May 9, 2024

Meeting Agenda and Notice

Coastal Advisory Committee (CAC)
Thursday, May 9, 2024– 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
2024 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

April 11, 2024

VII. Staff Reports

Extended Revenue Report

VIII. New Business

1. ES - Marco Island Tigertail

- Cat A Application Marco Island Tigertail Sand Dollar Maintenance-revised

2. 2024.04.29 - ES - BCC - 2024 Hardbottom

- CSA Work Order

IX. Old Business

X. Announcements

XI. Committee Member Discussion

XII. Next Meeting Date/Location

June 13, 2024 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.

MINUTES OF THE COLLIER COUNTY
COASTAL ADVISORY COMMITTEE MEETING

Naples, Florida
April 11, 2024

LET IT BE REMEMBERED, the Collier County Coastal Advisory Committee, in and for the County of Collier, having conducted business herein, met on this date at 1 P.M. in REGULAR SESSION at Administrative Building F, 3rd Floor, Collier County Government Complex, Naples, Florida, with the following members present:

CHAIRMAN:	Joseph Burke
VICE CHAIRMAN:	David Trecker
	Councilor Erik Brechnitz
	Jim Burke
	Councilman Raymond Christman (Zoom)
	Dr. Judith Hushon
	Steve Koziar
	Robert Raymond
	Robert Roth

ALSO PRESENT:

Andy Miller, Director, Coastal Zone Management
Colleen Greene, Assistant County Attorney
Maria Becerra, liaison, Coastal Zone Management

Anyone in need of a verbatim record of the meeting may request a copy of the video from the Communications, Government & Public Affairs Division or view it online at http://tv.colliergov.net/

I. Call to Order

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

II. Pledge of Allegiance

The Pledge of Allegiance was recited.

III. Roll Call

Roll call was taken and a quorum of eight was established in the board room; a ninth joined later via Zoom.

Mr. Miller announced that Councilman Christman said he'd call in on Zoom.
[Councilman Christman participated via Zoom but due to technical problems, was unable to speak/unmute until 1:20 p.m.]

IV. Changes and Approval of Agenda

Mr. Miller said the speaker, Eugene Wordehoff, will be added as 5.a.

Councilor Brechnitz said he thought this was supposed to be when the City of Marco Island would make a presentation on the Tigertail Critical Wildlife Area.
Mr. Miller said it was initially scheduled for this month, but we were backed up trying to get documents processed through city and county employees. Since it was a FY25 grant application, meaning construction wouldn't happen until November, we decided to push it out.

Vice Chair Trecker moved to approve the agenda, as amended. Second by Councilor Brechnitz. The motion passed unanimously, 8-0.

V. Public Comments

Patrick J. Wack, president of the Seagate HOA, provided a map and told the CAC:

- He's joined by Brett Cohan, who represents Naples Cay, a 300-unit condominium complex.
- Our community is about Clam Bay.
- We're here to request that the CAC discuss implementing a review of the inlet management of the clam blight at its next meeting. This is imperative for a couple of reasons.
- Over many years, the system's water quality and ecological health have been degrading. The waters have been impaired for many years and are not improving.
- These waters feed our canals and waterfront and are very important to us. The bay also is home to ecotourism activities, including kayaking, fishing, mangrove adventures, some of which are touted on the Naples Grande (Beach Resort) website.
- This degradation is partly due to inadequate tidal flushing, which in turn, according to our experts, is due to a sub-optimal dredging paradigm. These hydrodynamics have led to more frequent dredges every two years over the last six to seven years versus five to six years under a different plan that was previously

implemented.

- Dredging issues are compounded by beach re-nourishment programs, which should probably more adequately be considered for inlet stability.
- The next issue is the shoaling of the channel from the bay to the gulf, where the inlet jogs to the right or left depending on your orientation.
- This has led to some impediments for watercraft access, whether non-motorized, motorized, recreational, commercial or emergency. The bay is a navigable waterway with riparian rights.
- The final issue is there isn't just one county entity responsible for the entire inlet bay system. Per county ordinance, Pelican Bay Services Division's mandate applies to the dredging of the inlet and the health of the mangroves, not to the bay in its entirety or directly to water quality.
- County taxpayers would be spending $500,000-$600,000 every two years to dredge the inlet.
- We think that Seagate, Naples and county taxpayers deserve an independent engineering examination of a more comprehensive inlet management program that considers dredging, water quality and beach re-nourishment.

Mr. Roth told the CAC:

- Patrick spoke at our last meeting and indicated he'd like to reach out to CAC members, which he did.
- He and Patrick met and visited Clam Pass. Visually, the water looks pretty compromised.
- The issue, as presented, is that the county has some testing programs that indicate there's an issue with nutrients, which he could see just by looking at the water. It's pretty green and is not supposed to be that way.
- He supports what Mr. Wack is asking, that the CAC get more involved.

Vice Chair Trecker said he lives in Clam Bay and was involved through the Pelican Bay Services Division for many years with dredging and the responsibility for maintaining the bay, the inner bays and the mangroves. He appreciates what Mr. Wack is saying. … It silts up fast. There are no jetties, nothing to prevent the silting and it's been an ongoing problem. It's paid for by taxpayers, not Pelican Bay, and we're delighted with that.

Dr. Hushon told the CAC:

- She lived in Naples Cay for many years and lived next door to this.
- One problem was when they dredged, they put the dredging spoils back into Clam Pass, straight into some channels. They've used the dredging back there and they slip off and go back into the channel.
- She suggests not putting dredging materials back into Clam Pass.
- The other problem is when they replenish beaches to the north. The sand tends to move from north to south. That's the pattern. When the Pelican Bay Services Division replenishes beaches to the north, that sand moves down, right into the pass and that's also part of the problem.
- A jetty may be needed to keep it from going in with the next high tide, which is what happens.
- We've looked at it a lot over the years. One of the things they did was to put the dredgings inside the pass to create a straight channel from the shore back to the bay. That was a mistake.

Vice Chair Trecker said he doesn't want to preempt one of the major reasons for the meeting, but they have to reconsider hardening. If we had been able to put in rock jetties, he can't say this wouldn't have occurred, but it wouldn't have occurred as frequently as it does now. Judy is right. That's a long-standing problem.

Mr. Burke asked if the Seagate HOA met with the Pelican Bay Services Division.
Mr. Wack said we met with them extensively, as recently as a few weeks ago.
Mr. Burke noted that until a few years ago, the county was dredging every five to six years.

Mr. Wack replied:

- Was that dredging just for the pass, the inlet, or was it the whole?
- The first dredge went past the drawbridge, the second dredge didn't go that far, but it went farther than it does today.
- That addressed some problems. Shoals had a deeper and wider profile, its orientation was different, so many things were changed with the new plan when Pelican Bay Services Division took over.
- It needs a fresh, independent look and not from the engineer who wrote the plan.

Vice Chair Trecker said it seems like a reasonable request.

Councilor Brechnitz asked what another independent opinion about the area and potential solutions would cost.
Chairman Burke noted that Mr. Wack mentioned he'd retained an independent, third party.

Mr. Wack replied:

- We retained a coastal engineer but he hasn't done a rigorous amount of work. He's looked at and is familiar with the system.
- He looked at the past plan, the current plan and is considered knowledgeable enough to offer his assessment.
- The county spent $500,000-$600,000 every two years on this and $150,000-$200,000 could be well spent in addition to that to address serious concerns and rights that we have for water quality and reasonable access to the Gulf.
- We're not going to let that die.

Councilor Brechnitz said he's concerned about the process and if we're required by state law to do a request for proposals.

Attorney Greene explained:

- Some procedural steps need to happen before procurement and before this board can take action.
- This board can vote to bring this back as an action item. This is just public comment so you can't take action today.
- If the majority of the board agrees, you can ask staff to bring back an item that we can discuss and take action on, including reviewing procedural matters and the requirement for competitive solicitation, if that's appropriate.

Mr. Roth said that sounds fair.

A discussion ensued and the following points were made:

- If this is a Google Earth photo, it shows blue tarps on roofs so it's probably from after Hurricane Ian.
- We need to know when this was taken and get a new photo.
- There are historic photos of this area going back eons.
- It's not appropriate to make a decision based on an old photo.
- We can put this on the agenda as a New Business item next month and discuss it.
- We need to vote on whether this should be studied.
- Vice Chair Trecker said he was canoeing in that area and it's still impaired. This photo may not be completely up to date, but the problems are indicated here.
- We need to instruct staff to give us up-to-date information and then put it on the agenda.
- This involves three tasks: The county does beach renourishment, leading to more frequent dredging or silting of that inland. There a better solution. A jetty would enhance or mitigate some of that.
- The dredging is a second issue and whether there have been improvements. If we're just taking the dredge, putting it on the slope and it's washing back in, there are probably nutrients in that sediment, and we're returning those nutrients back into the soil or into the pass.
- The third issue is water quality.
- A fourth issue is that during the last Army Corps of Engineers call, Clam Pass is now a topic with the Corps, which is coming here next week.
- They need to see the area to the left of the area they're coming to inspect.
- We can get their input on this next week.
- The Pelican Bay Services Division has some legal responsibility for this.

Attorney Greene said the Pelican Bay MSTU ordinance about the Pelican Bay Services Division (PBSD) says it has the sole responsibility for advising the county on dredging and maintaining Clam Pass for the purpose of enhancing the health of the affected mangroves for us and will manage such activities for the county. This needs to be reviewed before we can bring it back to determine whether the CAC can take action based on the ordinance's language.

Chairman Burke asked for her recommendation.
Attorney Greene recommended giving staff the opportunity to review the new information. She and Andy will look at it and will have to speak to the PBSD. She'll work with the County Attorney on the language in the ordinance and bring back a recommendation in May or June. We need to review this because this is just public comment and you can't take action. It requires additional information.

Mr. Roth noted that Attorney Greene mentioned the responsibility involving mangroves, but it didn't say anything about water quality, which is a new issue that occurred after that agreement.
Attorney Greene said yes, this is 2013 language: Dredging and maintaining Clam Pass for the purpose of enhancing the health of the affected mangrove forest and will manage such activities for the county. It says "sole responsibility" so we need time to review this issue.

Chairman Burke said if the county is doing something with beach renourishment that's impacting the inlet, we need to know that.
Mr. Roth said the county possibly has a role in causing this problem.

Mr. Miller noted that Councilman Christman is online and is having trouble with being able to speak or unmuting himself. He told him to try calling in on another phone number.
Councilor Brechnitz said if he's there, this is an item he may be interested in.

Chairman Burke made a motion to allow Councilman Christman to participate via Zoom due to an extraordinary circumstance. Second by Councilor Brechnitz. The motion passed unanimously, 8-0.

Chairman Burke made a motion to instruct county staff to determine the CAC's ability to be involved in Clam Pass issues. Second by Councilor Brechnitz. The motion passed unanimously, 8-0.

a. Presentation: Effects of wastewater reuse irrigation pollution [Eugene Wordehoff]

- Mr. Roth introduced Eugene Wordehoff and his wife, Nanette Rivera:
- They're retired engineers and residents of Marco Island who are very active in water quality.
- Nanette is on the Conservancy's board and was on the Big Cypress board.
- He asked them to give a presentation because the CAC discussed advanced-wastewater treatment at the last meeting and about three years ago, the CAC made a recommendation to county commissioners but no action was taken. That could be due to a lack of follow-up on our part.
- It's time to focus on that issue. Gene is the perfect person to present this because he's studied it in Collier County.

Mr. Wordehoff told the CAC:

- He and Nanette have been working on water quality for four years, first on Marco Island and then we expanded the focus to Collier County, so we've got extensive information to share.
- Last year, Collier County Pollution Control recommended that reducing nutrients at the source is a more cost-effective way to improve water quality than going downstream, specifically converting existing wastewater plants to advanced-wastewater treatment (AWT) technologies.
- That's the first time they ever made that recommendation so that's monumental and it's coming from a county department.
- We support that idea and we're going to show you why that's a good idea.
- That's the same recommendation the CAC made three years ago and now an internal county department, Pollution Control, made the same recommendation.
- The scope of this project is to unify sewage treatment plants that have AWT management.
- On Marco Island, we compared re-use phosphorus to the water body's oxygen over a five-year period and after looking at other possible causes, we found a strong correlation showing that phosphorus has the strongest relationship with oxygen depletion.
- Phosphorus stimulates algae growth. We see that all over Marco Island and the algae decomposition consumes the oxygen, so when we have less phosphorus in

the re-use water, we have more oxygen.

- This shows the response risk profile over a two-year period. In early 2020, due to the "COVID excursion," phosphorus dropped to almost zero. The hypothesis is that COVID hit, people were afraid, they stayed home and didn't come to Marco Island and they weren't flushing their toilets. But there is still a demand for reuse water so they blended raw water and that blend takes the phosphorus concentration down.
- Whatever the reason, it went down.
- In November 2019, we were at reuse of about 4 mg/L (mg per liter) for phosphorus and oxygen was about 5 mg/L and in December and January, the reused phosphorus went way down and oxygen went way up.
- When we started reintroducing phosphorus, the oxygen went back down, so this is a direct link between phosphorus in the reused water and the water body's oxygen. This is our evidence.
- The question is: Is the wastewater-treatment plant in violation of its permit? This is a standard clause in the permit. The permit does not relieve the permittee from liability and penalties for harm or injury to human health or welfare, animal or plant life.
- He believes the permit is being violated.
- As a comparison, we looked at Monroe County's mainland, south of Everglades City, where there are no people, no sewage, no fertilizer and there's excellent water quality there, while we see depleted water quality in Collier County.
- For an area with no people or nutrient sources, we see excellent water quality. That's our control group. We looked at Collier County in total and the green bar at the top is Monroe County's mainland.
- Over the last 20 years, that's maintained very healthy levels of oxygen but if you look at the blue line, Collier County, that shows we've lost 30% of our oxygen in the last 20 years.
- When you split that by the watersheds, you see there's a hypoxic dead zone that's formed in Collier County with oxygen levels below 1 mg/L, so it's a dead zone and hardly anything can live there.
- If you compare relative numbers, the Marco reuse has a level of nitrogen, 8 mg/L, and phosphorus is about 4 mg/L.
- The advanced-wastewater treatment plants, the Grizzle-Figg Statute (403.086) specifies limits of 3 mg/L and 1 mg/L, so you'll hear that repeatedly. We're way above the Grizzle-Figg limits and why is that? We have a permit that allows that. It's legal and the wastewater-treatment plant is operating within its permit.
- If you look at the Marco numeric nutrient criterion (NNC), our water quality standards, they're much lower than that. The reuse nitrogen is 27 times what's allowed in the water body. The reuse phosphorus is 80 times what's allowed, so we're dumping highly concentrated pollutants into our water body.
- Last is the limits of technology, which can strip phosphorus and nitrogen out of that reuse water to meet the NNC limits. We can basically polish that reuse water.
- The Florida Keys has advanced-wastewater treatment up and down the Keys.

Dr. Hushon asked if they looked at natural sources of phosphorus in the soil. There's a very strong phosphate mine north of us and our soil contains a fair amount. When you do a typical soil sample, you get fairly high phosphorus levels, which is not something you'd expect, but it's true here. We also have phosphorus in our soil so we always tell people

never to put phosphate fertilizers down. Do you know where your phosphate is coming from? Is it all fertilizer or is it also from soil?

Mr. Wordehoff said in Monroe County's mainland, they have phosphorus in that pristine area, but at trace levels. It exists everywhere, but at trace/minute levels. As you come up into Collier County, it builds and when you get to Marco Island, the only source for phosphorus is the wastewater-treatment plant. They've banned fertilizer all year long. There's only one source.

A discussion ensued and the following points were made:

- The COVID excursion conundrum is our smoking gun. That's when we found the linkage. When we look at the literature, this is commonly known. We haven't discovered new scientific principles. This is a known, common problem and we have it on Marco Island.
- Marco Island has been through this issue and hired Jacobs Engineering to study the reuse water and their conclusion was that any adverse effect by reuse water was *de minimis*, primarily because single-family residents don't have access to reuse water, which is used on the golf courses and road medians on Marco Island. But others believe it's the cause of the phosphorus.
- Harper never did water testing but issued a long report. (Dr. Harvey H.) Harper didn't test the water in a dozen different spots like Marco did with the Jacobs report.
- Mr. Wordehoff said when the Harper and Jacobs reports were done, we thought we were impaired for total nitrogen and we were historically, but we came out of that impairment. What's happened over the last two years is data they don't have in those reports. We've got more current data and it shows oxygen started dropping in 2019 and dropped 65% in August.
- The main reason was the sewage treatment plant dropped the nitrogen in the reuse water by 50%, which solved the problem. We've been out of impairment for nitrogen for three years.
- Marco Island was not impaired per FDEP (Florida Department of Environmental Protection) for anything, but our oxygen is dropping. We're still on the list and will be delisted because oxygen has been dropping.
- If it continues this trend for two years, we will be impaired for low oxygen.
- The City of Naples has had advanced-wastewater treatment for decades. Everglades City converted to advanced-wastewater treatment with its new plant upgrade and all the Florida Keys have advanced-wastewater treatment.
- Lee County has four large AWT plants in Fort Myers but many Lee County plants aren't AWT.
- In Collier County, there's no phosphorus control in the five main plants. They're dumping phosphorus by the ton. It's a potent pollutant.
- Not only is Lee County going in that direction now, but Sarasota and Tampa did. That was the solution to Tampa Bay years ago, reducing nitrogen and phosphorus in the wastewater. That's where the Grizzle-Figg Statute came from 44 years ago. The numbers could be a lot better with today's technology.
- There's money in the state budget for wastewater treatment every year. Would upgrading sewage treatment plants be eligible for those grants? It seems the answer would be yes. We just need to do it.
- On Marco Island, we could virtually pay for the upgrade with an FDEP grant, the

Innovative Technologies Portal.

- We did an RFI (Request for Information) about a year ago and received a couple of valid responses. The estimate for the upgrade was about $3 million for Marco Island, which could 100% be covered by an Innovative Technologies Grant. There also are operating costs for the lease that would be offset because there are cost reductions: 90% of chlorine in that process goes away and that would save Marco $140,000 a year, so there's a return on investment associated with operating AWT.
- That's in addition to the default injection.
- We're not talking about Marco Island, we're talking about Collier County and its own recommendation. We need staff to look further into this to answer those questions.
- In January, the CAC decided we'd get more educated on the topic. The CAC Water Quality Subcommittee made this recommendation about three years ago.
- The CAC ordinance was amended in 2019 to include the opportunity to review water-quality issues.
- There's a confluence of interest here and the CAC Water-Quality Subcommittee should be focused on this.

Mr. Christman told the CAC:

- He's been listening to the meeting since 1 p.m., but couldn't unmute for 20 minutes.
- He's heard about this through other sources and as a member of the Water Quality Subcommittee, which recommended this.
- The work has continued since then and this is clearly within our purview. It's a central issue for coastal water quality in Collier County.
- We're talking as much about political will as science. County wastewater plants don't have AWT and the world is moving in that direction. It's a question whether county leadership is interested in engaging in an effort to study it and consider how to move these plans to AWT and what the benefits would be.
- If the CAC can help push that along by gathering information and evidence on the benefits, that would be a real service to the residents of Collier County.
- This is definitely within our charter and we should engage in a further discussion to identify what the benefits would be, unless county leadership isn't interested. If they are, the CAC can be of service to them.

Dr. Wordehoff said it would be useful if we conducted a cost-benefit analysis of the Marco Island plant upgrade to AWT. We've got the most information on Marco Island and it's the cleanest test case we'll find because Marco is isolated in the middle of a pristine estuary. Up in Collier County, it gets more complicated. Marco is a single source of pollutants and it's contained within Marco, so a cost-benefit analysis of the Marco upgrade would be useful.

A discussion ensued and the following points were made:

- The CAC Water-Quality Subcommittee recommended the county conduct a cost-benefit analysis on installing advanced-wastewater treatment countywide.
- This would be an appropriate direction for us to take. It's in our purview to make suggestions and recommendations to county commissioners.
- The county ordinance says the CAC can report to the Board of County Commissioners on issues of critical importance that will positively impact Collier

County coastal water quality.

- The CAC has no budget to conduct studies, so it can make a recommendation and work through staff to make a recommendation to the BCC.
- Mr. Wordehoff said he and his wife could work with the CAC on a cost-benefit analysis because we've got all the information and just need to put together a report.
- The concern is that it relates to Marco Island, not the county. We might recommend hiring a consultant to look at the county plans so the county can make a decision. The county might not be able to take Marco Island numbers as evidence and will need an internal review of its own facilities. The CAC might recommend that.
- Historically, upgrades to AWT were very expensive, but with new technologies available today, it's cost effective and reduces the operating costs of sewage treatment plants.
- State money is available if the anyone applies for it.
- This is analogous to what happened at Piney Point. They had a big phosphorus problem and used technology to zero it out. They made it go away.
- That problem was self-resolved but the state took that on its own. They call it polishing the reuse water. You can polish it to the point where 90% of pollutants are removed.

Mr. Roth said he'll make a motion to put it on next month's agenda under New Business and hopes Mr. Wordehoff is available.

Councilman Christman asked him to amend the motion to ensure that the appropriate staff and county leadership who need to be involved in the AWT investigation and late-implementation strategies can provide their views on the feasibility of the county making this a priority going forward.
Mr. Roth agreed and amended his motion, saying he'd leave it up to Mr. Miller to determine the staff and leadership that needs to be involved.

A discussion ensued and the following points were made:

- The next step would be a presentation from a county wastewater treatment employee, something similar to this in terms of what they're doing, what their volume is, the nitrogen and phosphorus levels, etc.
- Not all the water is being reused; some is being discharged.
- Marco data would be useful for correlating that population and population growth. The county's population is increasing dramatically, while Marco is static now.
- The data will show when people aren't here off-season and what the impacts are.
- The last Census showed Marco had more than 17,000 permanent residents and Naples had about 23,000 permanent residents. There's a chance that's undercounted but we can't prove that.
- Our population has not been growing, but our tourist population has been growing dramatically. The way the state works is that we get very little benefit from sales taxes. That 83% of our revenue comes from property taxes so we welcome the tourists because they're great for businesses.
- This costs us money because they're stressing our systems and we're getting no revenue because they happen to be there so it's a problem.
- Marco's total general fund budget is only $26 million, a small amount of revenue

for a city.

- There also are people who disagree with Gene's hypothesis and we need to look at that and see if an opposing opinion can be presented.
- Will AWT make any difference in the Gulf's water? The Caloosahatchee and the Army Corps of Engineers in Lake Okeechobee are sending all this water down and communities like Marco and Naples won't get any better than the water in the Gulf, no matter what's done.
- From a scientific perspective, a study completed a few years ago showed the direct linkage between the nutrients from the Caloosahatchee feeding the red tide, making red tide blooms worse and making them last longer. That's evidence.
- We could do many things here but it won't make any difference because a giant amount of pollutants is coming down into the Gulf.
- If you take Marco as an example, the depleted oxygen is only on Marco Island. When you get off Marco Island, the oxygen returns to normal oxygen. Marco Island City Council chose to start testing offshore so we'd have a more compliant picture and we found that out. That was a very good one.
- We need to move the focus away from Marco. This is clearly a wider problem.
- We need to bring the Collier County wastewater employees here to give a presentation. They may be defensive and say we are meeting current standards.
- Those standards aren't very high.
- The county is following its permits and does a good job of adhering to the permits.
- Collier County needs to take notice that surrounding counties and cities, including the Florida Keys, Lee County, Sarasota and Tampa are doing this, and upgrade its wastewater beyond what the state requires. That's the right thing to do, regardless of the effects of the Caloosahatchee.
- We already have the Collier County Pollution Control & Maintenance's recommendation and should hear from them.

Mr. Roth made a motion to put this on the next available agenda for a discussion about advanced-wastewater treatment so the committee can make a recommendation about AWT to the Board of County Commissioners. Second by Vice Chair Trecker. The motion passed unanimously, 8-0.

Action Item: Mr. Miller will determine what divisions, county leadership and employees should be at the CAC meeting to discuss the AWT issue.

VI. Approval of CAC Minutes

January 11, 2024

Mr. Roth noted that on page 3, when Andy presents the budget, it says the increase of the red line over the blue line was due to the cost of living. He doesn't believe it's due to the cost of living, it's from greater than expected revenues through tourism taxes. He'd strike "cost of living."

Chairman Burke said that on page 5, under his remarks, the sentence about Naval yards should say what was originally proposed.

Dr. Hushon said "we" can be changed to "was" and it would correct that.

[A discussion ensued over how minutes are written, what's said shouldn't be changed, but the minutes taker can check what was said to make any changes.]

Councilor Brechnitz made a motion to approve the January 11, 2024, meeting

minutes, as amended. Second by Vice Chair Trecker. The motion passed unanimously, 8-0.

VII. Staff Reports

Extended Revenue Report dated March 31, 2024

Mr. Miller detailed a PowerPoint presentation and told the CAC:

- The bottom line number is 53.2% above the adopted budget, which has been the trend for a long time.
- The trajectory of the revenues decreased slightly, but it's still above last year, a great year. We'll see what next month brings but the news is good.

VIII. New Business

1. **BCC Executive Summary-2025-2026 Park Shore Renourishment [APTIM]**
Recommendation to approve a work order with APTIM Environmental & Infrastructure Inc. to provide professional engineering services for the 2024-2025 Park Shore Renourishment Project under Contract No. 18-7432-CZ for time and materials not to exceed $102,117.70 and make a finding that this item promotes tourism (Fund 1105, Project No. 90067).

Mr. Miller told the CAC:

- We conduct annual surveys of beaches starting in January through February and we received our draft report, which shows they're in great shape, except for a small portion in Park Shore.
- What we want to do in November or December, after turtle season is over, is re-nourish Park Shore Beach. That requires bringing on our consultant, APTIM Environmental & Infrastructure, to do the design and preparation of our bid documents.
- This is a big rush and we have to get done in November, so we need to get this item approved and get our consultant on board as soon as possible.

[He read the recommendation.]

Vice Chair Trecker asked if this is the tail end of the restoration after the hurricane or is this part of a regular rotation of nourishing beaches?

Mr. Miller explained:

- This is part of our regular rotation. We typically do re-nourishment projects on four- or five-year cycles for the beaches because we don't want to tackle all county beaches at once.
- Park Shore already was next on the list to be re-nourished before the hurricane.
- The tail end of the emergency-berm project in south Naples, still has to be done.
- We'd like to do both construction projects simultaneously to save mobilization costs and impacts to the community.

Vice Chair Trecker asked if it involves a truck haul after the next turtle season.
Mr. Miller said it's a truck haul in November or December 2024.

Councilman Christman moved to recommend approving a work order with APTIM Environmental & Infrastructure Inc. to provide professional engineering services for the 2024-2025 Park Shore Renourishment Project under Contract No.

18-7432-CZ for time and materials not to exceed $102,117.70 and made a finding that this item promotes tourism. Second by Mr. Raymond. The motion passed unanimously, 8-0.

2. **Executive Summary City of Naples Amended TDC Grant Applications**
Recommendation to approve the First Amendment to the Tourist Development Council Grant Agreement based on updated requests from the City of Naples for FY 2023-2024 in the amount of $2,500,000, budget these expenditures, approve any required budget amendments, and make a finding that these expenditures promote tourism.

First Amendment TDC Grant Agreement Pier and maintenance
TDC Grant Application - Beach Maintenance
TDC Grant Application - Lowdermilk Park
TDC Grant Application - Naples Pier

Mr. Miller introduced Chad Merritt, director of the City of Naples' Parks, Recreation & Facilities Department.

Mr. Merritt told the CAC:

- He thanked Andy, Colleen and the team for helping us through this grant application for the past three years. They've been outstanding to work with.
- Naples has three requests. This is the TDC Category A Grant application. What was previously approved was $200,000 for beach maintenance and another $200,000 for the Naples Pier, which changed due to Hurricane Ian.
- Our newest request is for one of our main beach parks, Lowdermilk Park. Hurricane Ian caused pretty extensive damage there, as it did at all of our beach accesses.
- This park is heavily used by county residents, city residents, tourists, etc. We've done a lot of work to bring it back to ensure it was usable within two months after the hurricane. We're looking at doing about $200,000 in maintenance to the parking lot area.
- We have to put some new vegetation back in to replace what we lost. We also had to repair the accesses, restroom facility, concession area and some amenities.
- The new request is $200,000 for this application, which is for Lowdermilk Park maintenance and repairs.
- The second application is the traditional one, Naples Beach Maintenance, which covers beach raking and removing litter. We maintain 40 beach accesses and we have staff who remove trash, etc. The maintenance budget for that item is about $1.3 million.
- We also have to repair beach accesses. The architect's current OPC (opinion of probable construction cost) is about $2 million. This is a very important project because we want to maintain access for city and county residents and this application has traditionally been a $200,000 request but a lot has changed since this application was started and that occurred before he got here.
- We're requesting that we increase the $200,000 to $500,000 due to costs that have increased with inflation and some staffing costs.
- Our third request is the one in the spotlight, the Naples Pier. Originally, we requested $200,000 to help maintain the pier and to help with structural issues for maintaining the restrooms, etc.

- We opened about 50% of the pier, 150 feet, and that was signed off on by the engineers.
- We're awaiting construction bids, which close on May 7. At that time, we'll know the exact amount, but the OPC from the architects and engineers was $20 million.
- This could come in lower or higher. We're trying to put together pieces of how this will look. When we put it out to bid, the timeline is still unknown. We're hoping that we get an award in the summer.
- This will be for the next five years and we're going to be under construction for at least 18 months of that. We don't anticipate many maintenance costs, so we're requesting an advance for five years.
- We also asked to increase the amount from $200,000 to $400,000 during those five years, which is how we calculated the $2 million.
- We all know how iconic the pier is and what it does for tourism. Half of it was closed last year and we still got over 1 million visitors at the pier, with only 150 feet of it open for use. That's significant and shows it's a very important part of this community.
- Since Hurricane Ian, many people have shared their thoughts, feelings and memories about the Naples Pier. It's important to the community, the city and county residents and tourists who come yearly.

Vice Chair Trecker said these are significant numbers and the pier is a big one. Do you have other funding sources?

Mr. Merritt replied:

- We're working with the state and some funding was budgeted but still hasn't been signed off on and approved by the governor, but we're trying to work through that.
- The Naples Pier will be rebuilt before we see any FEMA funding. We have to pay first and it's all reimbursable, just like with TDC funds.
- We're trying to put everything together, but every little bit helps. We felt this would be a good use of TDC funds because it's one of the biggest tourist attractions in the county.

Vice Chair Trecker asked if Naples received state funding, would the TDC funding be restored?
Mr. Merritt said with state funding, when you look at a $20 million project, we're only getting $5 million at the state level. This would be $2.2 million and we're at $7.4 million. We would still have a pretty significant gap to close.

Councilman Christman explained:

- As a City Council member, we've carefully considered and discussed this request.
- Beyond damage to the pier, what we've seen for years is a steady, significant increase of visitation and tourism directed toward our beaches and pier.
- We're a city of 22,000 residents, according to the census, but it's been suggested that we double during season. Now we know it's much more. When Naples Community Hospital was before City Council recently for the expansion of the Heart Institute that we approved, their data showed Naples grew in season to as many as 100,000 people when you consider visitation, seasonal visitation, seasonal residents and tourists.

- When Andy did his report on Tourist Development Revenues, which are pouring into this county, and the tens of thousands of people who get off planes at RSW every month to come here, they're coming to go to beaches. Most beaches are publicly accessible beaches or in the City of Naples, so the pressures are growing.
- These requests come after many City Council discussions with management, city and county staff. They're beyond our interlocal agreement, which provides a relatively modest amount of money yearly to deal with free beach parking access for county residents and other issues.
- We discussed how we can fairly get more money to maintain our beaches and other things. That's why the increase is being sought.
- There's no single bigger tourist icon in Collier County than Naples Pier. We're looking at about $20 million and it probably will be much higher.
- We're hoping to get $5 million from the state budget this year, but the TDC money is very important to us, and everything we do has to be justified in terms of the promotion of tourism.
- There isn't anything that fits that description better than the Naples Pier.

Vice Chair Trecker noted that at the end of one of the additional sheets, there's a question that says if the full amount requested cannot be awarded, can the program or project be restructured to accommodate a lower award and the answer was yes, it could be scaled down.

Mr. Merritt said anytime you're requesting funds, you don't want to receive nothing. The answer is if we can't get $2.2 million, we'd like some amount. That's why we typically don't answer "no." We won't be requesting this grant again for five years, so these funds would be advanced. After this $2.2 million request, we're saying the pier won't need maintenance because it's going to be under construction. We're asking for an advanced amount so we can put it toward the big item, rebuilding.

Dr. Hushon said Lowdermilk Park is now open. Is this above what's been done or is this refilling the coffer for what was spent to get it to where it is today?

Mr. Merritt said this is mainly focused on park maintenance, the parking lot area, which is used by city and county residents, as well as tourists, and we have to do resurfacing and restriping. We still have some work to do, but some of those things may fall under the TDC, which the parking lot does. Replenishing vegetation and repairing the playground that was destroyed also is included, but the playground most likely isn't covered by TDC funds. We've acknowledged that we've got other expenses so we're identifying the ones the TDC could help with.

Attorney Greene noted that these grant funds are not available until they are approved by the Board of County Commissioners, so they are going forward expenditures, reimbursable expenditures.

Councilor Brechnitz asked if FEMA reimburses after the project is done (yes). You're talking about increased operating costs. How much of this request for Lowdermilk Park is infrastructure and how much is annual operating expenses to run the park?

During questioning, Mr. Merritt explained:

- The request shows that the maintenance request is for parking lot maintenance

and restriping, which was $200,000 and that's not an ongoing expense.

- It's a capital cost, a maintenance cost. This is included in our operating costs and it's a maintenance item because we're not putting a new structure in or building a new parking lot. This is maintenance of the current parking lot, a $200,000 expenditure.
- It costs $100,000 in operating costs to operate Lowdermilk Park annually. That's not part of this request.

Councilor Brechnitz asked how the city will pay for the rest of the project.

Councilman Christman responded:

- We'd be doing a bond to secure funding in the short-term.
- We have a couple of other major projects unrelated to our beaches that are moving forward, including the Gulfshore Playhouse's parking garage.
- We're looking in real time at how we can bundle a couple of big capital projects and the timing for borrowing money for that.
- By securing grants before we do that from the state and TDC, that will lower the amount we need to borrow.
- Once the Naples Pier reimbursement comes from FEMA we'll be able to pay off that debt more quickly.
- That's the city's general plan and strategy for financing.

A discussion ensued and the following points were made:

- If the CAC approves this, that would lower the amount of money the city has to borrow.
- What's unknown is the FEMA amount because the pier project qualifies for a certain percentage, but there's an equation they use for mitigation.
- We've outlined some mitigation items within the design and when the bid comes back and we know the exact number, we have to sit down to come up with the numbers that are eligible for FEMA, etc. That number could be higher or lower.
- We know it's not going to be the full amount and we're trying to figure out how we're going to piece together the amount, which is why TDC funding is important.
- The city spent a portion of the 1% sales surtax on public facilities and other items. The bulk of the remaining 1% surtax monies that have not been allocated are being earmarked for the Beach Outfalls Project, the major stormwater management improvement project the city is carrying out along Gulfshore Boulevard between the new Naples Beach Hotel to the north and south into Old Naples. We're also seeking state money for that.
- The city also began the process of applying to the TDC to help fund that. If it proceeds, we'd need CAC and BCC approval.

Dr. Hushon moved to recommend approval of the First Amendment to the Tourist Development Council Grant Agreement based on updated requests from the City of Naples for FY 2023-2024 in the amount of $2,500,000 to budget these expenditures and approve any required budget amendments and made a finding that this item promotes tourism. Second by Mr. Raymond. The motion passed unanimously, 9-0.

IX. Old Business

Dr. Hushon asked whether Mr. Miller has information on the survey of the beaches for underwater hazards. Things are still coming up.
Mr. Miller said that's because we've had front after front. Our dive teams would like to be going into the water to do salvage operations, but they can't see because of the turbidity, so we're waiting for it to calm down. In the summer, we get clear water.

Councilor Brechnitz asked for an update on the Collier Creek dredging. It continues to be a navigational hazard. We've been in the permit mode for about two years.
Mr. Miller said it's been more than two years. We send emails to the Army Corps office in Fort Myers every month and sometimes get a response, but we have not received a positive response. They have a stack of applications like ours and their policy is to take them one at a time, so we're still waiting on the Army Corps of Engineers to give us a permit for that work. The design is finished and we're ready to go to bid.

Councilor Brechnitz asked about the Big Marco Pass channel by Isles of Capri. It's moving all the time and where the current markers are is not where the channel is. Boats get stuck. They're well within the channel, but the deep water is not in the channel so we need to have those markers moved.
Dr. Hushon said that's a Coast Guard request.

Mr. Miller responded:

- It's federal waters and we've corresponded with the Coast Guard and the Army Corps of Engineers.
- There are discussions ongoing and the Army Corps plans to do a dredge for Gordon Pass and parts of the channel behind Keewaydin Island and Sand Dollar Island.
- With construction next year, they're also going to be doing surveying this summer and will survey bank to bank from Keewaydin Island to Sand Dollar Island to explore the depths of the waters you're talking about.
- They're going to coordinate and work with U.S. Coast Guard. When they find good water, will coordinate moving the markers to where they need to be.

Dr. Hushon said the Coast Guard is really responsive. They're easier to get a hold of than the Corps in terms of moving markers, etc., because they understand. They also realize that markers age and they have to repair them. A lot of markers have to be totally replaced because they deteriorated.
Mr. Miller said that's correct. They'll also be inspecting for that.

X. Announcements

Vice Chair Trecker said Naples City Councilwoman Linda Penniman will be rejoining the CAC and replacing Councilman Christman.

A discussion ensued and the following points were made:

- After the recent City Council election, City Council went through its regular process of appointing members to various positions, from vice mayor to head of our Community Redevelopment Agency, to various boards and committees.
- These positions rotate periodically, so Councilman Christman will be stepping down from the CAC and Councilwoman Penniman will take over his term.
- County commissioners have to approve the recommendation by Naples City

Council.

- Councilman Christman's term ends in late May, so Councilwoman Penniman will start in June.
- City staff will notify the county about the change.
- The recommendations for the appointments are scheduled for the next TDC meeting, April 16, and will be approved at a BCC meeting in May.

XI. Committee Member Discussion

1. CAC - USACE CSRM Position Paper
Councilman Christman's Comments
Dr. Hushon's Comments
Mr. Roth's Comments
Vice Chair Trecker's Comments

Chairman Burke said he drafted a USACE position paper after offering to do it in January and incorporated comments from Judy, Bob and Dave.
Mr. Miller noted that Dr. Hushon's comments aren't on the printed agenda packet, which isn't the updated agenda, but they are online.

A discussion ensued and the following points were made:

- Vice Chair Trecker said he supports this 100% and agrees with the intent, but word-smithed it and didn't make substantial changes.
- It's inappropriate to let the county commissioners think everybody accepts an approach that forbids any hardening. The nature-based approach is not a bad one and can be pursued, but that alone won't provide the needed long-term resiliency. That's a very important point to deliver to commissioners and we don't have much time.
- Some of Judy's comments need to be added.
- The CAC's opinion is that the project is not trending toward the goal of preventing storm-driven coastal flooding.
- Dr. Hushon took exception to that and noted that Marco Island and other portions of the county were excluded from this project. That's what we're trying to get reinstated. Marco can't be ignored. It's a major part of the county, an economic driver. There's a tremendous valuation of property that will be exposed on Marco and things can be done.
- The Coastal Barrier Resource Act of 1983 (CBRA) says the Corps of Engineers is not going to spend federal funds on construction of projects in erodible areas.
- We need to know what the solutions might be and maybe the county can help fund that. To drop Marco Island doesn't sit well with a study this extensive.
- Chairman Burke's comments included Marco and says Marco Island and other portions of the county were excluded.
- It should at least say it's the position of the CAC that it should be included to some degree.
- We need to know why the Corps dismissed it. Was it due to a cost-benefit ratio? Chris Mason said it was because they're in a coastal erodible zone area so they weren't going to do anything.
- That tosses out nature-based solutions because that's all coastal construction that's subject to erosion.
- Dr. Hushon said environmental justice is missing from this position paper.

- Chairman Burke said he focused on only the points of contention and the Army Corps already supports environmental justice. We need to focus on what's not being looked at.
- Dr. Hushon said we need to mention that we think it's good that environmental justice is being considered, pat them on the back.
- Dr. Hushon said part of Marco Island's problem is its geography and geology and when it's at an average of 5 feet above sea level, they're going to have a hard time coming up with a solution. They missed one solution, the shoal at the south corner. If you let that shoal grow, it will ultimately protect Marco from a storm surge. There are things the Corps overlooked and missed. Besides bigger dunes, you're not going to add gates or seawalls, so you must consider what Marco can do.
- Mr. Roth noted that the Corps looked at Marco Island because he was at the charrette and made the recommendation about creating a shoal at the south end of the island to protect Caxambas Pass. He knows firsthand because his house got flooded and knows how the floodwaters came in. There is no protection there and if they let Kice Island develop a shoal or put in some groin there, it would advance it, or put in some mangroves to collect sand that's moving up. That's what we were asking them to study and they said it's in a zone they can't spend money on so we're not going to look at it. That's the problem.
- Dr. Hushon noted there are things the county is allowed to do that the Corps is not allowed to do. This is a joint plan and up until now, it's been what can the Corps do with the county. We need to keep things on the table that the county could do in conjunction with this. That could be something the county could do because the Corps' hands are tied.
- Mr. Miller said the county can work through the CAC, TDC and BCC to do projects they feel are beneficial towards resilience. They don't have to wait on the Corps to do the projects.
- Dr. Hushon said if the Corps doesn't put this in its plan, it's time to look at it. The Corps can't put much in its plan because of the island's geology and the geography. They didn't forget Marco, they just didn't do a lot for it. They did beach re-nourishment.
- Councilor Brechnitz said the Corps spoke to the city council and the council asked that question. The Corps said we didn't really look at Marco because we assumed we couldn't do anything. They subjectively decided that.
- Dr. Hushon said that's not true because she and others were at the charette and we listed things Marco wanted to do or could do and discussed what the Corps proposed for Marco.
- Mr. Roth said they made that decision because it's in this coastal-zone area. The county could study this on its own. It's analogous to what's going on at the north end of the island with the Sand Dollar Island-Tiger Tail Ecological Restoration Project, at the protected north end of the island. There's nothing happening at the south end of the island so maybe the county can look at this because it's in a zone the Corps said it won't spend federal money on. He asked the Corps to study it because they're engineers and have software and computer programs to figure it out. They could tell us where we could do this and how much it would cost, but say we're not going to give you 35%. The cost won't be known until we get the plan.
- Dr. Hushon said the plan was delayed until September.
- Mr. Koziar said we need to get these comments to the Corps. We can't hold this

up. We've been told "no" several times but we'll ask again.

- Chairman Burke said he'll redraft this based on everyone's comments and we can consider it at the next meeting. Ray doesn't believe we should do this, but he's leaving the CAC.
- Councilman Christman said he sent his email with comments, which is part of the agenda packet.

Councilman Christman told the CAC:

- He's sympathetic to the view that their level of hardening physical infrastructure elements, combined with a nature-based approach, would provide for a better overall plan.
- It's developed to the current plan and the pendulum has swung completely the other way. To himself and many others, moving to a more nature-based approach made sense.
- From a process and advisory standpoint, the CAC seems to be the logical body to oversee this project. Instead, an *ad hoc* committee was put together that has met infrequently. If they were meeting publicly on a regular basis, it would have been an opportunity for us and others to come forward to talk about specifics.
- Naples residents always ask what infrastructure he's talking about and where. Talking about it in the abstract is not productive and raises fears and concerns in people's minds because of what occurred during the first round of the Corps' planning effort.
- He doesn't know how we can proceed as a committee. A majority wants to proceed and agree on some language that makes a generalized recommendation.

Vice Chair Trecker responded:

- The major concern is that the word "hardening" may be offensive to some people but it's completely excluded. Some of us say the alarm should be sounded based on that.
- We're not looking at specific designs.
- Joe's point, which he supports, is that it would be foolhardy to let county commissioners think everything is moving along smoothly, with the complete exclusion of hardening as a comprehensive way of offering resilience.
- You can argue whether the CAC is the appropriate body. We're an important stakeholder, we were the primary citizens advisory group for some time and there's a large composite of knowledge about the subject, so we're an important stakeholder to take a position on this.

Chairman Burke responded:

- As an engineer trained in this, we have three options: we protect the shore, we protect the shoreline, including the inlets, and we raise structures. And you're not going to raise what's there. You'd have to knock it down and build up.
- You can start changing the building code now and make everything 10 feet in the air, which would solve the problem. You won't get flooded, but you would not lose residents.
- Or you can abandon the area.
- The NOAA (National Oceanic and Atmospheric Administration) map showing Category 4 coming in on Naples has 14 feet of water over 90% of the city. It should scare people. The mangroves aren't going to stop that. We're in an

alternate reality.

Mr. Roth responded:

- The purpose of this is bring everything we're talking about to commissioners' attention because he's uncertain what they know individually.
- They know this study is being done and will be presented to them at some time and then they'll get into it.
- We're trying to share our expertise and wisdom.

Vice Chair Trecker said that to present them with a general paper would be a mistake. We need to get their attention so we have to take issue with some items.

Councilman Christman asked if the ideal proposal would be to go back to the original plan from 2019 or 2020 and embrace the hardening recommendations?

Chairman Burke responded:

- If you went back to the original plan, there are certain things like raising the dune height and protecting the inlets. In the original plan, they were looking at a hurricane barrier where U.S. 41 crossed the Gordon River and that would protect all the upland areas along the Gordon River.
- It would basically condemn Port Royal, Royal Harbor, Aqualane Shores and parts of Olde Naples and guarantee they get flooded.
- The only way around that is you must change the building code to elevate the structures or new construction would be 8 feet in the air.
- He doesn't think the plan adequately addressed the city and he tried to raise that when the TSP (tentatively selected plan) first came out. Why was that portion of Naples condemned to be flooded? It's the same with the way they walled off Seagate.

A discussion ensued and the following points were made:

- Plan A had large defects in terms of the implications it presented for much of the City of Naples, which is why the city reacted the way it did.
- With Plan B, the one pending now, some people think it's inadequate for other reasons.
- Plan C would be something that hasn't been broached in detail and could comprise the current version and other options.
- As a committee, the CAC hasn't had a role in trying to shape it as individuals, particularly people with your kind of background.
- At a minimum, the CAC should list for the BCC four examples of things that aren't in the plan now but could be or should be to make it more effective.
- The concern is what is being considered now isn't effective and you'll wind up with limited protection, which will drive the Corps' cost-benefit ratio and decrease what they can do. They may say it's not worth doing anything and walk away, saying we've spent all our money putting together a plan that adhered to what you wanted and we've demonstrated we can't do anything for you.
- Time is of the essence.
- We're squandering an opportunity. With every Corps call, all we hear about is money is driving what they're trying to push through this process within the bureaucracy.

- As someone trained in this, Chairman Burke doesn't see how the fully nature-based solution could protect of the City of Naples. We have lot of coastline. We don't have the coastline available to protect with that type of solution.
- Vice Chair Trecker said he asked Chris Mason if the plan can be delayed past September and he said neither the timing for the selected plan or the overall endpoint is likely to be extended.
- Up until now, hardening has been completely excluded, including jetties, groins and islands.

Chairman Burke asked how they wanted to proceed. Do we want to pursue this?

A discussion ensued and they agreed we should pursue this, improve the draft position paper and present it to county commissioners.

A discussion ensued on the definition of environmental justice and the areas that involves, including River Park.

A discussion ensued and the following points were made:

- Some homes could be raised or moved at a lower cost.
- We need to focus on a statement of concern about using hardening.
- The position paper needs to be short and sweet, with key points.
- In September, the BCC will have to review this plan, so they should be aware of these issues. What they need is to have this information available in a short, concise position paper.
- The politicians need to understand the issue and educate the public to prevent misinformation.
- We need to continue with the position paper and make edits.
- Chairman Burke said he'll redraft it with these comments and if there are more comments, Andy will forward them to him.
- We can't dilute the message. It needs to have a kick and show our concerns.
- What we come up with doesn't have to be acceptable to everyone on the CAC, just a majority.
- Councilman Christman said he may be able to support the final version.
- If it's done quickly, Mr. Miller can provide it to committee members and we can suggested edits.
- Attorney Greene advised that all the information must come out at a publicly noticed meeting. You can make edits based on this meeting but you can't use Andy as a liaison to share information. Andy will send it out and include the additional comments as he did today and it can be approved at the next meeting.
- Chairman Burke agreed to incorporate everyone's suggestions and redo the position paper.

XII. Next Meeting

May 9, 2024, 1 p.m.

XIII. Adjournment

Mr. Raymond moved to adjourn the meeting. Second by Mr. Burke. The motion passed unanimously, 9-0.

There being no further business for the good of the county, the meeting was adjourned by order of the chairman at 3:24 p.m.

Collier County Coastal Advisory Committee

_____

Joseph Burke, Chairman

These minutes were approved by the Committee on_____, (check one) as presented, ____ or as amended _____.

FY 24 TDT Collections Report

31-Mar-2024

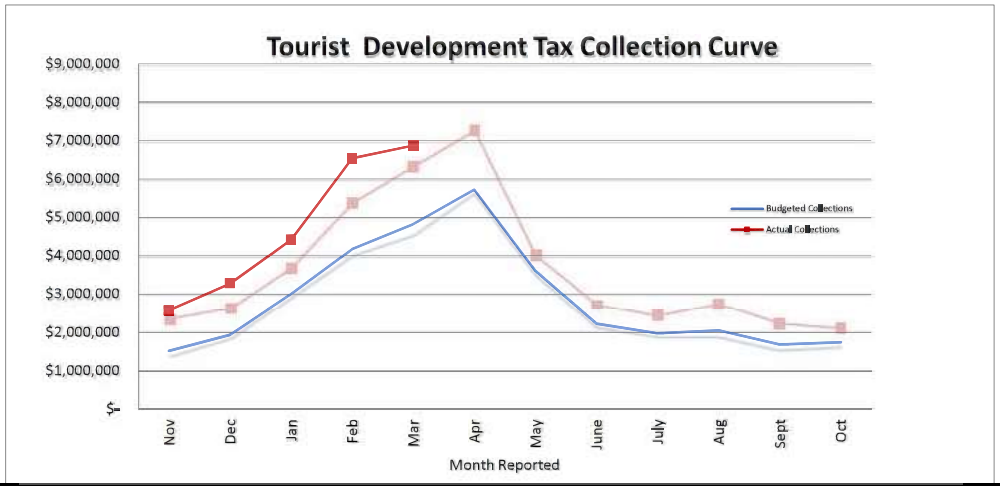
Fund Reporting	Fund	Adopted Budget	Updated Annual Forecast	Budgeted YTD	YTD Actual	Variance to Budgeted YTD
Beach Park Facilities	1100	1,234,300	1,528,339	552,978	847,176	294,198
TDC Promotion	1101	12,221,500	15,609,394	5,475,347	7,941,277	2,465,931
Non-County Museums	1103	658,500	815,370	295,014	450,843	155,829
TDC Admin	1104	-	-	0	-	-
Beach Renourishment	1105	13,438,900	16,640,361	6,020,753	9,221,410	3,200,656
Disaster Recovery	1106	-	-	0	-	-
County Museums	1107	2,000,000	2,000,000	896,019	1,818,276	922,257
TDC Capital	1108	4,923,200	6,096,022	2,205,640	3,379,854	1,174,214
	Gross Budget	**34,476,400**	**42,689,486**	**15,445,751**	**23,658,835**	**8,213,085**
	Less 5% Rev Res	(1,723,800)	23.82%		% Over/(Under) Bud	53.2%
	Net Budget	32,752,600				

Collections

Month Reported	Actual	Cum YTD	% Budget Collected to Date	% Variance FY23 Collections	% Variance FY22 Collections	% Variance FY21 Collections
Nov	2,566,657	2,566,657	7.44%	9.03%	14.03%	116.41%
Dec	3,274,362	5,841,019	16.94%	23.72%	12.56%	106.35%
Jan	4,411,180	10,252,199	29.74%	18.85%	-1.89%	53.59%
Feb	6,538,419	16,790,618	48.70%	20.84%	9.49%	84.87%
Mar	6,868,217	23,658,835	68.62%	7.92%	6.14%	66.31%
Apr	-	23,658,835	68.62%	n/a	n/a	n/a
May	-	23,658,835	68.62%	n/a	n/a	n/a
June	-	23,658,835	68.62%	n/a	n/a	n/a
July	-	23,658,835	68.62%	n/a	n/a	n/a
Aug	-	23,658,835	68.62%	n/a	n/a	n/a
Sept	-	23,658,835	68.62%	n/a	n/a	n/a
Oct	-	23,658,835	68.62%	n/a	n/a	n/a
Total	**23,658,835**	**23,658,835**	**YTD**	**15.48%**	**7.06%**	**77.73%**
				42,689,486		

Budget Comparison

	5 Yr History-Cum	5 Yr History-Monthly	Budgeted Collections	Actual Collections	Budget to Actual Variance	Updated Forecast
Nov	4.4%	4.4%	1,517,975	2,566,657	1,048,682	2,566,657
Dec	10.0%	5.6%	1,934,395	3,274,362	1,339,967	3,274,362
Jan	18.7%	8.7%	3,001,834	4,411,180	1,409,346	4,411,180
Feb	30.8%	12.1%	4,168,363	6,538,419	2,370,056	6,538,419
Mar	44.8%	14.0%	4,823,183	6,868,217	2,045,034	6,868,217
Apr	61.4%	16.6%	5,723,547	-	-	5,723,547
May	71.9%	10.5%	3,606,621	-	-	3,606,621
June	78.3%	6.5%	2,229,096	-	-	2,229,096
July	84.1%	5.8%	1,983,274	-	-	1,983,274
Aug	90.0%	6.0%	2,053,876	-	-	2,053,876
Sept	94.9%	4.9%	1,685,186	-	-	1,685,186
Oct	100.0%	5.1%	1,749,050	-	-	1,749,050
Total	100.0%	100.0%	**34,476,400**	**23,658,835**	**8,213,085**	**42,689,486**
			% over/(under) budget		53.2%	23.82%



EXECUTIVE SUMMARY

Recommendation to approve Tourist Development Tax Fund 1105 funding in the amount of $350,000 for maintenance of the Tigertail Lagoon / Sand Dollar Island Ecosystem Restoration Project, the necessary budget amendment and make a finding that this expenditure promotes tourism.

OBJECTIVE: To approve the City of Marco Island's request for funding for maintenance of the Tigertail Lagoon / Sand Dollar Island Ecosystem Restoration Project.

CONSIDERATIONS: The Tigertail Lagoon/Sand Dollar Island Ecosystem Restoration project is a City of Marco Island project designed to restore and protect a valuable ecosystem which includes recreational assets and tourist attractions. The project in its entirety is located on public beach and wetland areas designated as Critical Wildlife Area by the State of Florida and can only be accessed by land through Collier County Tigertail Beach Park at the south part of the system. The project is in the public interest providing environmental, social, and economic benefits and storm protection.

The Tigertail Lagoon and Sand Dollar Island ecosystem is a protected natural preserve and a Critical Wildlife Area that provides valuable habitat for a variety of birds, sea turtles, manatees, and seagrasses. Tigertail Lagoon and Sand Dollar Island are also valuable Marco Island recreational resources for residents and tourists for birding, fishing, kayaking, paddle boarding, kitesurfing, and, on the northern half, boating. The ecosystem is accessed by the public via Collier County's Tigertail Beach Park at the southern end of the lagoon and via boat at the northern end of the lagoon. Tigertail Beach is one of 510 points on the Great Florida Birding and Wildlife Trail and is considered one of the best all-around birding spots in southwest Florida. Reader's Digest recently named this area as one of the "15 Best Beaches in Florida Locals Want to Keep Secret." The County Park is one of only three public beach access points on Marco Island and receives over 200,000 visitors annually. It has a relatively large public parking area, playground, and bathrooms. A shuttle bus runs from some hotels to the park. Private, rental, and commercial tourist boats access the lagoon from its northern entrance. The Tigertail Lagoon and Sand Dollar Island system was impacted by Hurricane Irma in 2017 and was evolving toward closure when it was further impacted by Hurricane Ian in September 2022.

The City of Marco Island and Collier County funded the initial ecosystem restoration project in 2022-2023 which included restoration of the collapsing part of Sand Dollar Island and lagoon with approximately 500,000 cubic yards of sand sourced from shoaling areas within the system and authorized nearshore borrow areas. The project also restored wetland areas and tidal flow to the south part of Tigertail Lagoon, improving water quality and maintaining environmental habitats and recreational benefits. The City of Marco conducts all the necessary project management, biological and physical monitoring, and maintenance required for permit compliance.

The proposed maintenance in this application is part of the ecosystem restoration maintenance plan to recycle sand from the authorized sand trap borrow area at the tip of Sand Dollar Island and place the sand to restore the beach berm in vulnerable areas on the west part of the constructed beach berm. The limited sand recycling is planned for approximately 40,000 cubic yards at a 2-year cycle to maintain the integrity of the constructed berm. This work will be completed using mechanical equipment outside of bird and sea turtle nesting seasons.

A Tourist Development Tax Funding Agreement between the County and the City of Marco Island will

be necessary to allow the County to reimburse the City of Marco for eligible project expenditures.

GROWTH MANAGEMENT IMPACT: This item complies 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 9, 2024, and the Tourist Development Council (TDC) on May 21, 2024.

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

STAFF RECOMMENDATION: Collier County's Coastal Zone staff has reviewed and supports the request as it pertains to the maintenance of the flow channel to Tigertail Lagoon.

FISCAL IMPACT: Funding in the amount of $350,000.00 will be requested and budgeted for Fiscal Year 2025 within the TDC Beach Renourishment Fund (1105), Tigertail Lagoon Project (90007). The source of funding is the Tourist Development Tax.

RECOMMENDATION: To approve Tourist Development Tax Fund 1105 funding in the amount of $350,000 for maintenance of the Tigertail Lagoon / Sand Dollar Island Ecosystem Restoration Project, authorize the necessary budget amendment and make a finding that this expenditure promotes tourism.

Prepared By: Andrew Miller, Coastal Zone Management
Justin Martin, Public Works Director, City of Marco Island

COLLIER COUNTY TOURIST DEVELOPMENT COUNCIL
CATEGORY "A" GRANT APPLICATION

Fiscal Year 25 Project
Tigertail Lagoon-Sand Dollar Island Ecosystem Maintenance, Marco Island

---

1. **Name and Address of Project Sponsor Organization:**
   City of Marco Island
   50 Bald Eagle Drive
   Marco Island, FL 34145

2. **Contact Person, Title and Phone Number:**
   Jusin Martin, PE., Director of Public Works,
   239-389-5184

3. **Organization's Chief Official and Title:**
   Michael McNees, City Manager
   Jared Grifoni, City Council Chairman

4. **Details of Project-Description and Location:**

The Tigertail Lagoon/Sand Dollar Island Ecosystem Restoration project is a City of Marco Island project designed to restore and protect a valuable ecosystem which includes recreational assets and tourist attractions. The project in its entirety is located on public beach and wetland areas designated as Critical Wildlife Area by the State of Florida and can only be accessed by land through Collier County Tigertail Beach Park at the south part of the system. The project is in the public interest providing environmental, social and economic benefits and storm protection.

The Tigertail Lagoon and Sand Dollar Island ecosystem is a protected natural preserve and a Critical Wildlife Area that provides valuable habitat for a variety of birds, sea turtles, manatees, and seagrasses. Tigertail Lagoon and Sand Dollar Island are also valuable Marco Island recreational resources for residents and tourists for birding, fishing, kayaking, paddle boarding, kitesurfing, and, on the northern half, boating. The ecosystem is accessed by the public via Collier County's Tigertail Beach Park at the southern end of the lagoon and via boat at the northern end of the lagoon. Tigertail Beach is one of 510 points on the Great Florida Birding and Wildlife Trail and is considered one of the best all-around birding spots in southwest Florida. Reader's Digest recently named this area as one of the "15 Best Beaches in Florida Locals Want to Keep Secret." The County Park is one of only three public beach access points on Marco Island and receives over 200,000 visitors annually. It has a relatively large public parking area, playground, and bathrooms. A shuttle bus runs from some hotels to the park. Private, rental, and commercial tourist boats

access the lagoon from its northern entrance. The Tigertail Lagoon and Sand Dollar Island system was impacted by Hurricane Irma in 2017 and was evolving toward closure when it was further impacted by Hurricane Ian in September 2022.

The City of Marco Island and Collier County funded the initial ecosystem restoration project in 2022-2023 which included restoration of the collapsing part of Sand Dollar Island and lagoon with approximately 500,000 cubic yards of sand sourced from shoaling areas within the system and authorized nearshore borrow areas. The project also restored wetland areas and tidal flow to the south part of Tigertail Lagoon, improving water quality and maintaining environmental habitats and recreational benefits. The City of Marco conducts all the necessary project management, biological and physical monitoring, and maintenance required for permit compliance.

The proposed maintenance in this application is part of the ecosystem restoration maintenance plan to recycle sand from the authorized sand trap borrow area at the tip of Sand Dollar Island and place the sand to restore the beach berm in vulnerable areas on the west part of the constructed beach berm. The limited sand recycling is planned for approximately 40,000 cubic yards at a 2-year cycle to maintain the integrity of the constructed berm. This work will be completed using mechanical equipment outside of bird and sea turtle nesting seasons.

5. **Estimated project start date:** November 2024

6. **Estimated project duration:** 1-2 months

7. **Total TDC Tax Funds Requested:** $350,000

8. **If the full amount requested cannot be awarded, can the program/project be restructured to accommodate a smaller award?**
   Yes (x) No ( )

COLLIER COUNTY TOURIST DEVELOPMENT COUNCIL
CATEGORY "A" GRANT APPLICATION

Fiscal Year 25 Project
Tigertail Lagoon-Sand Dollar Island Ecosystem Maintenance, Marco Island

PROJECT BUDGET

PROJECT ELEMENT	AMOUNT
TDC Funds Requested	$350,000
City/Taxing District Share	$186,000
State of Florida Share	0
Federal Share	0
TOTAL	$536,000

PROJECT EXPENSES 2024-2025

Annual environmental monitoring, surveying, project management and permit compliance maintenance	$186,000
2024-2025 operational maintenance to maintain flow channel & beach berm and limit spit growth to the north	
• Construction cost	$300,000
• Engineering and environmental support	$50,000

TDC Funds requested - $350,000

MILESTONES

1. Annual monitoring survey and biological monitoring	June-September 2024
2. Construction plans and technical specifications	May 2024
3. Project procurement and contractor selection	August 2024
4. Project construction	November 2024-Jan 2025
5. Project completion and permit compliance reporting	February 2025

EXECUTIVE SUMMARY

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 2024 for time and materials not to exceed $368,494.04 Tourist Development Tax funds under Professional Services Agreement No. 22-8015, authorize the Chairman to execute the Work Order, and make a finding that this item promotes tourism (Fund 195, 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 March 25, 2024, to perform biological monitoring in 2024.

CONSIDERATIONS: The Florida Department of Environmental Protection 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, 2024.

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 2024 nearshore hardbottom monitoring. The Work Order for 2024 is for a not to exceed time and material amount of $368,494.04. Although this Work Order includes an approximately 8% rate increase from the prior contract, the overall fee for 2024 is about $10,000 less than 2023, primarily because side-scan sonar is not needed for 2024 or the next several years of monitoring. Subaquatic vegetation (SAV) surveys for Wiggins and Doctors Passes have been included on an as-needed basis but will likely not be necessary since inlet dredging is not anticipated for 2024.

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 9, 2024, and the Tourist Development Council (TDC) on May 21, 2024.

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

FISCAL IMPACT: Funding for this work is available in the Tourist Development Tax Beach Renourishment Fund (1105) project 90033.

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 2024 for time and materials not to exceed $368,494.04 in Tourist Development Tax funds, under Professional Services Agreement No. 22-8015, authorize the Chairman to execute the Work Order, and make a finding that this item promotes tourism.

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 1st, 2027

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

Project Name: 2024 Hardbottom Monitoring
Project No: 90033.1

The work is specified in the proposal dated May 1st, 2024, 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 1a Administration, Travel, Mobilization and Demobilization
* Task 1b Field Monitoring Survey
* Task 1c Analysis, Reporting, and Deliverables
* Task 1d Contingency Field Monitoring Survey
* Task 2a Administration, Travel, Mobilization (Doctors Pass)
* Task 2b Field Survey – Mapping and Qualitative Characterization (Doctors Pass)
* Task 2c Field Survey – Quantitative Survey (Doctors Pass)
* Task 2d Analysis and Data Deliverables (Doctors Pass)
* Task 3a Administration, Travel, Mobilization, and Demobilization (Wiggins Pass)
* Task 3b Field Survey – Mapping and Qualitative Characterization (Wiggins Pass)
* Task 3c Field Survey – Quantitative Survey (Wiggins Pass)
* Task 3d Analysis and Data Deliverables (Wiggins Pass)

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), as provided in the attached proposal.

* Task 1a $36,046.27
* Task 1b $155,689.49
* Task 1c $56,669.20
* Task 1d $35,905.57
* Task 2a $7,626.99
* Task 2b $6,477.74
* Task 2c $24,433.55

* Task 2d $10,769.94
* Task 3a $7,428.72
* Task 3b $6,477.74
* Task 3c $12,463.01
* Task 3d $8,505.82

TOTAL FEE $368,494.04

PREPARED BY: _____ _____
Andrew Miller, Manager - CZM Date

APPROVED BY: _____ _____
Beth Johnssen, Division Director Date

APPROVED BY: _____ _____
Trinity 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.

_____ _____
Frederick B. Ayer,II, Executive Vice President Date

(Remainder of page intentionally left blank)

IN WITNESS WHEREOF, the parties hereto, have each, respectively, by an authorized person or agent, have executed this Work Order on the date and year first written below.

ATTEST:
, Clerk of Courts

By: _____

Dated: _____
(SEAL)

BOARD OF COUNTY COMMISSIONERS
COLLIER COUNTY, FLORIDA

By: _____
, Chairman

CSA Ocean Sciences Inc.

By:_____
Signature
Frederick B. Ayer, II, Executive Vice President
↑Type/print signature and title↑

_____
First Witness

_____
↑Type/print witness name↑

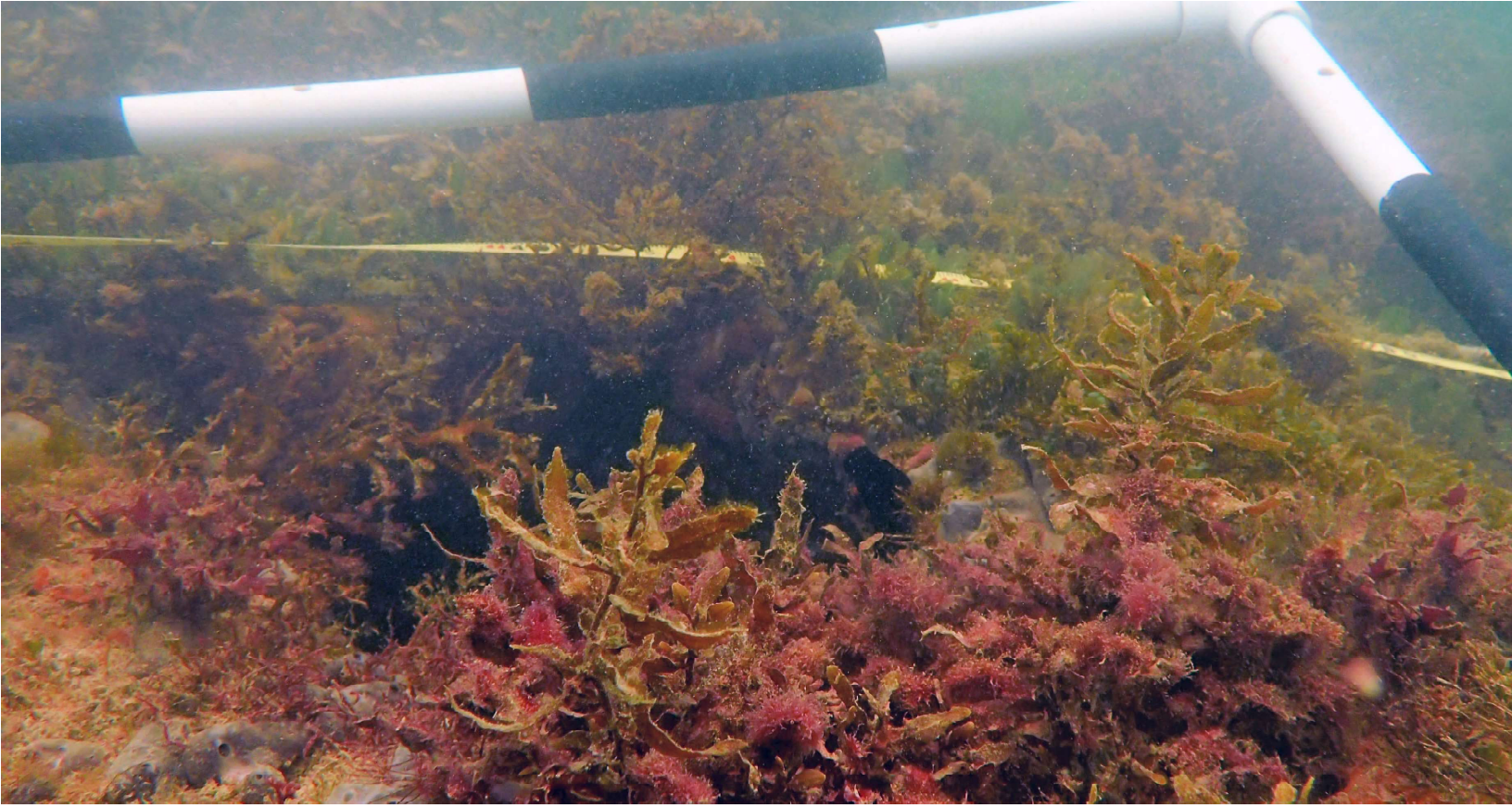
_____
Second Witness

_____
↑Type/print witness name↑

Approved as to Form and Legality:

_____
Assistant County Attorney

_____
Print Name



TECHNICAL & COMMERCIAL PROPOSAL

Collier County 2024 Nearshore Hardbottom Biological Monitoring and 2024 Doctors Pass and Wiggins Pass Pre-Dredging SAV Surveys

Submitted To:

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

Prepared For:	Prepared By:
Collier County; Coastal Zone Management Section **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 and Project Scientist Ports and Coastal Sciences Division Tel: 772-219-3048 | Cell: 724-316-4225 lkabay@conshelf.com CSA Ref: 82493

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

Ver.	Date	Description	Approved	
01	25 March 2024	Collier County 2024 NSHB Biological Monitoring and Doctors/Wiggins Pass Pre-dredge SAV Surveys	MG	FA
02	01 May 2024	Updated date on proposal, all information relevant to date, no changes from version 01	LK	

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Attachment A – CSA Total Labor Rate Schedule for Collier County
Attachment B – CSA Field Equipment Rate Schedule for Collier County

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PROPOSAL OVERVIEW

CSA Ocean Sciences Inc. (CSA) is pleased to submit this combined proposal to Collier County for professional environmental monitoring services. The proposal presents the scope of work, level of effort, project schedules, and estimated costs and billing schedule for three efforts: (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 **5.1**), (2) a pre-construction submerged aquatic vegetation (SAV) survey for maintenance dredging of Doctors Pass (**Sections 2.0** and **5.2**), and (3) a pre-construction SAV survey for maintenance dredging of Wiggins Pass (**Sections 3.0** and **5.3**).

While each effort is considered a stand-alone survey and presented as such, a combined proposal cost summary for total estimated costs to Collier County for the 2024 monitoring season is provided in **Section 5.4** for convenience.

1.0 NEARSHORE HARDBOTTOM BIOLOGICAL MONITORING

1.1 INTRODUCTION

CSA is submitting this price estimate 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 2024. This estimate 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

Tasks 1a through **1c** provide costs for mobilization, travel, and field work for a joint CSA/Collier County field team along with the associated project administration, data analysis, and reporting for the nearshore hardbottom biological monitoring survey. **Task 1d** is provided as an optional task in the event that Collier County CZM is unable to staff the field team during optimal conditions in the summer months and a field effort fully staffed by CSA personnel is required.

Task 1a: Administration, Travel, Mobilization, and Demobilization

CSA will provide project administration including oversight, coordination, and management of the 2024 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 three-person scientific dive team and required equipment; Collier County will provide a vessel and captain to support the survey.

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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. 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 three-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, **Tasks 1b** and **1c**, collectively, include provision for up to three round trips for the CSA team and associated per diem for the field effort and an additional one round trip for a kick-off meeting for a total of 4 round trips. Additional trips to and from Collier County will be billed on a Time and Materials basis under the agreed upon rates, as needed, with prior approval from Collier County.

Task 1b: Field Monitoring Survey

CSA will provide three 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 34 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 2024. 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, nine 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 2024 field survey is included in this proposal.

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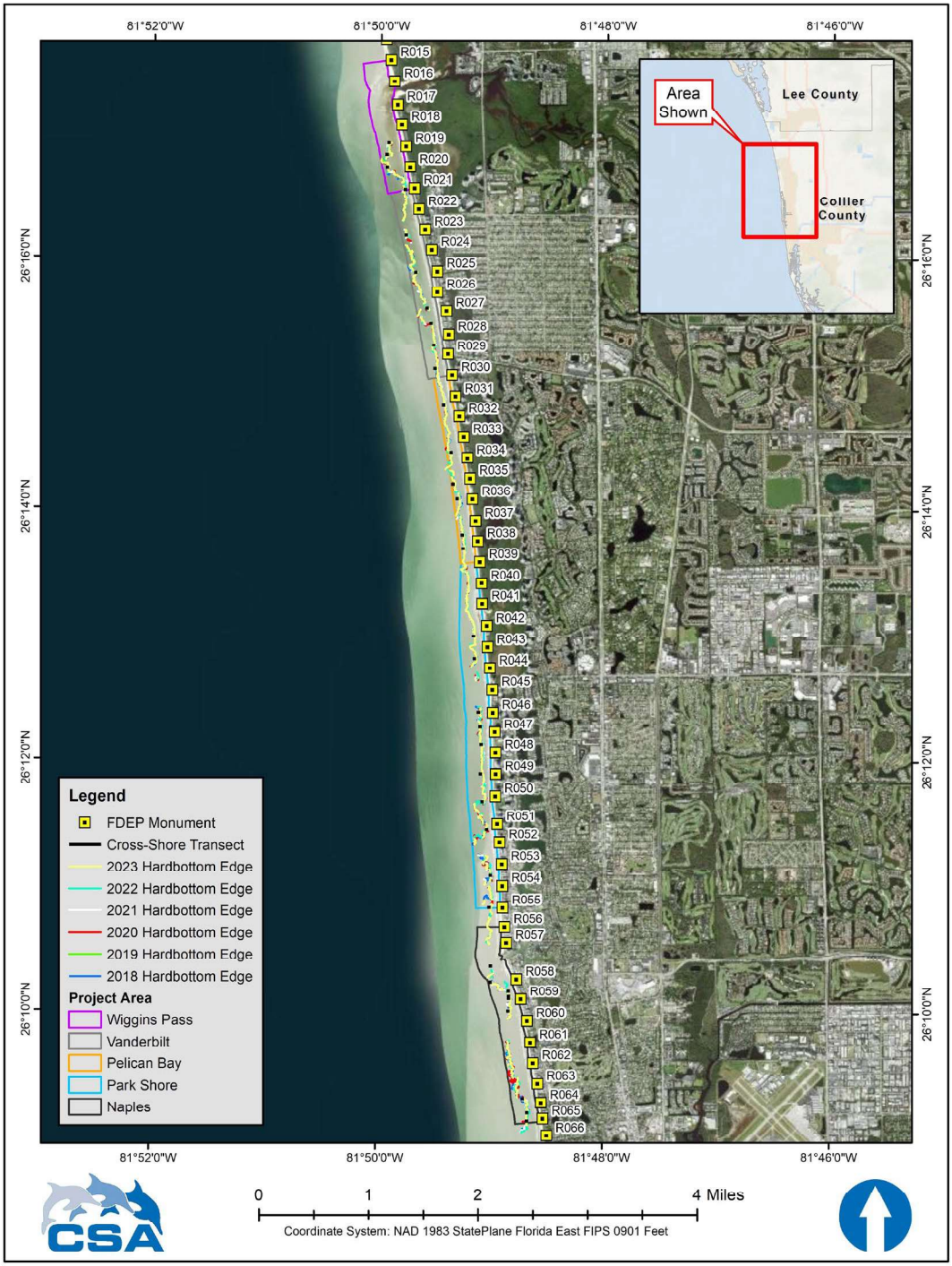


Figure 1-1. Collier County Beach Nourishment and Wiggins Pass Maintenance Dredging Project areas located along the coastline near Naples, Florida. FDEP = Florida Department of Environmental Protection.

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Transect Monitoring

Along each 50-m transect, the team will conduct line-intercept and interval sediment depth measurements, survey 11 benthic quadrats, collect coral photo quadrats, 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 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.

Task 1c: 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 2024 Nearshore Hardbottom Monitoring Survey and include comparisons with annual monitoring survey results from the 2018 (CSA 2019a), 2019 (CSA 2019b), 2020 (CSA 2020), 2021 (CSA 2022a), and 2022 (CSA 2022b), and 2023 (CSA 2024) nearshore hardbottom monitoring reports. The 2024 monitoring report will include graphs, tables, and statistical analyses of collected data. Geo-referenced maps showing hardbottom along transects and the nearshore

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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.

Task 1d: Contingency Field Monitoring Survey

Task 1d, consisting of CSA vessel, operator, and four scientific divers, is also included in this cost estimate as an option for contingency. **Tasks 1a** through **1c** assume that the required four-person dive team will consist of three CSA AAUS divers/marine biologists and one Collier County CZM diver working from a Collier County vessel with a Collier County vessel operator. In the event that survey conditions are favorable and Collier County divers or vessel operator are unable to participate in the survey, CSA will provide additional scientific divers and a suitable survey vessel and operator, as necessary. A such, this task comprises of a full CSA dive team including four divers, one vessel operator, CSA vessel, and all necessary equipment normally provided by Collier County, as well as travel to and from Collier County.

1.3 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 surveys will be conducted between 1 May and 30 September 2024 with the final report of the nearshore hardbottom biological monitoring and the conclusion of all related work within 270 days of NTP. 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.

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 monitoring survey in its entirety as weather permits.

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2.0 DOCTORS PASS PRE-DREDGING SUBMERGED AQUATIC VEGETATION SURVEY

2.1 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 recently distributed 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 only been observed in lower 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 the dredge footprint and in the adjacent mixing zone within Moorings Bay during previous resource surveys in 2018 (CSA, 2018a,b). 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 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 updated level of effort for a potential 2024 pre-construction SAV survey for Doctors Pass maintenance dredging.

2.2 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 2024), as required in the Seagrass BMP.

Task 2a: Administration, Travel, Mobilization, and Demobilization (Doctors Pass)

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

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Task 2b: Field Survey – Mapping and Qualitative Characterization (Doctors Pass)

This task includes labor for three 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 buoy equipped with radio telemetry and a DGPS antenna linked to a topside laptop computer running HYPACK navigational software. Positioning data will be recorded to determine the total acreage of SAV within the mixing zone.

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.

In situ Delineation Acreage Analysis

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.

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

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Task 2c: Field Survey – Quantitative Survey (Doctors Pass)

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 conducted in **Task 2b** 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.

This task includes labor for three CSA AAUS divers, equipment, hotel, and per diem. This proposal assumes that Collier County will provide the vessel and operator to augment the CSA survey team.

Task 2d: Analysis and Data Deliverables (Doctors Pass)

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 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.

2.3 PROJECT SCHEDULE

The survey will be completed during the SAV growing season, i.e., prior to 30 September 2024. Within 7 days of receiving the Purchase Order from Collier County and weather permitting, CSA will mobilize the necessary equipment and travel to Naples, Florida the afternoon prior to the field survey. Daily updates of survey progress will be provided to Collier County and contact with FDEP will be maintained to assure compliance with permitting based on field observations. Upon return, raw data and deliverables will be compiled for submittal to FDEP no later than 45 days following the survey. All project related tasks will be completed within 270 days of the NTP from Collier County.

3.0 WIGGINS PASS PRE-DREDGING SUBMERGED AQUATIC VEGETATION SURVEY

3.1 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 the Permit, pre- and post-construction SAV surveys are required with special consideration for the recently distributed 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 the Wiggins Pass Navigation Channel only; SAV has previously been

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observed on the east and west side of the Water Turkey Bay Channel from Wiggins Pass and into Water Turkey Bay (Earth Tech Environmental, 2020).

To determine potential impacts to SAV from Wiggins 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 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 updated level of effort for a potential 2024 pre-construction SAV Survey for Wiggins Pass maintenance dredging.

3.2 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 2024), as required in the Seagrass BMP.

Task 3a: Administration, Travel, Mobilization, and Demobilization (Wiggins Pass)

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

Task 3b: Field Survey – Mapping and Qualitative Characterization (Wiggins Pass)

This task includes labor for three 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 buoy equipped with radio telemetry and a DGPS antenna linked to a topside laptop computer running HYPACK navigational software. The positioning data will be recorded to determine the total acreage of SAV within the navigation channel.

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.

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Task 3c: Field Survey – Quantitative Survey (Wiggins Pass)

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 in Task 3b 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.

This task includes labor for three CSA AAUS divers, equipment, hotel, and per diem. This proposal assumes that Collier County will provide the vessel and operator to augment the CSA survey team.

Task 3d: Analysis and Data Deliverables (Wiggins Pass)

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 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.

3.3 PROJECT SCHEDULE

The survey will be completed during the SAV growing season, i.e., prior to 30 September 2024. Within 7 days of receiving the Purchase Order from Collier County and weather permitting, CSA will mobilize the necessary equipment and travel to Naples, Florida the afternoon prior to the field survey. Daily updates of survey progress will be provided to Collier County and contact with FDEP will be maintained to assure compliance with permitting based on field observations. Upon return, raw data and deliverables will be compiled for submittal to FDEP no later than 45 days following the survey. All project related tasks will be completed within 270 days of the NTP from Collier County.

4.0 HSSEQ OVERVIEW

CSA integrates Health, Safety, Security, Environment, and Quality (HSSEQ) standards and policies into every activity to protect human health and minimize impacts to the environment. CSA's commitment to achieving and maintaining stringent HSSEQ standards is demonstrated by our:

- ISO 9001:2015 certification for quality management standards;
- ISNetworld and DISA Global Solutions Memberships;
- Alignment with and pursuit of ISO 45001:2018 and ISO 14001:2015 certifications;
- Petroleum Education Council (PEC) SafeGulf, SafeLandUSA, and H2S Clear certifications;

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- American Academy of Underwater Sciences (AAUS) and Scientific Boating Safety Association (SBSA) Memberships;
- HSSE Manager who is an ISO 90001:2015 Lead Auditor and a PEC Certified Instructor;
- Total Recordable Incident Rate of 0.0 and Experience Modifier Rate of 0.83; and
- Recipient of HSSEQ awards, including:

"America's Safest Companies Award" from EHS Today, honoring companies committed to employee safety and health, environmental management, and risk control;

"Sunshine State Safety Recognition Award" from the University of South Florida for corporate emphasis on safety; and

"Excellence in HSE Award" from the Trinidad regional Chamber of Commerce (AMCHAM) for excellence in HSE, business performance, and encouraging continuous improvement.

5.0 RATES, RESOURCES, AND BILLING SCHEDULE

5.1 NEARSHORE HARDBOTTOM BIOLOGICAL MONITORING

CSA has built in conservative estimates for level of effort to decrease the likelihood of change orders or additional approvals from Collier County, and, utilizing best management practices, we anticipate being able to complete the below tasks within or under the costs provided. The project costs listed in **Table 5-1** by task are on a Time and Materials (T&M) Not-to-Exceed basis and will be billed monthly once NTP is given for the nearshore hardbottom biological monitoring survey. The labor and equipment rates are based on the Professional Services for Nearshore Hardbottom Monitoring Contract # 22-8015 between CSA and Collier County on 01 March 2024. CSA's 2024 labor and equipment rate schedules are also provided in **Attachments A** and **B**, respectively.

5.2 DOCTORS PASS PRE-DREDGING SAV SURVEY

Table 5-2 provides the T&M rates and estimated level of effort for a stand-alone SAV survey that meets the new Guidance on Surveys for Potential Impacts to SAV (FDEP, 2020). Costs incurred will be billed at completion of the survey. If possible, CSA's project manager will work closely with the Collier County CZM project manager to combine travel and mobilization costs with the Nearshore Hardbottom monitoring, which is anticipated to be conducted concurrently. Additionally, every effort will be made to discuss the level of effort required for the quantitative survey with FDEP representatives prior to the field effort, which may result in a decreased number of days. The labor and equipment rates found in **Table 2** are based on the Professional Services for Nearshore Hardbottom Monitoring Contract #22-8015 between CSA and Collier County on 01 March 2024. CSA's 2024 labor and equipment rate schedules are also provided in **Attachments A** and **B**, respectively.

5.3 WIGGINS PASS PRE-DREDGING SAV SURVEY

Table 5-3 provides the T&M rates and estimated level of effort for a stand-alone SAV Survey in Wiggins Pass, Collier County, that meets the new Guidance on Surveys for Potential Impacts to SAV (FDEP, 2020). Costs incurred will be billed at completion of the Survey. If possible, CSA's project manager will work closely with the Collier County CZM project manager to combine travel and mobilization costs with the Nearshore Hardbottom monitoring, which is anticipated to be conducted concurrently. Additionally, every effort will be made to discuss the level of effort required for the quantitative survey with FDEP representatives prior to the field effort, which may result in a decreased number of days. The labor and

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equipment rates found in **Table 5-3** are based on the Professional Services for Nearshore Hardbottom Monitoring Contract #22-8015 between CSA and Collier County on 01 March 2024. CSA's 2024 labor and equipment rate schedules are also provided in **Attachments A** and **B**, respectively.

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Table 5-1. Estimated Cost breakdown of CSA hours, survey days, and travel by task for the Nearshore Hardbottom Biological Monitoring Survey.

Project Task	Description		Unit	Qty	Rates (USD)	Subtotal	Total
1a	**Administration, Travel, Mobilization, and Demobilization**						**$ 36,046.27**
	Labor					**$ 29,443.60**	
		PS3 (Diver 1) - Field Team	Hour	78	$ 159.90	$ 12,472.20	
		PS2 (Diver 2) - Field Team	Hour	44	$ 121.52	$ 5,346.88	
		PS1 Standby Diver	Hour	65	$ 108.73	$ 7,067.45	
		PM2	Hour	8	$ 201.47	$ 1,611.76	
		PM1	Hour	1	$ 140.71	$ 140.71	
		APM	Hour	8	$ 89.55	$ 716.40	
		OM	Hour	1	$ 220.66	$ 220.66	
		GISD	Hour	4	$ 140.71	$ 562.84	
		GISM	Hour	1	$ 159.90	$ 159.90	
		GISA`	Hour	1	$ 105.53	$ 105.53	
		SS1	Hour	1	$ 198.27	$ 198.27	
		OS2	Hour	1	$ 179.08	$ 179.08	
		OS1	Hour	1	$ 147.10	$ 147.10	
		T3	Hour	1	$ 118.32	$ 118.32	
		T2	Hour	1	$ 102.34	$ 102.34	
		T1	Hour	4	$ 73.54	$ 294.16	
	Travel					**$ 4,037.67**	
		Vehicle Rental	Day (3 mob/3 dmob/ 1 meeting)	7	$ 180.00	$ 1,260.00	
		Fuel	Gallon (4 round trips)	84	$ 5.04	$ 423.36	
		Lodging (arrival only)	3 persons x 3 nights	9	$ 187.59	$ 1,688.31	
		Meals Mobilization (lunch and dinner per diem)	3 persons x 3 days	9	$ 30.00	$ 270.00	
		Meals Demobilization (full day per diem)	3 persons x 3 days	9	$ 36.00	$ 324.00	
		Meals Kick-off Meeting (full day per diem)	2 persons x 1 days	2	$ 36.00	$ 72.00	

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Project Task	Description		Unit	Qty	Rates (USD)	Subtotal	Total
	Equipment					**$ 2,565.00**	
	3 mobilization and 3 demobilization events	Diver GoPro Camera System (2 x 6 days)	Day	12	$ 35.00	$ 420.00	
		Diver Digital Still Camera System (2 x 6 days)	Day	12	$ 55.00	$ 660.00	
		Scuba Equipment Set 1	Day	6	$ 72.50	$ 435.00	
		Scuba Equipment Set 2	Day	6	$ 72.50	$ 435.00	
		Scuba Equipment Set 3	Day	6	$ 72.50	$ 435.00	
		Telemetry Survey System	Day	6	$ 30.00	$ 180.00	
1b	**Field Monitoring Survey**						**$ 155,689.49**
	Labor					**$ 122,219.27**	
		PS3 (Diver 1) - Field Team	Hour	312	$ 159.90	$ 49,888.80	
		PS2 (Diver 2) - Field Team	Hour	312	$ 121.52	$ 37,914.24	
		PS1 Standby Diver	Hour	312	$ 108.73	$ 33,923.76	
		SS1	Hour	1	$ 198.27	$ 198.27	
		T3	Hour	1	$ 118.32	$ 118.32	
		T2	Hour	1	$ 102.34	$ 102.34	
		T1	Hour	1	$ 73.54	$ 73.54	
	Travel					**$ 22,775.22**	
		Vehicle Rental	Day	26	$ 180.00	$ 4,680.00	
		Fuel - Vehicle	Gallon	130	$ 5.04	$ 655.20	
		Lodging	3 rooms x 26 nights	78	$ 187.59	$ 14,632.02	
		Meals (per diem)	3 persons x 26 days	78	$ 36.00	$ 2,808.00	
	Equipment					**$ 10,695.00**	
		Diver GoPro Camera System (2 x 26 days)	Day	52	$ 35.00	$ 1,820.00	
		Diver Digital Still Camera System (2 x 26 days)	Day	52	$ 55.00	$ 2,860.00	
		Scuba Equipment Set 1	Day	26	$ 72.50	$ 1,885.00	
		Scuba Equipment Set 2	Day	26	$ 72.50	$ 1,885.00	
		Scuba Equipment Set 3	Day	26	$ 72.50	$ 1,885.00	
		Telemetry Survey System	Day	12	$ 30.00	$ 360.00	

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Project Task	Description		Unit	Qty	Rates (USD)	Subtotal	Total
1c	**Analysis, Reporting, and Deliverables**						**$ 56,669.20**
	Labor					**$ 56,446.60**	
		SS2	Hour	2	$ 239.84	$ 479.68	
		SS1	Hour	42	$ 198.27	$ 8,327.34	
		PS3	Hour	20	$ 159.90	$ 3,198.00	
		PS2	Hour	206	$ 121.52	$ 25,033.12	
		PS1	Hour	96	$ 108.73	$ 10,438.08	
		GISD	Hour	16	$ 140.71	$ 2,251.36	
		GISA	Hour	24	$ 105.53	$ 2,532.72	
		GIST	Hour	1	$ 92.74	$ 92.74	
		T3	Hour	1	$ 118.32	$ 118.32	
		T2	Hour	1	$ 102.34	$ 102.34	
		T1	Hour	1	$ 73.54	$ 73.54	
		TE2	Hour	1	$ 127.92	$ 127.92	
		TE1	Hour	12	$ 99.14	$ 1,189.68	
		DP	Hour	28	$ 86.35	$ 2,417.80	
		Clerical	Hour	1	$ 63.96	$ 63.96	
	Reimbursables					**$ 222.60**	
		Digital Media	Each	2	$ 73.50	$ 147.00	
		Fedex	Each	2	$ 37.80	$ 75.60	
1d	**Contingency Field Monitoring Survey - 4 CSA Divers, Vessel, & Operator**						**$ 35,905.57**
	Labor					**$ 26,491.06**	
		PS3 (Diver 1) - Field Team	Hour	45	$ 159.90	$ 7,195.50	
		PS2 (Diver 2) - Field Team	Hour	45	$ 121.52	$ 5,468.40	
		PS1 (Diver 3) - Field Team	Hour	45	$ 108.73	$ 4,892.85	
		T1 Standby Diver	Hour	45	$ 73.54	$ 3,309.30	
		T3 Vessel Operator	Hour	45	$ 118.32	$ 5,324.40	
		SS1	Hour	1	$ 198.27	$ 198.27	
		T2	Hour	1	$ 102.34	$ 102.34	

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Project Task		Description	Unit	Qty	Rates (USD)	Subtotal	Total
	Travel					**$ 4,440.51**	
		Fuel - Truck	Gallon	54	$ 5.04	$ 272.16	
		Fuel - Vessel	Gallon	90	$ 6.30	$ 567.00	
		Dockage	Day	3	$ 73.50	$ 220.50	
		Lodging	5 rooms x 3 nights	15	$ 187.59	$ 2,813.85	
		Meals (per diem)	5 persons x 3 days	15	$ 37.80	$ 567.00	
	Equipment					**$ 4,974.00**	
		25 ft Parker Boat w/Trailer	Day	3	$ 550.00	$ 1,650.00	
		Truck (2 x 3 days)	Day	6	$ 150.00	$ 900.00	
		Diver GoPro Camera System (2 x 3 days)	Day	6	$ 35.00	$ 210.00	
		Diver Digital Still Camera System (2 x 3 days)	Day	6	$ 55.00	$ 330.00	
		Survey Software	Day	3	$ 110.00	$ 330.00	
		Computer	Day	3	$ 70.00	$ 210.00	
		Scuba Equipment Set 1	Day	3	$ 72.50	$ 217.50	
		Scuba Equipment Set 2	Day	3	$ 72.50	$ 217.50	
		Scuba Equipment Set 3	Day	3	$ 72.50	$ 217.50	
		Scuba Equipment Set 4	Day	3	$ 72.50	$ 217.50	
		Telemetry Survey System	Day	3	$ 30.00	$ 90.00	
		Scuba Tanks 80 cubic ft	16 tanks x 3 days	48	$ 8.00	$ 384.00	
						TOTAL	**$ 284,310.53**

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Table 5-2. Estimated Cost breakdown of CSA hours, survey days, and travel by task for the Doctors Pass Pre-Dredging Submerged Aquatic Vegetation Survey and Data Deliverable.

Project Task	Description		Unit	Qty	Rates (USD)	Subtotal	Total
2a	**Administration, Travel, Mobilization, and Demobilization**						**$ 7,626.99**
	Labor					**$ 5,957.76**	
		SS1	Hour	2	$ 198.27	$ 396.54	
		PS3 (Diver 1) - Field Team	Hour	8	$ 159.90	$ 1,279.20	
		PS2 (Diver 2) - Field Team	Hour	11	$ 121.52	$ 1,336.72	
		PS1 Standby Diver	Hour	8	$ 108.73	$ 869.84	
		PM2	Hour	2	$ 201.47	$ 402.94	
		PM1	Hour	1	$ 140.71	$ 140.71	
		APM	Hour	2	$ 89.55	$ 179.10	
		OM	Hour	1	$ 220.66	$ 220.66	
		GISD	Hour	1	$ 140.71	$ 140.71	
		GISM	Hour	1	$ 159.90	$ 159.90	
		GISA`	Hour	2	$ 105.53	$ 211.06	
		SS1	Hour	2	$ 198.27	$ 396.54	
		OS2	Hour	1	$ 179.08	$ 179.08	
		OS1	Hour	1	$ 147.10	$ 147.10	
		T3	Hour	1	$ 118.32	$ 118.32	
		T2	Hour	1	$ 102.34	$ 102.34	
		T1	Hour	1	$ 73.54	$ 73.54	
	Travel					**$ 1,241.73**	
		Vehicle Rental	Day (1 mob/1 dmob)	2	$ 180.00	$ 360.00	
		Fuel	Gallon (1 round trip)	24	$ 5.04	$ 120.96	
		Lodging (arrival only)	3 persons x 1 nights	3	$ 187.59	$ 562.77	
		Meals Mobilization (lunch and dinner per diem)	3 persons x 1 days	3	$ 30.00	$ 90.00	
		Meals Demobilization (full day per diem)	3 persons x 1 days	3	$ 36.00	$ 108.00	

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Project Task	Description		Unit	Qty	Rates (USD)	Subtotal	Total
	Equipment					**$ 427.50**	
	1 mobilization and 1 demobilization event	Diver GoPro Camera System (2 x 1 days)	Day	2	$ 35.00	$ 70.00	
		Diver Digital Still Camera System (2 x 1 days)	Day	2	$ 55.00	$ 110.00	
		Scuba Equipment Set 1	Day	1	$ 72.50	$ 72.50	
		Scuba Equipment Set 2	Day	1	$ 72.50	$ 72.50	
		Scuba Equipment Set 3	Day	1	$ 72.50	$ 72.50	
		Telemetry Survey System	Day	1	$ 30.00	$ 30.00	
2b	**Field Survey - Mapping**						**$ 6,477.74**
	Labor					**$ 5,174.27**	
		PS3 (Diver 1) - Field Team	Hour	12	$ 159.90	$ 1,918.80	
		PS2 (Diver 2) - Field Team	Hour	12	$ 121.52	$ 1,458.24	
		PS1 Standby Diver	Hour	12	$ 108.73	$ 1,304.76	
		SS1	Hour	1	$ 198.27	$ 198.27	
		T3	Hour	1	$ 118.32	$ 118.32	
		T2	Hour	1	$ 102.34	$ 102.34	
		T1	Hour	1	$ 73.54	$ 73.54	
	Travel					**$ 875.97**	
		Vehicle Rental	Day	1	$ 180.00	$ 180.00	
		Fuel - Vehicle	Gallon	5	$ 5.04	$ 25.20	
		Lodging	3 rooms x 1 night	3	$ 187.59	$ 562.77	
		Meals (per diem)	3 persons x 1 day	3	$ 36.00	$ 108.00	
	Equipment					**$ 427.50**	
		Diver GoPro Camera System (2 x 1 day)	Day	2	$ 35.00	$ 70.00	
		Diver Digital Still Camera System (2 x 1 day)	Day	2	$ 55.00	$ 110.00	
		Scuba Equipment Set 1	Day	1	$ 72.50	$ 72.50	
		Scuba Equipment Set 2	Day	1	$ 72.50	$ 72.50	
		Scuba Equipment Set 3	Day	1	$ 72.50	$ 72.50	
		Telemetry Survey System	Day	1	$ 30.00	$ 30.00	

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Project Task	Description		Unit	Qty	Rates (USD)	Subtotal	Total
2c	**Field Survey - Quantitative Survey**						**$ 24,433.55**
	Labor					**$ 19,219.67**	
		SS1	Hour	1	$ 198.27	$ 198.27	
		PS3	Hour	48	$ 159.90	$ 7,675.20	
		PS2	Hour	48	$ 121.52	$ 5,832.96	
		PS1	Hour	48	$ 108.73	$ 5,219.04	
		T3	Hour	1	$ 118.32	$ 118.32	
		T2	Hour	1	$ 102.34	$ 102.34	
		T1	Hour	1	$ 73.54	$ 73.54	
	Travel					**$ 3,503.88**	
		Vehicle Rental	Day	4	$ 180.00	$ 720.00	
		Fuel - Vehicle	Gallon	20	$ 5.04	$ 100.80	
		Lodging	3 rooms x 4 nights	12	$ 187.59	$ 2,251.08	
		Meals (per diem)	3 persons x 4 days	12	$ 36.00	$ 432.00	
	Equipment					**$ 1,710.00**	
		Diver GoPro Camera System (2 x 4 days)	Day	8	$ 35.00	$ 280.00	
		Diver Digital Still Camera System (2 x 4 days)	Day	8	$ 55.00	$ 440.00	
		Scuba Equipment Set 1	Day	4	$ 72.50	$ 290.00	
		Scuba Equipment Set 2	Day	4	$ 72.50	$ 290.00	
		Scuba Equipment Set 3	Day	4	$ 72.50	$ 290.00	
		Telemetry Survey System	Day	4	$ 30.00	$ 120.00	

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Project Task	Description		Unit	Qty	Rates (USD)	Subtotal	Total
2d	**Analysis and Data Deliverables**						**$ 10,769.94**
	Labor					**$ 10,658.64**	
		PS3	Hour	1	$ 159.90	$ 159.90	
		PS2	Hour	34	$ 121.52	$ 4,131.68	
		PS1	Hour	32	$ 108.73	$ 3,479.36	
		GISD	Hour	1	$ 140.71	$ 140.71	
		GISA	Hour	14	$ 105.53	$ 1,477.42	
		GIST	Hour	1	$ 92.74	$ 92.74	
		APM	Hour	1	$ 89.55	$ 89.55	
		T3	Hour	1	$ 118.32	$ 118.32	
		T2	Hour	1	$ 102.34	$ 102.34	
		T1	Hour	1	$ 73.54	$ 73.54	
		SS1	Hour	4	$ 198.27	$ 793.08	
	Reimbursables					**$ 111.30**	
		Hard drive	Each	1	$ 73.50	$ 73.50	
		Fed Ex shipping	Each	1	$ 37.80	$ 37.80	
						TOTAL	**$ 49,308.22**

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Table 5-3. Estimated Cost breakdown of CSA hours, survey days, and travel by task for the Wiggins Pass Pre-Dredging Submerged Aquatic Vegetation Survey and Data Deliverable.

Project Task	Description		Unit	Qty	Rates (USD)	Subtotal	Total
3a	**Administration, Travel, Mobilization, and Demobilization**						**$ 7,428.72**
	Labor					**$ 5,759.49**	
		SS1	Hour	1	$ 198.27	$ 198.27	
		PS3 (Diver 1) - Field Team	Hour	8	$ 159.90	$ 1,279.20	
		PS2 (Diver 2) - Field Team	Hour	11	$ 121.52	$ 1,336.72	
		PS1 Standby Diver	Hour	8	$ 108.73	$ 869.84	
		PM2	Hour	2	$ 201.47	$ 402.94	
		PM1	Hour	1	$ 140.71	$ 140.71	
		APM	Hour	2	$ 89.55	$ 179.10	
		OM	Hour	1	$ 220.66	$ 220.66	
		GISD	Hour	1	$ 140.71	$ 140.71	
		GISM	Hour	1	$ 159.90	$ 159.90	
		GISA`	Hour	2	$ 105.53	$ 211.06	
		SS1	Hour	1	$ 198.27	$ 198.27	
		OS2	Hour	1	$ 179.08	$ 179.08	
		OS1	Hour	1	$ 147.10	$ 147.10	
		T3	Hour	1	$ 118.32	$ 118.32	
		T2	Hour	1	$ 102.34	$ 102.34	
		T1	Hour	1	$ 73.54	$ 73.54	
	Travel					**$ 1,241.73**	
		Vehicle Rental	Day (1 mob/1 dmob)	2	$ 180.00	$ 360.00	
		Vehicle Fuel	Gallon (1 round trip)	24	$ 5.04	$ 120.96	
		Lodging (arrival only)	3 persons x 1 nights	3	$ 187.59	$ 562.77	
		Meals Mobilization (lunch and dinner per diem)	3 persons x 1 days	3	$ 30.00	$ 90.00	
		Meals Demobilization (full day per diem)	3 persons x 1 days	3	$ 36.00	$ 108.00	

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Project Task	Description		Unit	Qty	Rates (USD)	Subtotal	Total
	Equipment					**$ 427.50**	
	1 mobilization and 1 demobilization event	Diver GoPro Camera System (2 x 1 days)	Day	2	$ 35.00	$ 70.00	
		Diver Digital Still Camera System (2 x 1 days)	Day	2	$ 55.00	$ 110.00	
		Scuba Equipment Set 1	Day	1	$ 72.50	$ 72.50	
		Scuba Equipment Set 2	Day	1	$ 72.50	$ 72.50	
		Scuba Equipment Set 3	Day	1	$ 72.50	$ 72.50	
		Telemetry Survey System	Day	1	$ 30.00	$ 30.00	
3b	**Field Survey - Mapping**						**$ 6,477.74**
	Labor					**$ 5,174.27**	
		PS3 (Diver 1) - Field Team	Hour	12	$ 159.90	$ 1,918.80	
		PS2 (Diver 2) - Field Team	Hour	12	$ 121.52	$ 1,458.24	
		PS1 Standby Diver	Hour	12	$ 108.73	$ 1,304.76	
		SS1	Hour	1	$ 198.27	$ 198.27	
		T3	Hour	1	$ 118.32	$ 118.32	
		T2	Hour	1	$ 102.34	$ 102.34	
		T1	Hour	1	$ 73.54	$ 73.54	
	Travel					**$ 875.97**	
		Vehicle Rental	Day	1	$ 180.00	$ 180.00	
		Fuel - Vehicle	Gallon	5	$ 5.04	$ 25.20	
		Lodging	3 rooms x 1 night	3	$ 187.59	$ 562.77	
		Meals (per diem)	3 persons x 1 day	3	$ 36.00	$ 108.00	
	Equipment					**$ 427.50**	
		Diver GoPro Camera System (2 x 1 day)	Day	2	$ 35.00	$ 70.00	
		Diver Digital Still Camera System (2 x 1 day)	Day	2	$ 55.00	$ 110.00	
		Scuba Equipment Set 1	Day	1	$ 72.50	$ 72.50	
		Scuba Equipment Set 2	Day	1	$ 72.50	$ 72.50	
		Scuba Equipment Set 3	Day	1	$ 72.50	$ 72.50	
		Telemetry Survey System	Day	1	$ 30.00	$ 30.00	

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Project Task	Description		Unit	Qty	Rates (USD)	Subtotal	Total
3c	**Field Survey - Quantitative Survey**						**$ 12,463.01**
	Labor					**$ 9,856.07**	
		SS1	Hour	1	$ 198.27	$ 198.27	
		PS3	Hour	24	$ 159.90	$ 3,837.60	
		PS2	Hour	24	$ 121.52	$ 2,916.48	
		PS1	Hour	24	$ 108.73	$ 2,609.52	
		T3	Hour	1	$ 118.32	$ 118.32	
		T2	Hour	1	$ 102.34	$ 102.34	
		T1	Hour	1	$ 73.54	$ 73.54	
	Travel					**$ 1,751.94**	
		Vehicle Rental	Day	2	$ 180.00	$ 360.00	
		Fuel - Vehicle	Gallon	10	$ 5.04	$ 50.40	
		Lodging	3 rooms x 2 nights	6	$ 187.59	$ 1,125.54	
		Meals (per diem)	3 persons x 2 days	6	$ 36.00	$ 216.00	
	Equipment					**$ 855.00**	
		Diver GoPro Camera System (2 x 4 days)	Day	4	$ 35.00	$ 140.00	
		Diver Digital Still Camera System (2 x 4 days)	Day	4	$ 55.00	$ 220.00	
		Scuba Equipment Set 1	Day	2	$ 72.50	$ 145.00	
		Scuba Equipment Set 2	Day	2	$ 72.50	$ 145.00	
		Scuba Equipment Set 3	Day	2	$ 72.50	$ 145.00	
		Telemetry Survey System	Day	2	$ 30.00	$ 60.00	

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Project Task	Description		Unit	Qty	Rates (USD)	Subtotal	Total
3d	**Analysis and Data Deliverables**						**$ 8,505.82**
	Labor					**$ 8,394.52**	
		PS3	Hour	1	$ 159.90	$ 159.90	
		PS2	Hour	26	$ 121.52	$ 3,159.52	
		PS1	Hour	24	$ 108.73	$ 2,609.52	
		GISD	Hour	1	$ 140.71	$ 140.71	
		GISA	Hour	10	$ 105.53	$ 1,055.30	
		GIST	Hour	1	$ 92.74	$ 92.74	
		APM	Hour	1	$ 89.55	$ 89.55	
		T3	Hour	1	$ 118.32	$ 118.32	
		T2	Hour	1	$ 102.34	$ 102.34	
		T1	Hour	1	$ 73.54	$ 73.54	
		SS1	Hour	4	$ 198.27	$ 793.08	
	Reimbursables					**$ 111.30**	
		Hard drive	Each	1	$ 73.50	$ 73.50	
		Fed Ex shipping	Each	1	$ 37.80	$ 37.80	
						TOTAL	**$ 34,875.29**

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5.4 PROPOSAL COST SUMMARY

The total proposed cost for the Nearshore Hardbottom Biological Monitoring Survey is estimated to be $284,310.53; the proposed cost for the Doctors Pass Pre-Dredging SAV Survey is estimated to be $49,308.22; and the proposed cost for the Wiggins Pass Pre-Dredging SAV Survey is estimated to be $34,875.29. This results in a combined and total proposal cost of $368,494.04.

All estimated costs reflect a T&M level of effort and actual costs charged will be based on the actual number of field days spent by CSA personnel reflecting rates for labor and equipment listed in **Attachments A** and **B**.

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.

CSA is certified by TRACE International Inc. and conducts business ethically and in compliance with the U.S. Foreign Corrupt Practices Act, U.K. Bribery Act, and other anti-bribery legislation. CSA has implemented and strictly adheres to anti-bribery, anti-corruption, and third-party risk management corporate policies and procedures (https://www.traceinternational.org/). CSA holds these standards in high regard and expects the same from its clients and subcontractors.

General Terms

- Consequences due to coronavirus HSSE have not been included but may result in contingency, including government-imposed quarantine, testing, and other unforeseen impacts.
- All staff will conform to CSA's coronavirus mitigation protocol. Any other required protocol(s) will be reconciled via a bridging document reflecting the more conservative approach among plans.
- The services described in this proposal are consistent with the Client or Regulatory Document, as well as CSA's experience providing the proposed services under both typical and atypical situations.
- Quoted rates are valid for 90 days after the date of the proposal.
- Any unspecified costs for third-party services will be billed at cost +15%.
- Payment is due within 30 days of invoice unless otherwise stated in 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.
- 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.
- Mobilization/demobilization (**Tasks 1a**, **2a**, and **3a**) includes: project management, equipment setup, travel expenses (transportation, fuel, accommodations, per diem), and labor during travel to and from project location.
- Nearshore hardbottom (NSHB) field day includes: labor for three CSA AAUS divers, equipment, fuel, accommodations, and per diem.

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- NSHB field survey operations within three separate survey efforts, any additional costs incurred due to weather and sea conditions, vessel/equipment, CSA personnel, and/or other delays will be charged at the agreed upon Equipment and Labor Rates as T&M in **Table 1**.
- Doctors Pass field survey operations within a single survey effort, any additional costs incurred due to weather and sea conditions, vessel/equipment, CSA personnel, and/or other delays will be charged at the agreed upon Equipment and Labor Rates as T&M in **Table 2.**
- Wiggins Pass field survey operations within a single survey effort, any additional costs incurred due to weather and sea conditions, vessel/equipment, CSA personnel, and/or other delays will be charged at the agreed upon Equipment and Labor Rates as T&M in **Table 3.**
- **Tasks 1a** through **1c**, **2a** through **2c**, and **3a** through **3c** assume that the following will be provided by Collier County at no cost to CSA:
    - Vessel and captain;
    - Scuba tanks;
    - HYPACK navigation;
    - Transect maintenance equipment and supplies; and
    - A vessel log of daily activities.
- NSHB 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.
- NSHB 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 data deliverable directly to FDEP. Please note that no report is required for the pre-construction SAV surveys as per the guidelines set forth by FDEP in the permit (#0331817-004-JM). 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 data deliverable directly to FDEP. Please note that no report is required for the pre-construction SAV surveys as per the guidelines set forth by FDEP in the permit (#0331817-004-JM). All deliverables will be provided electronically to FDEP, pricing for preparation of hard copies to Client is not included.
- Any presentations and meetings will be provided at additional expense.

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.
- Prices assume that the survey vessel, whether contracted by CSA or Client, is approved by the project country authority and will provide survey navigation services, ultra-short baseline capabilities, power source for integrated equipment, and deck operation assistance.
- Price assumes 12 hours 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.

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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.

8.0 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.

CP&E Coastal Planning and Engineering. 2009. Collier County Nearshore Sidescan Sonar Survey. Submitted to Collier County October 2009. 19 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.

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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.

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.

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ATTACHMENTS

Provided with this proposal under separate cover

Attachment A – CSA Total Labor Rate Schedule for Collier County

Attachment B – CSA Field Equipment Rate Schedule for Collier County

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CSA OCEAN SCIENCES INC. (CSA)
Total Labor Rate Schedule for Collier County
Effective 1 March 2024 through 31 January 2027

Labor Categories	Abbreviations	Hourly Rate
Senior Scientist 2	SS2	$ 239.84
Senior Scientist 1	SS1	$ 198.27
Project Scientist 3	PS3	$ 159.90
Project Scientist 2	PS2	$ 121.52
Project Scientist 1	PS1	$ 108.73
GIS Manager	GISM	$ 159.90
GIS Developer	GISD	$ 140.71
GIS Analyst	GISA	$ 105.53
GIS Technician	GIST	$ 92.74
Project Manager 2	PM2	$ 201.47
Project Manager 1	PM1	$ 140.71
Assistant Project Manager	APM	$ 89.55
Operations Manager	OM	$ 220.66
Operations Supervisor 2	OS2	$ 179.08
Operations Supervisor 1	OS1	$ 147.10
Technician 3	T3	$ 118.32
Technician 2	T2	$ 102.34
Technician 1	T1	$ 73.54
Technical Editor 2	TE2	$ 127.92
Technical Editor 1	TE1	$ 99.14
Document Processor	DP	$ 86.35
Clerical	CLR	$ 63.96

Field Equipment and Supplies:
CSA field equipment is billed on a time-rate basis according to CSA's Field Equipment Rate Schedule (1-2).

Travel and Per Diem:
Billed according to Section 112.061 Florida Statutes

Subcontracts and Consultants:
Billed at cost plus 5%.

Other Expendable Supplies, Materials, and Services:
Billed at cost plus 5%.

Prices are firm only when signed by an authorized company representative or when taken from current Rate Schedules.

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CSA OCEAN SCIENCES INC.
FIELD EQUIPMENT RATE SCHEDULE FOR COLLIER COUNTY
Effective 1 March 2024 through 31 January 2027

GENERAL DESCRIPTION	EXTENDED DESCRIPTION	PRICE
1 - NAV & COMM		
Survey Software	Hypack Max, Hypack Lite	110
Multibeam Survey Software	Hypack Hysweep	140
Computer	Desktop or Laptop CPU	70
Network Storage Device - QNAP	QNAP TES	110
GPS WAAS	Garmin 76, 76CSX	15
GPS GNSS - high accuracy - handheld	Trimble GeoXH	90
GPS DGPS - dual-antenna system	Trimble SPS-461	90
GPS GNSS-GLONASS & Heading System	Trimble SPS855 & SPS555H	225
GPS RTK - Sub cm accuracy	Trimble R8 RTK	600
GLONASS Navigation System	Applanix RTK POS MV Surfmaster SFF IP68	500
Diver Survey & Sonar System	Shark Marine Navigator D11	850
USBL - System w/ beacons	LinkQuest TrackLink 1500	330
USBL - High Accuaracy GyroUSBL© System w/ beacons	Sonardyne Ranger 2	2,200
Telemetry Survey System	Maxon 450MHz	30
HPR Motion Sensor	SMC IMU-108	70
Satellite Phone- Hand Held Iridium w/o usage	Iridium 9505 A	50
Satellite Phone/Internet FleetBroadband w/o usage	Thrane & Thrane Sailor 150	200
2 - REMOTE SENSING		
Hydrophone	Cetacean CR-1, C54	20
Sound Source	Ocean Sonics icTalk	100
Digital Hydrophone	Ocean Sonics icListen	200
Acoustic Recorder	Loggerhead DSG	110
Acoustic Recorder & Signal Analyzer	Develogic Sono.Vault, Sono.Vault HF	210
Pressure Sensor Array	PCB Pressure Sensors W138A01 w/ line conditioners	400
Acoustic Modeling Software	Navcon dBSea	143
Scientific Echosounder - 200kHz	Simrad EK60 w/ deck unit - 200 kHz	550
Scientific Echosounder - 38kHz	Simrad EK60 w/ deck unit - 38 kHz	750
Scientific Echosounder - 18kHz	Simrad EK60 w/ deck unit - 18 kHz	1,050
Echoview Software	Myriax LiveView	200
Single-Beam Echosounder - 200 kHz	Ohmex Sonarmite BT	100
Single-Beam Echosounder - 12/24/200 kHz	Teledyne Odom CV300 Single Beam	300
Digital Side Scan Sonar	L-3 Communications Klein 3900	400
Digital Side Scan Sonar	L-3 Communications Klein 3000	500
Digital Side Scan Sonar & Sub-Bottom	L-3 Communications Klein 3000/3310	750
Marine Magnometer	Geometrics Marine Magnometer G-822	180
Sub-Bottom System	Edgetech SB216	495
Multi-Beam Scanning Sonar	Kongsberg Mesotech M3	500
SonarWiz Processing System	SonarWiz 6	150
ASV (Autonomous Surface Vessel) Utility Class	Searobotics USV-2600	1,500
ASV (Autonomous Surface Vessel) Surveyor Class	Searobotics M 1.8	1,500
3 - REMOTE IMAGING		
MiniROV	SeaBotix LBV300-5 w/ 156m tether	950
Inspection Class ROV	Saab Seaeye Falcon ROV w/ 440m tether	1,500
Towed SD Video System (30m)	Aluminum sled w/ video, still, LED lights & lasers, 5HP winch, cable	400
Towed SD Video System (300m)	Aluminum sled w/ video, still, P&T, LED lights & lasers, 20HP winch, cable	1,850
Towed SD Video System (3,000m/6,000m)	DTS 6000V / Nexus MK E	2,000
SD Subsea Video Camera	DSP&L MSC 2000, Insite Pacific Aurora, Insite Pacific Nova	70
HD Subsea Video Camera	Insite Pacific MiniZeus	300
Digital Still Camera System	Imenco SDS 1210	350
Seabed Camera System (6,000m)	OSIL SeaCam, W&A SOLO II ARC	100
Photogrammetric Processing Software	Agisoft Metashape Professional	200
Video Data Management System	VisualSoft VisualArchive	150
Digital Video Recorder - SD	VisualSoft VisualDVR Dual	200
Digital Video Recorder - HD	VisualSoft VisualDVR-HD	300
Video & Metadata Encoder	VITEC MGW Premium Encoder HD	415

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GENERAL DESCRIPTION	EXTENDED DESCRIPTION	PRICE
4 - IMAGING / DIVER IMAGING		
Diver GoPro Camera System	GoPro Hero w/ LCD display, 2x SOLA 2000 lights	35
Diver HD Video Camera System	Canon XA-10, Sony HDR-HC7, Sony HDR-HC9	95
Diver Digital Still Camera System	Canon G11, Canon G12, Sony A5000	55
5 - WQ & PHYS O & MOORINGS		
CTD - Optical	Teledyne RDI Citadel-NV	75
CTD - Real Time only	Sea-Bird Electronics SBE-49 FastCAT	100
CTD - Deep water w/ internal data logger	Sea-Bird Electronics SBE-19Plus V2 w/ pump	175
Real Time CTD Kit (PDIM w/ deck unit)	Sea-Bird Electronics SBE-33	80
CTD Auto Fire Module	Sea-Bird Electronics AFM	40
Altimeter (6,000m)	Teledyne Benthos PSA-916	20
DO Sensor	Sea-Bird Electronics SBE-43	50
pH Sensor (1200m)	Sea-Bird Electronics SBE-18	10
pH/ORP Sensor (Redox)	Sea-Bird Electronics SBE-27	35
Turbidity Sensor	Campbell Scientific OBS-3+	15
PAR Sensor	Biospherical Instruments QSP2300	25
PAR Logger w/ GPS	Li-Cor LI-1500G/LI-192SA	30
Fluorometer	WetLabs CDOM-FLCDRTD, WetLabs ECO-CDOM CD2000	60
Chlorophyll & Turbidity Sensor	WetLabs ECO- FLNTURTD, WetLabs ECO-FLRTD	60
pH Sensor (6,000m)	AMT UT-pH-EM	40
pH/ORP Sensor (Redox) (6,000m)	AMT UT-RE-EM	60
Temperature & Depth Sensor	Seabird Electronics SBE-39	25
Digital Pressure Sensor	Seabird Electronics SBE-50	25
Depth Logger	RBR Solo3 D	30
CTD - Shallow water w/ internal data logger	YSI 650MDS (pH/DO/Turbidity), Hanna Instrument HI9829	125
Hanna Instruments Multiparameter Probe (pH/ORP/EC/DO)	Hanna Instruments HI9829 (pH/ORP/EC/DO) 10m	200
Turbidity Logger	Campbell Scientific OBS-3a	25
Lab Turbiditimeter	Hach 2100P	20
Lab Spectrophotometer	Hach DR2800	30
Lab Culture Incubator	Hach 153-2	80
Sound Velocity Profiler	AML Base X2, SV- & P-Xchange	45
ADCP - 1 MHz	Nortek AquaDopp	120
ADCP- 600kHz or 1200 kHz	Teledyne RDI WHMVM 600, WHM 1200 Rowe SeaWatch 600kHz	150
ADCP - 400kHz	Nortek AWAC 400kHz	230
ADCP - 300 kHz	Teledyne RDI WHS 300-I-UG48 Rowe SeaWatch 300kHz	250
ADCP - 300 kHz (6,000m)	Teledyne RDI WHS 300-I-UG50	260
ADCP - 75kHz w/ subsea mooring	Teledyne RDI WHLS 75-I-2	350
ADCP - 55kHz w/ subsea mooring	Nortek Signature55 55kHz w/ elliptical buoy	820
ADCP Bottom Mount	Apple Machine & Supply Bottom Mount	25
ADCP Trawl Mount	Mooring Systems MTRBM	60
ADCP Mooring Mount - Shallow water	Mooring Systems In-Line Mount, Mooring Systems WH Buoy Mounts, Mooring Systems EB-F-33/FB-33-AWAC	40
ADCP Mooring Mount 1,500m	Mooring Systems SB-35/FB-35-WH - 1,500m	60
Syntactic Float	Mooring Systems SF-30-1,000m	50
Modular Floatation - Medium	Trelleborg Micro Modular Buoy (207lbs/233lbs buoyancy)	120
Modular Floatation - Small	Trelleborg Nano Modular Buoy (73lbs/76lbs buoyancy)	40
Trawl Float	Mooring Systems 14" Triple Trawl Float w/ strength member - 800m	10
Glass Flotation Sphere	Teledyne Benthos 17" HR Glass Float - 6,000m	10
Subsurface Locator Beacon	Xeos Iridium 9603-D-I, XEOS XMi-11K	40
Tide Gauge	Valeport miniTide	50
Wave Gauge	RBR RBRvirtuoso D	25
Acoustic Release	Teledyne R12K	150
Acoustic Release	Teledyne Benthos 866-A	100
Acoustic Release Deck Unit	Teledyne Benthos UDB900M, UDB9400	125
Acoustic Modem	LinkQuest UVM 2000	100

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GENERAL DESCRIPTION	EXTENDED DESCRIPTION	PRICE
6 - SAMPLING		
Rosette - 6 Position (600m)	Sea-Bird Electronics SBE-55	200
Rosette - 12 Position (6,000m)	Sea-Bird Electronics SBE-32	400
Rosette - 24 Position (6,000m)	Sea-Bird Electronics SBE-32	600
Niskin Water Sampler 1.2L / 2.5L / 4.0L	General Oceanics Niskin 1.2L / 2.5L / 4.0L	10
Go-Flo Water Sampler - 5L	General Oceanics GoFlo 5L Teflon coated	30
Go-Flo Water Sampler - 10L	General Oceanics GoFlo 10LTeflon coated	40
Niskin Water Sampler - 30L	General Oceanics Niskin 30L	50
Peristaltic Water Pump	Geotech Environmental 900-1280	15
ROV Push Corer	ROV Product Services 3" and 4"	10
ROV Box Corer	Searobotics 0.25m x 0.25m	75
ROV Suction Sampler	Searobotics SLRP-3	650
Mega-Corer	Ocean Scientific Intl Mega-Corer 12-Core	2,500
Box Corer - Small	Gray O'Hara design 0.25m x 0.25m	50
Box Corer - Medium	Gray O'Hara design 0.35m x 0.35m	75
Box Corer - Large	Gray O'Hara design 0.48m x 0.48m	200
Smith Mac Sediment sampler	0.30m x 0.30m	100
Van Veen Sediment Sampler - Small - Young modified	0.20m x 0.20m	25
Van Veen Sediment Sampler - Medium - Young modified	0.30m x 0.30m	35
Van Veen Sediment Sampler - Large	0.51m x 0.42m	65
Ponar / Eckman Sediment Sampler	Ponar Petite 0.152m x 0.152m/2.4L, Ponar Standard 0.229 x 0.229m/8.2L Eckman	10
Sediment Sieve Station	CSA OS SWS-002	100
MOCNESS 1m	Biological Environmental Sampling System MOC-1 (w/ frame, sensors, controls & nets)	1,500
MOCNESS 10m	Biological Environmental Sampling System MOC-10 (w/ frame, sensors, controls & nets)	2,000
Midwater Trawl System	Superior Trawl 1.02 x 3.20m	650
Bongo / Neuston / Manta Net System	Bongo 0.65m Neuston 1x2m, Manta	250
Ballloon Trawl Unit	Terrebonne Otter Trawl	15
Triangle / Rock / Oyster Dredge	Kahlsico Triangular Dredge 0.60m Benthos Rock Dredge 0.41m x 0.99m Oyster	15
OST Rock Dredge System	OST 506-100-001B (2m x 0.8m)	225
Electro Fish Shocker	Smith-Root 5kW pulsed DC	60
7 - DIVING		
Scuba Equipment Set		72.50
Scuba Tank 80 cubic ft		8
Acoustic Diver Recall System		20
Diver Comm. System (deck unit, masks)		200
Brownies Hooka Compressor Set		80
Dive Tank Compressor		50
8 - DECK GEAR		
125 HP Slip Ring Winch w/ 6,000m coax	DT Marine 3125EHLWR	2,500
75 HP Slip Ring Winch w/o cable	72480 ROV/ROTV	800
60 HP Slip Ring Winch w/ synthetic line	DT Marine 3060EHLW w/ 6,000m of Unitrex HDWE 5/8"	1,500
50 HP Slip Ring Winch w/ synthetic line	DT Marine 3050EHLWR w/ 3,300m or 5,000m of ?????????????	1,300
40 HP Slip Ring Winch w/o cable	DT Marine 3040EHLWR	700
25 HP Slip Ring Winch w/ synthetic line or coax	DT Marine 3025EHLWR w/ ???????	800
20 HP Slip Ring Winch w/ towed video cable	DT Marine 1020EHLWR w/ 1,200m of Falmat FM121108-1BF	100
5 HP Slip Ring Winch w/o cable	DT Marine 305EHA	120
Pneumatic Tugger Winch w/ cable	F&M Mafco HUL40 4,000lbs	85
Hydraulic or Electric Tugger Winch	Ramsey HD-P 8000, Smittybilt X20 12K Gen2	25
1,500 - 3,000m Conductor Cable	Tyco Electronics Single Conductor A310255, Coax A302799, A301241, 7-Conductor 7H472K, 7H42RZ	200
20 HP Gas Hydraulic Power Unit	Stanley	100

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GENERAL DESCRIPTION	EXTENDED DESCRIPTION	PRICE
8 - DECK GEAR (continued)		
10T Articulating A-Frame w/ 100HP HPU	New Industries 19'x15' w/ DT Marine 100HP HPU	1,700
10T Articulating A-Frame w/ 50HP HPU	New Industries 19'x15' w/ DT Marine 50HP HPU	1,000
5T Articulating A-Frame w/ 15HP or 30 HP HPU	New Industries 17'x8' w/ DT Marine 15HP or 30HP HPU	800
Vortex Side Pole w/ saddle	FWC 30', 19'	200
Tow Block	Campbell Specialty 36"McKissick 16"	25
Digital Cable Counter & Block	Remontec DTD 20B, Measurement Technology LCI-90i	70
Dredge Pump	AMT 2"	25
Honda Generator - 2kW, 5kW	EU2000i, EB5000X	50
Generator - 13kW (Diesel)	Voltmaster 13000	110
Light Tower w/ generator	Terex AL4000	100
Gas/Electric Air Compressor	90 PSI	30
Mobile Deck Storage Container (8'x20')	8'x20'	25
Mobile Work Van (8'x20')	8'x20'	250
9 - BOATS & TRUCKS		
49 ft R/V Dolphin	Marine Science / Geophysical Survey Vessel	4,500
27ft Catamaran w/ trailer	Trailered Marine Science / Geophysical Survey Vessel	2,400
28 ft Mako Boat w/ trailer	Mako	650
25 ft Parker Boat w/ trailer	Parker	550
25 ft Pontoon Boat w/ trailer	Tri-Pontoon	200
Truck	Ford F250, F350, GMC Yukon, GMC Suburban	150

Longterm rates available

Notes: The rates listed above apply when CSA is responsible for loss and repairs. Rate schedules are subject to revision on each 1 January. This Schedule may be updated as needed throughout the year to include the addition of new equipment. Any changes to existing prices will occur only during a 1 January revision. Prices are firm only when signed by an authorized company representative or when taken form current Rate Schedules.

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