV within haphazardly placed 0.25 m^2 (0.5 m × 0.5 m) to 1.0 m^2 (1.0 m × 1.0 m) quadrats within each SAV patch. As per the Seagrass BMP requirements, the number and size of quadrats per SAV patch will be determined based on the total acreage of each patch from the in situ SAV delineation and will reflect 10% of the total area (acreage) if less than 1 acre. Quadrat placement will not be biased (e.g., towards the center of the patches or densest areas) but will be distributed throughout the patch to characterize the cover. A percent cover score will be reported for each SAV taxa present within the quadrats. Additionally, the total cover of all SAV taxa present within the quadrats will be reported.

Analysis, Data Deliverables, and Reporting

This task includes QA/QC of all data collected, areal calculations of seagrass coverage, and preparation of the data deliverable as per the Seagrass BMP. Raw data, including all video and photo data; excel spreadsheets of SAV survey data; GIS shapefiles outlining SAV patch delineation and areas of interest; and *.pdf copies of field data sheets, will be submitted to FDEP within 30 days of completion of the survey. A post-construction seagrass monitoring report will be prepared and submitted to the FDEP for review within 90 days of completion. The report shall include statistical analyses to evaluate whether the cover of SAV changed significantly over time (i.e., statistical comparison of pre- and post-construction BB score data). Summary statistics (means and standard deviation values) shall be presented, and the report shall provide a comparison of pre- and post-construction BB cover values for each patch and for the entire survey area. The results section of the monitoring report shall include: the frequency of occurrence (proportion of all quadrats that contained seagrass), the density (mean percent cover for all quadrats sampled), and the abundance (mean percent cover for only those quadrats containing seagrass). Additionally, if available at the time of the post-construction seagrass survey, the as-built survey data will be evaluated to determine if any dredging occurred beyond the authorized footprint or if sloughing of materials occurred. If analysis indicates that unpermitted impacts to seagrass habitat have resulted from the project, FDEP shall be notified by Collier County.

Note that all project related tasks will be completed within 270 days of the NTP from Collier County.

2.2 WIGGINS PASS POST-DREDGING SUBMERGED AQUATIC VEGETATION SURVEY

2.2.1 Introduction

Maintenance dredging of Wiggins Pass, located in Collier County, Florida, is authorized under FDEP Permit No. 0142538-008-JC. To fulfill the monitoring requirements of the Permit, pre- and post-construction SAV surveys are required with special consideration for the FDEP Guidance on Surveys for Potential Impacts to SAV, dated 08 December 2020. The plan calls for the monitoring of all SAV resources within the influence of the project area before and after construction. This pre-construction survey focuses on the biological monitoring of SAV located within the mixing zone (400 ft buffer from the dredge area) in the Wiggins Pass Navigation Channel only (**Figure 2-2**) and will determine the geographic extent, composition, and density of SAV within the Wiggins Pass project area. This proposal provides the scope of work and updated level of effort for a potential 2026 post-construction SAV Survey for Wiggins Pass maintenance dredging.

SAV surveys in Water Turkey Bay Channel from Wiggins Pass and into Water Turkey Bay are discussed in **Sections 2.3** and **5.0**.

Figure 2-2. Wiggins Pass Maintenance Dredging Project Area shown in green relative to the Water Turkey Bay Channel survey area shown in red.

2.2.2 Scope of Work

The following monitoring tasks will be completed in the areas of SAV within Wiggins Pass, as requested by Mr. D'Arco. FDEP will be notified when the survey will begin and when it is completed, which will take place during the SAV growing season (prior to 30 September 2026), as required in the Seagrass BMP.

Administration, Project Management, Travel, Mobilization, and Demobilization (Wiggins Pass)

All project management, HSSE duties and requirements, and an internal kickoff meeting are included in this task. A single mobilization/demobilization of CSA equipment and personnel to and from our headquarters in Stuart, Florida is included in this task. This task will also include hotel and per diem for the first night in Naples, Florida.

Field Survey - Mapping, Qualitative and Quantitative Characterization

This task includes labor for two CSA AAUS divers in the field and data analysis activities described below, equipment, hotel, and per diem. This proposal assumes that Collier County will provide the vessel and operator to augment the CSA survey team.

In situ SAV Delineation and Qualitative Assessment

Divers (or snorkelers) will visually locate the edge of the SAV patches and follow the edge of the community while towing a 'Garmin GLO' GPS receiver, communicating via Bluetooth to Esri ArcGIS Field Maps application. The Esri ArcGIS Field Maps application collects and displays spatial data in real time, and is also able to determine total acreage of outlined areas (SAV patches) on the fly.

During SAV delineation, biologists will visually assess species composition, above-ground biomass, epiphyte coverage, and overall condition of each SAV patch within the navigation channel.

In situ Delineation Acreage Analysis

Diver track lines recorded during the in situ SAV delineation will be assessed for QA/QC by a CSA GIS analyst and the total acreage of each SAV patch observed will be extrapolated and reported to the field team prior to the commencement of the quantitative survey. These data will determine the level of effort for the quantitative survey based on the requirements of the Seagrass BMP.

Quantitative Characterization

To characterize the cover of SAV within the project area, biologists will document the BB cover-abundance scores for SAV within haphazardly placed 0.25 m^2 (0.5 m × 0.5 m) to 1.0 m^2 (1.0 m × 1.0 m) quadrats within each SAV patch. As per the Seagrass BMP requirements, the number and size of quadrats per SAV patch will be determined based on the total acreage of each patch from the in situ SAV delineation and will reflect 10% of the total area (acreage) if less than 1 acre. Quadrat placement will not be biased (e.g., towards the center of the patches or densest areas) but will be distributed throughout the patch to characterize the cover. A percent cover score will be reported for each SAV taxa present within quadrats. Additionally, the total cover of all SAV taxa present within the quadrats will be reported.

Analysis, Reporting and Deliverables

This task includes QA/QC of all data collected, areal calculations of seagrass coverage, and preparation of the data deliverable as per the Seagrass BMP. Raw data, including all video and photo data; excel spreadsheets of SAV survey data; GIS shapefiles outlining SAV patch delineation and areas of interest; and *.pdf copies of field data sheets, will be submitted to FDEP within 30 days of completion of the survey. A post-construction seagrass monitoring report will be prepared and submitted to the FDEP for review within 90 days of completion. The report shall include statistical analyses to evaluate whether the cover of SAV changed significantly over time (i.e., statistical comparison of pre- and post-construction BB score data). Summary statistics (means and standard deviation values) shall be presented, and the

report shall provide a comparison of pre- and post-construction BB cover values for each patch and for the entire survey area. The results section of the monitoring report shall include: the frequency of occurrence (proportion of all quadrats that contained seagrass), the density (mean percent cover for all quadrats sampled), and the abundance (mean percent cover for only those quadrats containing seagrass). Additionally, if available at the time of the post-construction seagrass survey, the as-built survey data will be evaluated to determine if any dredging occurred beyond the authorized footprint or if sloughing of materials occurred. If analysis indicates that unpermitted impacts to seagrass habitat have resulted from the project, FDEP shall be notified by Collier County. Note that all project related tasks will be completed within 270 days of the NTP from Collier County.

2.3 WATER TURKEY BAY-POST-DREDGING SUBMERGED AQUATIC VEGETATION SURVEY

2.3.1 Introduction

Per the County's request, a supplemental post-construction SAV survey will be conducted on the east and west sides of the Water Turkey Bay Channel from Wiggins Pass and into Water Turkey Bay (**Figure 2-2**, red polygon). This pre-construction survey will be conducted following the methods described in the 2020 Post-Construction Survey conducted by Earth Tech Environmental, LLC (2020) to monitor the SAV located within the mixing zone (50-m buffer from the dredge area). This pre-construction survey will determine the geographic extent, composition, and density of SAV within the project area. This proposal provides the scope of work and level of effort for a potential 2026 pre-construction SAV Survey of Water Turkey Bay Channel from Wiggins Pass and into Water Turkey Bay.

2.3.2 Scope of Work

The following monitoring tasks will be completed in the areas of SAV within Water Turkey Channel and Bay, as requested by Mr. D'Arco. FDEP will be notified when the survey will begin and when it is completed, which will take place during the SAV growing season (prior to 30 September 2026). This post-construction survey will be conducted following similar methods described in the 2020 Post-Construction Survey conducted by Earth Tech Environmental, LLC (2020).

Administration, Project Management, Travel, Mobilization, and Demobilization

All project management, HSSE duties and requirements, and an internal kickoff meeting are included in this task. A single mobilization/demobilization of CSA equipment and personnel to and from our headquarters in Stuart, Florida is included in this task. This task will also include hotel and per diem for the first night in Naples, Florida.

Field Survey - Mapping, Qualitative, and Quantitative Characterization

This task includes labor for two CSA AAUS divers in the field and data analysis activities described below, equipment, hotel, and per diem. This proposal assumes that Collier County will provide the vessel and operator to augment the CSA survey team.

In situ SAV Delineation and Qualitative Assessment

Divers (or snorkelers) will visually locate the edge of the SAV patches and follow the edge of the community while towing a 'Garmin GLO' GPS receiver, communicating via Bluetooth to Esri ArcGIS Field Maps application. The Esri ArcGIS Field Maps application collects and displays spatial data in real time, and is also able to determine total acreage of outlined areas (SAV patches) on the fly.

During SAV delineation, biologists will visually assess species composition, above-ground biomass, epiphyte coverage, and overall condition of each SAV patch within the navigation channel.

In situ Delineation Acreage Analysis

Diver track lines recorded during the in situ SAV delineation will be assessed for QA/QC by a CSA GIS analyst and the total acreage of each SAV patch observed will be extrapolated and reported to the field team prior to the commencement of the quantitative survey. These data will determine the level of effort for the quantitative survey.

Quantitative Characterization

Data Collection within Seagrass Patches

To characterize the cover of SAV within seagrass patches in the project area, biologists will document the BB cover-abundance scores for SAV within haphazardly placed 0.25 m^2 (0.5 m × 0.5 m) to 1.0 m^2 (1.0 m × 1.0 m) quadrats within each SAV patch. As per the Seagrass BMP requirements, the number and size of quadrats per SAV patch will be determined based on the total acreage of each patch from the in situ SAV delineation and will reflect 10% of the total area (acreage) if less than 1 acre. Quadrat placement will not be biased (e.g., towards the center of the patches or densest areas) but will be distributed throughout the patch to characterize the cover. A percent cover score will be reported for each SAV taxa present within quadrats. Additionally, the total cover of all SAV taxa present within the quadrats will be reported.

Data Collection within Continuous Seagrass Beds

Temporary transects will be utilized to monitor portions of the Water Turkey Bay survey area where continuous and extensive seagrass beds have previously been characterized. Transects will be positioned 50 meters apart from one another, oriented perpendicular to the dredge area, with a total length of 50 meters, which is the planned width of the mixing zone. The survey vessel will position start buoys at the channel end of each transect, using the vessel navigation system, and surveyors will set out the full 50 m length, guided by compass headings. This proposal assumes that a total of 10 transects will be monitored within the continuous seagrass beds in Water Turkey Bay, similar to the pre-construction survey. Along the transects, line-intercept surveys will be conducted to document the linear extent (recorded at 1 m intervals, within 10 cm^2 of the meter mark) of each SAV taxon present along each transect, each species present will be reported. For all 10 transects, BB cover-abundance scores for SAV from 0.25 m^2 (0.5 m × 0.5 m) to 1.0 m^2 (1.0 m × 1.0 m) quadrats will be collected at regular intervals (i.e., 0, 5, 10, 15, 20, 30, 40, and 50 m from the channel). A percent cover score will be reported for each SAV taxa present within quadrats and for the total cover of all SAV taxa present within the quadrats.

Analysis, Reporting, and Deliverables

This task includes QA/QC of all data collected, areal calculations of seagrass coverage, and preparation of the data deliverable as per the Seagrass BMP. Raw data, including all video and photo data; excel spreadsheets of SAV survey data; GIS shapefiles outlining SAV patch delineation and areas of interest; and *.pdf copies of field data sheets, will be submitted to FDEP within 30 days of completion of the survey. A post-construction seagrass monitoring report will be prepared and submitted to the FDEP for review within 90 days of completion. The report shall include statistical analyses to evaluate whether the cover of SAV changed significantly over time (i.e., statistical comparison of pre- and post-construction BB score data). Summary statistics (means and standard deviation values) shall be presented, and the report shall provide a comparison of pre- and post-construction BB cover values for each patch and for the entire survey area. The results section of the monitoring report shall include: the frequency of occurrence (proportion of all quadrats that contained seagrass), the density (mean percent cover for all quadrats sampled), and the abundance (mean percent cover for only those quadrats containing seagrass). Additionally, if available at the time of the post-construction seagrass survey, the as-built survey data will be evaluated to determine if any dredging occurred beyond the authorized footprint or if sloughing of materials occurred. If analysis indicates that unpermitted impacts to seagrass habitat have resulted from the project, FDEP shall be notified by Collier County. Note that all project related tasks will be completed within 270 days of the NTP from Collier County.

2.4 COLLIER CREEK SUBMERGED AQUATIC VEGETATION SURVEY

2.4.1 Introduction

Per the County's request, a supplemental pre-construction SAV survey will be conducted in Collier Creek, Collier County, Florida. This pre-construction survey focuses on the biological monitoring of SAV located within the mixing zone (at least 50 ft buffer from the dredge area) (**Figure 2-3**) and will determine the geographic extent, composition, and density of SAV within the Collier Creek maintenance dredging project area. This proposal provides the scope of work and updated level of effort for a potential 2026 pre-construction SAV Survey.

Figure 2-3. General dredge area for the Collier Creek Maintenance Dredging Project shown in red.

2.4.2 Scope of Work

The following monitoring tasks will be completed in the areas of SAV within Collier Creek, as requested by Mr. D'Arco. FDEP will be notified when the survey will begin and when it is completed, which will take place during the SAV growing season (prior to 30 September 2026), as required in the Seagrass BMP.

Administration, Project Management, Travel, Mobilization, and Demobilization

All project management, HSSE duties and requirements, and an internal kickoff meeting are included in this task. A single mobilization/demobilization of CSA equipment and personnel to and from our headquarters in Stuart, Florida is included in this task. This task will also include hotel and per diem for the first night in Naples, Florida.

Field Survey – Mapping, Qualitative, and Quantitative Characterization

This task includes labor for two CSA AAUS divers in the field and data analysis activities described below, equipment, hotel, and per diem. This proposal assumes that Collier County will provide the vessel and operator to augment the CSA survey team.

In situ SAV Delineation and Qualitative Assessment

Divers (or snorkelers) will visually locate the edge of the SAV patches and follow the edge of the community while towing a 'Garmin GLO' GPS receiver, communicating via Bluetooth to Esri ArcGIS Field Maps application. The Esri ArcGIS Field Maps application collects and displays spatial data in real time, and is also able to determine total acreage of outlined areas (SAV patches) on the fly.

During SAV delineation, biologists will visually assess species composition, above-ground biomass, epiphyte coverage, and overall condition of each SAV patch within the navigation channel.

In situ Delineation Acreage Analysis

Diver track lines recorded during the in situ SAV delineation will be assessed for QA/QC by a CSA GIS analyst and the total acreage of each SAV patch observed will be extrapolated and reported to the field team prior to the commencement of the quantitative survey. These data will determine the level of effort for the quantitative survey based on the requirements of the Seagrass BMP.

Quantitative Characterization

To characterize the cover of SAV within the project area, biologists will document the BB cover-abundance scores for SAV within haphazardly placed 0.25 m^2 (0.5 m × 0.5 m) to 1.0 m^2 (1.0 m × 1.0 m) quadrats within each SAV patch. As per the Seagrass BMP requirements, the number and size of quadrats per SAV patch will be determined based on the total acreage of each patch from the in situ SAV delineation conducted and will reflect 10% of the total area (acreage) if less than 1 acre. Quadrat placement will not be biased (e.g., towards the center of the patches or densest areas) but will be distributed throughout the patch to characterize the cover. A percent cover score will be reported for each SAV taxa present within quadrats. Additionally, the total cover of all SAV taxa present within the quadrats will be reported.

Analysis and Data Deliverables

This task includes QA/QC of all data collected, areal calculations of seagrass coverage, and preparation of the data deliverable as per the Seagrass BMP. A formal pre-construction report is not required, but the pre-construction deliverables shall include a georeferenced map of SAV boundaries based on the reconnaissance and mapping survey tasks, representative photographs, a description of site conditions based on the qualitative assessment and the data for the quantitative assessment of cover-abundance (and line intercept surveys, if required).

Raw data deliverables listed below will be submitted within 45 days of completion of survey as required by FDEP:

- All video and photo data;
- Excel spreadsheets of SAV survey data;
- Draft GIS shapefiles: SAV patch delineation and areas of interest; and
- *.pdf copies of field data sheets.

Note that all project related tasks will be completed within 270 days of the NTP from Collier County.

3.0 PROJECT SCHEDULE

Within 14 days of receiving the NTP from Collier County and weather permitting, CSA will mobilize the necessary equipment and travel to Naples, Florida the afternoon prior to the field surveys. The Nearshore Hardbottom and SAV Surveys will be conducted between 1 May and 30 September 2026. All raw data deliverables will be compiled and delivered to FDEP within 45 days of the completion of field work with the final report to follow no later than 90 days from the completion of the nearshore hardbottom biological monitoring survey. All project related tasks will be submitted within 270 days of NTP from Collier County.

The project schedule will be updated twice per month (bi-weekly) by the Project Manager with input from Collier County and FDEP (as appropriate) to provide the status of task activities and track critical milestones and precedent activities. This bi-weekly update will identify any problems early and enable corrective action to be taken quickly. An updated schedule may be provided to Collier County on request. CSA will convene a project kickoff meeting with Collier County staff and field survey participants to ensure that all necessary personnel, field equipment, and monitoring standard operating procedures are in place prior to initiation of the survey. To minimize mobilization and travel costs, CSA will endeavor to conduct the Nearshore Hardbottom Monitoring survey in conjunction with the SAV surveys as weather conditions permit.

4.0 CSA OVERVIEW AND CLIENT ASSURANCE

CSA is a well-established marine environmental consultancy with extensive experience supporting offshore and nearshore projects for energy, infrastructure, and government clients worldwide. This proposal is supported by CSA's consistent performance record, mature project execution processes, and long-standing commitment to safe, compliant operations. CSA integrates scientific expertise, field operations, and data management through standardized procedures and internal reviews to support technically defensible and reliable deliverables.

CSA maintains a strong Health, Safety, Security, Environment, and Quality (HSSEQ) culture across all activities. Our management systems include ISO 9001:2015 certification, alignment with ISO 45001:2018 and ISO 14001:2015 standards, and participation in industry-recognized safety and compliance programs, including ISNetworld, DISA Global Solutions, PEC SafeLandUSA/SafeGulf, and the American Association of Underwater Sciences (AAUS). CSA Trinidad's HSSEQ performance has also been independently recognized, including AMCHAM T&T National Excellence in HSE Awards and Energy Chamber of Trinidad and Tobago Excellence in Safety recognition.

CSA's continued high performance is demonstrated by a Total Recordable Incident Rate (TRIR) of 0.0, an Experience Modifier Rate (EMR) of 0.87, and multiple third-party safety recognitions. CSA's HSSEQ framework is applied consistently to our personnel, operations, and in-country partners.

CSA is committed to the ethical conduct of business and requires the same standards from its subcontractors. Subcontractors are subject to pre-engagement due diligence, including HSE, anti-corruption, and sanctions screening, and are required to comply with CSA's Code of Conduct. CSA's ethical and compliance framework is further supported by its membership in TRACE International, which provides third-party risk assessment tools and resources to support anti-bribery and corruption compliance. CSA's TRACE membership is subject to annual renewal and ongoing compliance requirements (ID: TC4082-1854).

5.0 RATES, RESOURCES, AND BILLING SCHEDULE

For the 2026 Nearshore Hardbottom Biological Monitoring and SAV Surveys, all tasks previously performed under a Time-and-Materials basis have been restructured to a lump sum format. This approach provides greater efficiency for invoicing, payment, and project management while maintaining the same technical scope, personnel qualifications, and level of effort required to successfully execute the program.

All labor and equipment rates are applied in accordance with the Professional Services for Nearshore Hardbottom Monitoring Contract (No. 22-8015) executed between CSA and Collier County on March 1, 2024, which remains valid for a three-year term. The applicable labor and equipment rate schedules are provided in **Attachments A** and **B**, respectively.

The proposed level of effort included in this pricing has been developed based on CSA's eight consecutive years of implementing this program for Collier County. This historical experience allows us to accurately forecast staffing, equipment needs, field duration, and reporting requirements, resulting in a pricing structure that is both competitive and realistic.

The project costs to complete the 2026 Nearshore Hardbottom Biological Monitoring and SAV Surveys are listed in **Table 5-1** by task and are a lump sum to be billed monthly once an NTP is for the project is provided. Additionally, a breakdown of the costs summarized in **Table 5-1** by task can be found in **Attachment C**.

Table 5-1. Rates and invoicing schedule for the 2026 Nearshore Hardbottom Biological Monitoring and SAV Surveys.

Task #	Project Task Name	Terms	Total	Payment Schedule
Task 1	Nearshore Hardbottom Biological Monitoring	Lump Sum	$ 163,939	Monthly; Net 30
Task 2	Doctors Pass Post-Dredging SAV Survey	Lump Sum	$ 44,092	Monthly; Net 30
Task 3	Wiggins Pass Post-Dredging SAV Survey	Lump Sum	$ 30,671	Monthly; Net 30
Task 4	Water Turkey Bay Post-Dredging SAV Survey	Lump Sum	$ 34,352	Monthly; Net 30
Task 5	Collier Creek Pre-Dredging SAV Survey	Lump Sum	$ 20,552	Monthly; Net 30
		TOTAL	**$293,606**	

SAV = submerged aquatic vegetation

Task 1 (lump sum) includes:

- Project management, dive plan preparation, internal kickoff meeting, testing and mobilization of field equipment, travel expenses (transportation, fuel, accommodations, per diem), labor during travel to and from project location, and demobilization of field equipment following surveys;
- Nearshore hardbottom field monitoring survey including labor for two CSA AAUS divers, equipment, fuel, accommodations, and per diem; and

- All labor for data deliverable preparation (including hard drive and shipping), data analysis, and report preparation and transmittal on a lump sum basis.

Task 2 (lump sum) includes:

- Project management, dive plan preparation, internal kickoff meeting, testing and mobilization of field equipment, travel expenses (transportation, fuel, accommodations, per diem), labor during travel to and from project location, and demobilization of field equipment following surveys, and communication with FDEP and Collier County regarding the survey;

- Field Survey including labor for two CSA AAUS divers, equipment, fuel, accommodations, and per diem; and

- All labor for data deliverable preparation (including hard drive and shipping), data analysis, and report preparation.

Task 3 (lump sum) includes:

- Project management, dive plan preparation, internal kickoff meeting, testing and mobilization of field equipment, travel expenses (transportation, fuel, accommodations, per diem), labor during travel to and from project location, and demobilization of field equipment following surveys, and communication with FDEP and Collier County regarding the survey;

- Field Survey including labor for two CSA AAUS divers, equipment, fuel, accommodations, and per diem; and

- All labor for data deliverable preparation (including hard drive and shipping), data analysis, and report preparation.

Task 4 (lump sum) includes:

- Project management, dive plan preparation, internal kickoff meeting, testing and mobilization of field equipment, travel expenses (transportation, fuel, accommodations, per diem), labor during travel to and from project location, and demobilization of field equipment following surveys, and communication with FDEP and Collier County regarding the survey;

- Field Survey including labor for two CSA AAUS divers, equipment, fuel, accommodations, and per diem; and

- All labor for data deliverable preparation (including hard drive and shipping), data analysis, and report preparation.

Task 5 (lump sum) includes:

- Project management, dive plan preparation, internal kickoff meeting, testing and mobilization of field equipment, travel expenses (transportation, fuel, accommodations, per diem), labor during travel to and from project location, and demobilization of field equipment following surveys, and communication with FDEP and Collier County regarding the survey;

- Field Survey including labor for two CSA AAUS divers, equipment, fuel, accommodations, and per diem; and

- All labor for data deliverable preparation (including hard drive and shipping) and transmittal; no report is required for a pre-dredging survey (only post-dredging).

6.0 PROPOSAL TERMS

CSA's commercial proposal price calculations are based on "General Terms" and "Project-specific Terms," listed below. If Collier County (Client) has issues with any of these items, CSA reserves the right to modify its original proposal price in order to meet any cost increase arising from any modifications requested by the Client.

General Terms

- This proposal is based on the information provided to CSA by the client or client's affiliate. If any of the basis information is incorrect, CSA will not be responsible and could result in a price adjustment.
- Any unspecified costs for third-party services will be billed at cost plus 5%.
- Payment is due within 30 days of invoice unless otherwise stated in contract.
- Any delay in payment according to the contractual payment terms may postpone the services and delay CSA's contractual requirement to fulfill any timeline or schedule.
- Any change in the scope of work must be in writing and may result in a change in price. Any such changes must be agreed to and follow CSA's Change Order process as per the contract.
- A mutually agreed upon contract must be executed by both parties before any commencement of work, unless CSA receives a formal "Notice to Proceed" from Client. A "Notice to Proceed" must be in writing and guarantee payment for all work performed prior to a fully executed contract.

Project-specific Terms

- CSA will not be held responsible for any costs or delays incurred due to Government actions, decisions, or rulings when all necessary measures to address all transparent Government concerns have been taken.
- Approvals and authorizations requiring longer than the time estimated that may delay field efforts could result in additional costs to the Client.
- Once CSA receives a formal "Notice to Proceed" or a fully executed contract, a mobilization time of 2 weeks will be required before beginning any on-site work.
- **All field survey tasks assume that the following will be provided by Collier County at no cost to CSA**:
    - Vessel and captain;
    - One diver
    - Scuba tanks;
    - HYPACK navigation;
    - Transect maintenance equipment and supplies; and
    - A vessel log of daily activities.
- In the event that a Collier vessel, operator, and diver is not available to conduct the survey, CSA will provide a team and equipment to augment the survey at an additional cost to Collier County via change order.

- Nearshore Hardbottom Reporting - Project technical details, pertinent information necessary for the Project Description section of the report, and other requirements will be provided to CSA in a timely manner.
- Nearshore Hardbottom Deliverables - Price for preparation of deliverables is based on a single draft and final document addressing a single set of comments for each deliverable.
- Doctors Pass Deliverables - Price for preparation of deliverables is based on a single draft and final document addressing a single set of comments for each deliverable. All deliverables will be provided electronically to FDEP, pricing for preparation of hard copies to Client is not included.
- Wiggins Pass Deliverables - Price for preparation of deliverables is based on a single draft and final document addressing a single set of comments for each deliverable. All deliverables will be provided electronically to FDEP, pricing for preparation of hard copies to Client is not included.
- Water Turkey Bay Deliverables - Price for preparation of deliverables is based on a single draft and final document addressing a single set of comments for each deliverable. All deliverables will be provided electronically to FDEP, pricing for preparation of hard copies to Client is not included.
- Collier Creek Deliverables - Price for preparation of deliverables is based on a single data deliverable directly to FDEP. Please note that no report is required for the pre-construction SAV surveys. All deliverables will be provided electronically to FDEP, pricing for preparation of hard copies to Client is not included.

Vessel and Client Vessel

- Any vessel that will carry CSA employees may be subject to a vessel inspection by CSA or its designee; failure to meet government and/or industry safety standards may result in rejection by CSA of that vessel; CSA will be held harmless for any costs and schedule change arising from rejection of any vessel failing this inspection.

- For Client-supplied vessels, the following will be provided at no charge to CSA:
    - Suitable space, power, water, and fuel supply on board/on shore for diving and related equipment;
    - Navigation services and deck operation assistance; and
    - Any materials and consumables required for the work not specifically mentioned in the proposal/quotation/tender.
- Price assumes 12 h day^{-1} operations.

Equipment

- If any proposed equipment becomes unavailable, CSA reserves the right to substitute or replace the equipment with suitable alternatives. If substituting the equipment results in a price increase, then CSA will be required to obtain Client written approval prior to placing said equipment in service.

Positioning and Geophysical

- This proposal assumes that Collier County will provide all navigation and positioning services during the field effort with light technical support from CSA if necessary.

7.0 LITERATURE CITED

CB&I Chicago Bridge and Iron. 2015. Collier County, Doctors Pass Maintenance Dredging Final Seagrass Biological Monitoring Plan for permits: Collier County Beach Nourishment Project, FDEP permit no. 0331817-004-JM. FDEP file no. 0331817-001-JC. Approved April 16, 2015. Tallahassee Florida. 5 pp.

CSA Ocean Sciences Inc. 2018a. Doctors Pass Maintenance Dredging June 2018 Pre-Dredge Seagrass Survey Report. Aug. 17, 2018. 25 pp. Submitted to Collier County CZM and FDEP in fulfillment of permit required monitoring for Collier County Beach Nourishment Project FDEP Permit No. 0331817-004-JM. FDEP file no. 0331817-001-JC

CSA Ocean Sciences Inc. 2018b. Doctors Pass Maintenance Dredging September 2018 Post-Dredge Seagrass Survey Report. Nov. 28, 2018. 25 pp. Submitted to Collier County CZM and FDEP in fulfillment of permit required monitoring for Collier County Beach Nourishment Project FDEP Permit No. 0331817-004-JM. FDEP file no. 0331817-001-JC

CSA Ocean Sciences Inc. 2019a. Collier County Beach Nourishment Project 2018 Hardbottom Monitoring Report. Jan. 16, 2019. 131 pp. Submitted to Collier County CZM and FDEP in fulfillment of permit required monitoring for Collier County Beach Nourishment Project FDEP Permit No. 0331817-004-JM and the Wiggins Pass Navigation Channel Expansion and Maintenance Project FDEP Permit 0142538-008-JC.

CSA Ocean Sciences Inc. 2019b. Collier County Beach Nourishment Project 2019 Hardbottom Monitoring Report and Supplemental Post Red Tide Survey. Nov. 25, 2019. 70 pp. Submitted to Collier County CZM and FDEP in fulfillment of permit required monitoring for Collier County Beach Nourishment Project FDEP Permit No. 0331817-004-JM and the Wiggins Pass Navigation Channel Expansion and Maintenance Project FDEP Permit 0142538-008-JC.

CSA Ocean Sciences Inc. 2020. Collier County Beach Nourishment Project 2020 Hardbottom Monitoring Report. Dec. 16, 2020, 140 pp. Submitted to Collier County CZM and FDEP in fulfillment of permit required monitoring for Collier County Beach Nourishment Project FDEP Permit No. 0331817-004-JM and the Wiggins Pass Navigation Channel Expansion and Maintenance Project FDEP Permit 0142538-008-JC.

CSA Ocean Sciences Inc. 2022a. Collier County Beach Nourishment Project 2022 Hardbottom Monitoring Report. in pres., 140 pp. For submittal to Collier County CZM and FDEP in fulfillment of permit required monitoring for Collier County Beach Nourishment Project FDEP Permit No. 0331817-004-JM and the Wiggins Pass Navigation Channel Expansion and Maintenance Project FDEP Permit 0142538-008-JC.

CSA Ocean Sciences Inc. 2022b. Collier County Beach Nourishment Project 2021 Hardbottom Monitoring Report. Jan. 2022, 140 pp. For submittal to Collier County CZM and FDEP in fulfillment of permit required monitoring for Collier County Beach Nourishment Project FDEP Permit No. 0331817-004-JM and the Wiggins Pass Navigation Channel Expansion and Maintenance Project FDEP Permit 0142538-008-JC.

CSA Ocean Sciences Inc. 2024. Collier County Beach Nourishment Project 2023 Hardbottom Monitoring Report. Jan. 2024, 133 pp. For submittal to Collier County CZM and FDEP in fulfillment of permit required monitoring for Collier County Beach Nourishment Project FDEP Permit No. 0331817-004-JM and the Wiggins Pass Navigation Channel Expansion and Maintenance Project FDEP Permit 0142538-008-JC.

CSA Ocean Sciences Inc. 2025a. Collier County Beach Nourishment Project 2024 Hardbottom Monitoring Report. Feb. 2025, 113 pp. For submittal to Collier County CZM and FDEP in fulfillment of permit required monitoring for Collier County Beach Nourishment Project FDEP Permit No. 0331817-004-JM and the Wiggins Pass Navigation Channel Expansion and Maintenance Project FDEP Permit 0142538-008-JC.

CSA Ocean Sciences Inc. 2025b. Collier County Beach Nourishment Project 2025 Hardbottom Monitoring Report. Oct. 2025, 139 pp. For submittal to Collier County CZM and FDEP in fulfillment of permit required monitoring for Collier County Beach Nourishment Project FDEP Permit No. 0331817-004-JM and the Wiggins Pass Navigation Channel Expansion and Maintenance Project FDEP Permit 0142538-008-JC.

Earth Tech Environmental LLC. 2020. Wiggins Pass and Water Turkey Bay Channel Maintenance Dredging Project Post-Construction Seagrass Monitoring Report. Nov. 17, 2020. FDEP permit no. 0142538-008 JC. 121 pp.

Florida Department of Environmental Protection. 2018. Collier County, Florida Hardbottom Biological Monitoring Plan for permits: Collier County Beach Nourishment Project, FDEP permit no. 0331817-004-JM and Wiggins Pass Navigation Channel Expansion and Maintenance Project, FDEP permit no. 0142538-008-JC. July 2018. Tallahassee Florida. 17 pp.

Florida Department of Environmental Protection. 2020. Guidance on Surveys for Potential Impacts to Submerged Aquatic Vegetation. December 8, 2020. Tallahassee Florida. 28 pp.

ATTACHMENTS

Provided with V5 of this proposal

Attachment A – CSA Total Labor Rate Schedule for Collier County

Attachment B – CSA Field Equipment Rate Schedule for Collier County

Attachment C – Proposal Cost Breakdown

End of submittal. Left intentionally blank.