



City Council

6:00 p.m., Tuesday, August 27, 2024
 Council Chambers
 1207 Palm Boulevard
 Isle of Palms, South Carolina

Public Comment:

All citizens who wish to speak during the meeting must email their first and last name, address, and topic to Nicole DeNeane at nicoled@iop.net no later than **3:00 p.m. the business day before the meeting**. Citizens may also provide public comment here:

<https://www.iop.net/public-comment-form>

Agenda

1. **Introduction of meeting** and acknowledgement that the press and public were duly notified of the meeting in accordance with the Freedom of Information Act.
 - a. Invocation
 - b. Pledge of Allegiance
 - c. Roll Call
2. **Citizen's Comments** – All comments will have a time limit of three (3) minutes.
3. **Approval of previous meetings' minutes**
 - a. Public Hearing – July 23, 2024 [Pgs.]
 - b. Regular City Council meeting – July 23, 2024 [Pgs.]
 - c. Special City Council Workshop – August 13, 2024 [Pgs.]
 - d. Committee Meeting – [Pgs.]
4. **Special Presentations**
 Consideration of proposed FY25 CARTA Budget – Andrea Kozloski, Deputy Director of Operations & Support [Pgs. 24-30]
5. **Old Business** - None
6. **New Business**
 - a. Approval of proposal from First Tryon Advisors for development of long term capital planning model [Pgs. 31-33]
 - b. Recommendation from the Public Services and Facilities Committee to enter into a contract with the lowest responsible vendor for bulk container collection and disposal for condominiums and businesses through October 31, 2025, and after that date, businesses would be responsible for their own bulk container collection services [Pgs. 34-35]
 - c. Recommendation from the Public Services and Facilities Committee to award a five year contract to Coastal Science and Engineering for semi-annual island wide monitoring and surveying at an annual cost of \$106,000 [Pgs. 36-98]
 - d. Purchase of Mini Excavator in the amount of \$53,634.23 state contract pricing [FY25 Budget, Capital Projects Funds, Public Works - \$50,000] [Pgs. 99-102]



- e. Purchase of Skid Steer in the amount of \$62,500 state contract pricing [Phase 3 Drainage Bond Proceeds, \$159,163] [Pgs.104-107]
- f. Replacement of Recreation Dept. truck in the amount of \$41,316 state contract pricing [FY25 Budget, Muni ATAX Fund, Recreation Dept. - \$40,000] [Pg. 108]
- g. Approval of award of a contract to Icon Contracting, LLC for the construction of two (2) ADA boardwalks at 46th and 52nd Avenue in the amount of \$298,204 [FY24 State Budget Allocation \$500,000] [Pgs. 109-120]
- h. Discussion and consideration of change order from Coastal Science and Engineering for additional and ongoing emergency coordination on Breach Inlet and Beachwood East [Pgs. 121-122]
- i. Discussion of emergency conditions at Beachwood East and consideration of approval of \$200,000 expenditure for the placement of an additional 200 sandbags and 500 unfilled bags to keep on hand for future needs and ongoing maintenance.

7. Boards and Commissions Report

- a. Board of Zoning Appeals – no meeting in August
- b. Planning Commission – no meeting in August
- c. Accommodations Tax Advisory Committee – no meeting in August
- d. Environmental Advisory Committee – no meeting in August

8. Ordinances, Resolutions and Petitions

a. Second Reading

b. First Reading

c. Resolutions and Proclamations

- i. Resolution 2024-05 Authorizing consumption of beer and wine only, road closures and amplification of music at the IOP Connector Run and Walk for the Child on October 5, 2024 [Pgs. 123-124]
- ii. Resolution 2024-06 Authorizing consumption of beer and wine only, road closures and amplification of music at the Lowvelo Bike Ride on November 2, 2024 [Pgs. 125-126]
- iii. Resolution 2024-07 Authorizing consumption of beer and wine only, road closures and amplification of music at the Holiday Street Festival on December 7, 2024 [Pgs. 127-128]

9. Executive Session –

In accordance with S.C. Code Section 30-4-70(a) (2) to receive update and legal advice protected by the attorney client privilege concerning Case No. 2023-CP-10-00201, Wild Dunes LLC v IOP. Council may take action on matters discussed in Executive Session upon returning from Executive Session

10. Adjournment



PUBLIC HEARING
5:45PM, Tuesday, July 23, 2024
1207 Palm Boulevard, Isle of Palms, SC and
broadcasted live on YouTube: <https://www.youtube.com/user/cityofisleofpalms>

MINUTES

1. Call to order

Present: Council members Hahn, Ward, Anderson, Bogosian, Miars, Campsen, Pierce, and Mayor Pounds

Absent: Council Member Carroll

Staff Present: Administrator Fragoso, Director Kerr

2. Purpose –Public Hearing of the following ordinances:

i. Ordinance 2024-03 – an ordinance to amend section 5-4-128 Temporary Signs and section 5-4-141 Prohibited Signs

Administrator Fragoso explained that this ordinance will prohibit signs in the public right of way and will bring the City inline with State law and a Supreme Court ruling prevents the regulation of signs based on content. Signage less than 8 square feet is permitted on private property. Following a recommendation by the Administration Committee, this ordinance was approved for First Reading on April 23, 2024.

ii. Ordinance 2024 – 05 – An ordinance to amend section 5-4-12, and 5-4-13 and establish stormwater management requirements for new construction in SR-1, SR-2 and SR-3, and to allow properties to be elevated up to 7.4’ in elevation with the approval of a plan certifying that the post construction stormwater pattern will result in the same or less runoff than the pre-construction stormwater pattern

Administrator Fragoso said, “Ordinance 2024-05 was approved for First Reading on May 28, 2024 and was reviewed and recommended by the Planning Commission and the Public Services & Facilities Committee. This ordinance would require new construction projects in the SR-1, SR-2, and SR-3 districts to retain stormwater for new impervious surfaces. This amount would be equal to about a 10-year storm event and the retention can be achieved by depressing an area of the yard or installing under-gravel or vault systems or a combination of the two. The ordinance would also allow owners of low lots to elevate their property up to 7.4’ of elevation with the approval of a plan by the Zoning Administrator. The plan would have to certify that the post-construction stormwater pattern will not result in additional stormwater runoff or that the runoff will not be done in an accelerated manner.”

3. **Adjournment**

There being no public comments for either ordinance, Council Member Bogosian made a motion to adjourn. Council Member Pierce seconded the motion. The meeting was adjourned at 5:48pm.

Respectfully submitted,

Nicole DeNeane
City Clerk



CITY COUNCIL MEETING
6:00pm, Tuesday, July 23, 2024
1207 Palm Boulevard, Isle of Palms, SC and
broadcasted live on YouTube: <https://www.youtube.com/user/cityofisleofpalms>

MINUTES

1. Call to order

Present: Council members Bogosian, Anderson, Ward, Miars, Pierce, Campsen, Hahn, and Carroll, Mayor Pounds

Staff Present: Administrator Fragoso, Director Kerr, City Attorney McQuillin, various department heads

2. Citizen's Comments

Cindi Solomon, 130 Ocean Boulevard, expressed concern about the vulnerability of the homes at the south of the island as the height of hurricane season approaches and with the news that the USACE project does not anticipate placing sand on the beach until the beginning of October. She would like City Council to place sandbags until the start of the project using monies from the Beach Preservation Fund, but additionally, she would like City Council to pass an emergency ordinance allowing the placement of emergency erosion control structures in that area.

Henry Haggerty, 20 41st Avenue detailed a recent interaction he and his dogs had with a coyote while out for a walk on the beach. He would like City Council to trap and remove and or kill the coyotes.

3. Approval of previous meetings' minutes – City Council Meeting of June 24, 2024

MOTION: Council Member Anderson made a motion to approve the minutes, and Council Member Bogosian seconded the motion. The motion passed unanimously.

4. Special Presentations

5. Old Business

A. Discussion of emergency conditions on the 200 block of Ocean Blvd. due to beach erosion and consideration of options

Mr. Stephen Traynum of Coastal Science said the USACE will start placing sand on Sullivan's Island first as the sand in the borrow area designated for the Isle of Palms needs to be dewatered. They are currently clearing the areas that will be receiving sand in preparation for sand placement to start at the beginning of October.

Mr. Traynum shared updates of beach nourishment-related projects. He suggested that some additional protections could be added to areas near the south end of the island to protect properties until the USACE begins placing sand. He said they did receive a “reasonable bid” for moving that sand to kickstart the dune restoration process after the sand has been placed.

The permit for the shoal management project is out for public comment until August 23. This permit is “restricted to harvesting sand from the attaching shoal and the beach just on the landward side of the shoal.” He hopes this project will begin in early 2025.

More sandbags will be placed in vulnerable areas at Beachwood East beginning tomorrow.

Speaking about the emergency conditions on the south end of the island, Mr. Traynum said the area north of 4th Avenue is generally stable; there is mild chronic erosion in the 200 block; and there have been significant gains south of 2nd Avenue.

Regarding the rebuilding of the dune in that area, Mr. Traynum said, “We are looking at about 20,000 yards that would be necessary to build a 6’ tall, 20’ wide [dune], and that would go from 2nd Avenue up to 10th Avenue. Plus the sand fence and vegetation. We had originally planned about 30,000 yards would be shifted from where the Corps places it to that erosional area south of 2nd Avenue, but that is where we have seen a lot of recovery, and if I had to guess, there is probably more than 30,000 yards accumulated there already. Not suggesting that we shouldn’t do any work there, but we will want to look to look at the conditions close to the time and pick a number on what we feel like is necessary to get everybody on a very healthy condition.”

Mr. Traynum reminded everyone, “The State allows for emergency work when properties are within 20’ of the high tide line, and that emergency work includes scraping the beach, the installation of sandbags, or trucking in sand. There was a very recent change in the regulations that allows the State some flexibility to go beyond that 20’ criteria for circumstances where basically logistics make it make sense to do that.” Any homeowner can apply to truck in sand at their own expense even outside of emergency conditions.

Mr. Traynum spoke about the options for work at the south end including the continued scraping of sand which can inhibit natural restoration of the beach profile, placement of sandbags to offer protection during storm events, and or the building of a continuous revetment of sandbags. The same contractor placing bags on the east end of the island could place these bags on the south end to shorten the wait time for the building of such a revetment.

A full sandbag revetment of 1200’ would cost \$360,000 to install. Sandbags placed at the properties within the 20’ critical area (approximately 430’) would cost \$129,000 to install. The final cost would need to include the cost of the bond. Removal costs are approximately 10% of installation costs.

Council Member Ward expressed concern about how long this project has taken to start. He asked if there was any assurance they could get from USACE. Administrator Fragoso said it has been a challenge for the City to deal with a project they are not managing. Mayor Pounds added that he has heard from other federally-managed beaches about the lack of control, communication, and effort.

MOTION: Council Member Bogosian made a motion to approve the building of a full sandbag revetment between 130-304 Ocean Boulevard and to pay for it out of the Beach Preservation Fund under an emergency contract exempting the City from the procurement process in order to place the sandbag order immediately. Council Member Campsen seconded the motion.

Administrator Fragoso added that with this emergency approval the City will be using the same contractor who is currently installing sandbags at Beachwood East, and that contractor was obtained through a competitive bid process. She said, “So we would be using the lower bid for that project, so it would technically be done as a change order to that existing contract. We have about \$600,000 left from the total fund that Council approved last year. So then we have some invoices that are coming in for the scraping in the past couple of months, but we believe that would be enough to cover the \$400,000 effort.”

Regarding the trucking in of sand, Administrator Fragoso said, “The question about trucking in sand, the permit that the City obtained last summer to truck in sand that we used expired this month, so we are going through the process with the Bureau of Coastal Management (BCM) to renew that, and that would be available to anyone. We are not only renewing the original area which was Breach Inlet through 314, which was the area that was highly erosional last year, but extending that up to 914. So that would be available for property owners to do at their own expense if they want to truck in sand.”

Director Kerr said should anyone decide to truck in sand they would need to coordinate that effort with the City.

VOTE: A vote was taken with all in favor.

6. New Business

A. Discussion and consideration of a 6-month extension with existing bulk services collection provider, Carolina Waste & Recycling for commercial garbage collection, and discussion regarding future policy related to commercial garbage collection

Administrator Fragoso reviewed the current practices and fees for the Charleston County Solid Waste User Fee for homes and businesses and the Garbage Collection Service fee charged by the City to island businesses. She also explained how the fees are determined and split by the ten Front Beach businesses that use the municipal compactor.

As previously explained, the current vendor who collects the garbage from the bulk containers across the island has quadrupled their price per yard. The matter was discussed by the Public Services & Facilities Committee who recommends the City enter into a 6-month contract with the existing bulk services collection provider to ensure continuity of service and to give the City time to develop a policy for the collection of bulk containers moving forward. The cost of such an extension is \$177,000.

The current vendor needs to know the City’s decision immediately because it has need of these containers elsewhere. After the 6-month extension, the City could transition to serving only those

containers at condominium complexes, making the businesses responsible for the collection of their own trash or responsible for paying the expense incurred by the City. Front Beach businesses that use the compactor would be billed for the cost of their garbage collection and user fee on an annual basis.

Council Member Ward asked what happened to get the City in this position. Administrator Fragoso said the contract expired during the pandemic and the City continued on a month-to-month contract with the same provider. The company was then bought out.

Council Member Ward expressed concern about burdening the businesses with this expense. Administrator Fragoso explained that while the City recognizes the economic challenges for the businesses, other municipalities do not cover this cost for their businesses.

Council Member Hahn offered a mathematical solution resulting in the City only needing to account for an extra \$100,000 to continue to cover this cost and ensure continuity of service. He suggested moving forward with the 6-month contract to give the City time to figure out how to cover this difference.

Administrator Fragoso pointed out that a new policy would need to be in place in 3 months so that if a new provider is selected, they will have time to secure and install the containers.

MOTION: Council Member Pierce made a motion to approve a 6-month contract extension with Carolina Waste & Recycling for commercial garbage collection. Council Member Miars seconded the motion. A vote was taken as follows:

Ayes: Campsen, Pierce, Anderson, Ward, Bogosian, Miars, Pounds
Nays: Hahn, Carroll

The motion passed 7-2.

B. Discussion and consideration of approval of replacement of three patrol vehicles for the Police Department [FY25 Budget, Police Department, Capital Projects Fund \$55,000, Muni ATAX \$55,000, Hospitality Tax \$55,000]

MOTION: Council Member Ward made a motion to approve, and Council Member Anderson seconded the motion. The motion passed unanimously.

C. Discussion and consideration of approval of taser upgrade five-year subscription – Year 1 Cost not to exceed \$18,171 [FY25 Budget, Police Department, State ATAX Fund]

D. Discussion and consideration of approval of drone hardware and eight-year software subscription – Year 1 cost not to exceed \$23,000 [FY25 Budget, Police Department, Hospitality Tax and State ATAX Funds]

MOTION: Council Member Ward made a motion to approve the purchase of the taser upgrade subscription, the drone hardware, and the eight-year software subscription. Council Member Anderson seconded the motion. The motion passed unanimously.

E. Discussion and consideration of issuing letter of intent for purchase replacement of 2003 95' Ladder Truck in FY27 (18–21-month lead time for 1 construction) in the amount of \$2.225 million

Administrator Fragoso said this letter of intent will secure the price and the City's place in the production line. The debt for this purchase will not be incurred until FY27. The letter of intent is recommended by the Public Safety Committee.

MOTION: Council Member Ward made a motion to approve, and Council Member Anderson seconded the motion. The motion passed unanimously.

F. Discussion and consideration of sole source contract with Schindler for elevator replacement in Fire Station 2 in an amount not to exceed \$68,000 [FY25 Budget, Fire Department, Capital Projects Fund]

Administrator Fragoso said the current elevator was ruined by flooding, which should not happen again now that the drainage has been fixed in that area.

MOTION: Council Member Anderson made a motion to approve, and Council Member Ward seconded the motion. The motion passed unanimously.

G. Discussion of Fire Department restructuring proposal for command staff

Administrator Fragoso said the change being suggested by Chief Oliverius is in an effort to enhance effectiveness and deal with demand. No additional staff will be needed to effectuate the change; only reclassification of staff. A new job description will be presented to the Administration Committee next month.

7. Boards and Commissions Reports

- A. **Board of Zoning Appeals** – minutes attached
- B. **Planning Commission** – no meeting in July
- C. **Accommodations Tax Advisory Board** – no meeting in July
- D. **Environmental Advisory Committee** – minutes attached

8. Ordinances, Resolutions, and Petitions

A. Second Reading

i. Ordinance 2024 – 03 – An ordinance to amend section 5-4-128 Temporary signs and section 5-4-141 Prohibited signs

Administrator Fragoso explained the change to the ordinance since First Reading “prohibits any sign on any public right of way. So political signs would be available for people to place on private property as long as they meet the requirements which are currently in the code. They can't be more than eight square feet of size.”

MOTION: Council Member Miars made a motion to approve the ordinance as amended. Council Member Campsen seconded the motion. A vote was taken as follows:

Ayes: Campsen, Pierce, Anderson, Bogosian, Miars, Hahn, Pounds
Nays: Ward, Carroll

The motion passed 7-2.

ii. **Ordinance 2024 – 05 – An ordinance to amend section 5-4-12, and 5-4-13 and establish stormwater management requirements for new construction in SR-1SR-2 and SR-3, and to allow properties to be elevated up to 7.4’ in elevation with the approval of a plan certifying that the post construction stormwater pattern will result in the same or less runoff than the pre-construction stormwater pattern**

Director Kerr explained that since First Reading the Public Services & Facilities Committee recommended that pools be included in the lot coverage trigger that requires stormwater management.

MOTION: Council Member Ward made a motion to approve the ordinance as amended. Council Member Miars seconded the motion. The motion passed unanimously.

B. First Reading

i. **Ordinance 2024 – 06 – An ordinance to prohibit feeding wildlife**

MOTION: Mayor Pounds made a motion to suspend the rules of order to allow for discussion of the ordinance. Council Member Hahn seconded the motion. The motion passed unanimously.

Administrator Fragoso explained this ordinance “came as a result of some resident concerns that we started hearing earlier this year when the coyote situation was out of hand and we were seeing a lot of encounters and sightings, and one of the things, and part of the conversations that the Chief has had with DNR that was identified as an unintended consequence was people intentionally leaving food out to feed raccoons or other wildlife was really encouraging activity of coyotes in the area. In addition to that, we have heard from a couple residents that are having problems with neighbors intentionally feeding raccoons and their concerns about public safety because of raccoons defecating in their yards and some of the diseases that they may bring, and our inability to address that because there was no section of the code that would allow our Police Department to, other than actively encourage people to stop doing it, there was nothing that would allow us to require that activity to be stopped.”

She said Chief Cornett developed the ordinance based on similar ordinances in other municipalities. She read the definition of wildlife from the ordinance and noted that feral cats are not included as they are considered domesticated.

Council Member Miars spoke about why it is bad for the raccoons to be fed by people. She would like to have the Environmental Advisory Committee discuss the feral cat issue to see how that might be handled better.

Council Member Hahn said the ordinance as written outlaws bird feeders. He also believes the City’s nuisance ordinance should be the ordinance the police use to stop the feeding behavior.

Council Member Bogosian said the intent of the ordinance is not to outlaw bird feeders and that language could be added in to clarify that intent. Council Member Ward said he was against the ordinance if it prohibits the feeding of deer.

Chief Cornett explained, “The reason we chose to move with this, I don’t feel comfortable that charging for feeding racoons falls under the public nuisance ordinance as it is written. I wouldn’t feel comfortable making that charge and bringing it here. I don’t feel that it meets the definition or the ordinance as it is outlined. And so, I think when you have something that is a little more well defined, it is easier to defend in court when you make that charge. I did also agree with the bird feeder. It was never the spirit to outlaw somebody from feeding wild birds. We do it at our house. It would be something I think we want to add the language in there that says hey, this does not apply to feeding normal birds. But what we don’t want is people feeding water fowl as it is defined in here because they have a purpose, and they eat the way they do, and they do the things that wild animals do to protect our community and protect themselves from interacting with humans and keep those diseases away from us. It is as Councilperson Miars stated. It is just as much to keep those animals safe as it is to keep people safe and to reduce interactions between humans and wild animals, which was something when I met with USDA, they highly recommended. When we talked about coyotes and trying to keep that interaction between humans and coyotes down, one way that they recommended that was to reduce feeding of wild animals that can be seen as prey that a coyote might come and attack in a residential community or where people gather.”

Council Member Hahn said James Island passed a similar ordinance recently and residents have been calling on each other. Chief Cornett said the residents are already doing that. He said he has **successfully prosecuted these sorts of charges in his previous municipality.**

MOTION: Council Member Bogosian made a motion to approve, and Council Member Anderson seconded the motion. A vote was taken as follows:

Ayes: Campsen, Pierce, Anderson, Bogosian, Miars, Carroll, Pounds
Nays: Ward, Hahn

The motion passed 7-2.

ii. Emergency Ordinance 2024 – 03 – An emergency ordinance to allow property owners near Breach Inlet to install revetment/seawall for emergency erosion control

Mayor Pounds: You recall in February we passed a similar ordinance with a little bit different language around the engineering in February to allow residents in the affected areas to build a structure. No one did or was able to based on either engineer requirement or the OCRM markings. A few residents, as you heard tonight, appealed to the board of OCRM which outlined some parameters that the residents needed to complete, and then OCRM would revisit in 60-90 days to remark since the Army Corps project, as you heard tonight, probably at best is October 1st. As we sit here today, I felt that we needed at least to have the conversation about allowing an owner, if they want to build some type of structure as approved in our ordinance to at least have that conversation. Again, given that we have had this delay.

Director Kerr walked through the proposed ordinance: “I think first off, the whereases were from the old ordinance. We just copied and pasted it, and I think those, I think legal staff has looked at that and felt those should be updated to be more current than they are. Also, since the last time you all saw this ordinance, OCRM’s name has changed, so that would need to be amended throughout. So those at kind of a high level would need to take place, and I’ll just go through the process that an owner would go through and the various requirements that they would need to comply with. First of all, this ordinance only would pertain to those properties between 100 and 914 Ocean Boulevard, so it would not apply in other areas. The wall, and it was talked about, the requirement for an engineer statement, the wall would still have to be designed by an engineer or the revetment, so that is still in there, but the requirement for that statement that we talked about has been removed and replaced by the requirement for the owner to provide a hold harmless agreement that would be drafted by the City’s legal staff and entered into protecting the City in event damage by the wall or lawsuit from the wall. The wall would still have to be entirely landward of, and I am going to call them BCM, the old OCRM, that requirement is obviously still in there, whereby they would go through a process and have BCM mark physically on the ground their jurisdiction and then also generate an exhibit that they could submit to our offices showing where their jurisdictional boundaries are. This wall, the excavation, and access to build the wall would all have to happen landward of their jurisdiction. There is a carryover in here from the original ordinance that would say that the wall can go no farther seaward than 20’ seaward of the maximum building line. In those areas, that line is, it was kind of the straightest line that the Council at the time could come up with. We talked about different scenarios. Ultimately decided that that was kind of the closest thing to a straight and continuous line. So that is also carried over in this emergency ordinance. The wall could be no taller than 10’ above the engineering standard that they use today, the NAVD88 standard, says 10’, but in your mind’s eye, that is above sea level. That probably translates to 18”, 2’ above the ground as it sits out there. In times when the wall is not protecting from erosion, so outside of erosional events, the walls would have to be completely covered with sand, and I think that is the bulk of the ordinance. It would only open this window for 60 days from the date that you were to enact it.” Construction would not need to be completed within 60 days. Only the issuance of a permit needs to happen within 60 days of enactment. The City would not issue a permit to construct without a signed hold harmless agreement from the property owner.

City Attorney McQuillin said that the ordinance needs to be approved as amended for the updated whereases and the OCRM name change, and that because it is an emergency ordinance, it would need a two-thirds affirmative vote to pass.

Council Member Hahn said, “I can’t support this, and there are two main reasons. One is it applies to just a very small number of residents and not to everybody. If we are going to do something then allow everybody to do it and not just a small group. The second issue which I think is more important than that is we as a government are charged with protecting the residents to a reasonable degree. We cannot protect some residents to the potential detriment of others, and we had in the original ordinance language that took care of that because an engineer would certify that the wall would not hurt neighboring properties, and no engineer would do that because we all know that a wall will in fact hurt neighboring properties in an erosional event

because you have the backwash on both sides. And so, I cannot support giving protections to one resident at the expense of the neighboring residents.”

Council Member Campsen said, “This is probably the 12th time I’ve read this ordinance, and this morning I had a bit of an epiphany, I think. I’m not sure, but it occurred to me as I got down to the bottom of the first page that the issue we have is with the zoning ordinance. It’s the 250’ line, and it is the prohibition against building of seawalls, and in our zoning code, we have a process through which property owners who feel like they are suffering a hardship are able to go and make an appeal, and it goes to the Board of Zoning Appeals. Just from a strictly procedural standpoint, I am starting to wonder if this is the way we should be entertaining this. To me, as a prior member of the Board of Zoning Appeals, and I’m a little embarrassed to say that it didn’t occur to me before now, but it seems like we are effectively running an end run around the Board of Zoning Appeals, and that entire process that a homeowner is entitled to, it feels like kind of an emergency temporary variance request, and those are kind of hard to give or get. I think that at a Council level we could be having the discussion about the revocation of the 250’ line. We could be talking about whether we as a community want to continue to have a prohibition in our zoning code against seawalls. But when I kind of backed out and quit looking at the tree and kind of looked at the forest, I’m wondering if procedurally we are evening handling this in an appropriate manner.

City Attorney McQuillin replied, “This is in you all’s land development regulations, which has a variance procedure laid out just a couple section either before, below this section in the ordinance.”

Director Kerr added, “The standard kind of thought in zoning and land use regulation is that a variant should not, the Board of Zoning Appeals is a quasi-judicial board. They should not be using that kind of judge. They shouldn’t be substituting policy. They shouldn’t be creating policy, from my perspective. If the Board were to start approving seawalls when seawalls were needed that would be usurping this group’s authority to establish the policy. So, from my perspective, I think it is squarely a policy decision that would land with this Council and not a kind of more of a judicial question as to whether, they would have to consider if there is something unique about the shape, terrain, topography of the property. Clearly what is different about them is they are eroding. Clearly when there, it is in the ordinance. The only time you need an erosion control device is when it is eroding.”

Council Member Campsen asked, “Isn’t the 250’ line a building? It’s like a building, like any other. It’s a setback. It’s a front side, rear, whatever. I mean, that is the issue. Here is the 250’ line.”

Director Kerr responded, “So they certainly could request it. I think there is clearly a process in the code whereby they could request it, and it would be for them to make the judgement as to whether it met the statute.”

City Attorney McQuillin said, “I think they are probably still going to run into the same because we had the language in the ordinance that the engineer will certify it won’t cause issues for the downdrift or adjoining lots. The zoning, the variant standard that would apply here says that

won't be detrimental to adjacent property or the public interest, and so we are still back at the same issue as to whether this is going to cause issues to the neighbors."

Council Member Bogosian responded, "I think we are at this spot because it is not a permanent change. It is an emergency that we are asking for 60 days. That kind of goes around that, but beyond that, I am against it maybe for similar, maybe different reasons than Blair. But I'm at the same place I was the first time this came up. I truly believe that homeowners ought to be responsible for protecting their own properties, and I'd be all for this if we didn't have some arbitrary language in here about 20'. That is very arbitrary. We pick 20' for what reason, and I think it puts some homeowners in a very difficult position of making a decision to tear out their pool whether they put a wall in, and I am just fundamentally against it. I think the City ought to get out of the way. If the State says that they don't have jurisdiction at a point, that a homeowner wants to put protection in, they should be allowed to be able to put protection in for the property. So I guess I am against it for a different reason than Blair, but I'm still against it."

Council Member Miars said, "So this taking out the requirement for the engineer, I think it's interesting that we just passed an ordinance for building up your property that required an engineer sign off and say that it was not going to cause harm to adjacent property owners, and now we are saying that we are going to pass something that does not have that requirement because we can't find an engineer that will say it won't cause harm to adjacent property owners. I think that's probably why we should not pass this." She later added that the sandbags approved earlier in the meeting are "the most that the City can and should do to protect these homes in an emergency situation."

Administrator Fragoso noted, "I think what we heard from Stephen and what we heard from some of the residents that would like to have the opportunity to do it are envisioning something like a thin sheet pile that goes right along the structure of the property to help support the integrity of the structure, not a large seawall that would be visible."

Council Member Hahn said, "Our own coastal engineer tonight was talking about backwash at the end of walls and said that if there is a break in the sandbag wall that we've now voted to build that there would be backwash, which is why we voted to not have that and to go all the way across. Exact same thing is going to happen with seawalls if one person builds a seawall and somebody else doesn't."

Mayor Pounds said, "I don't know what the right thing to do is, and I don't think any of us do. We can sit here all day long and think about backwash, side wash, whatever wash, but I felt it important enough to put it back on the agenda just to give the few homeowners that fit the parameters, that want to protect their property, I mean, this is a \$300-\$400,000 expense on their nickel that they are going to do. It is not the seawall that is a blight on our beach. Today it is a subterranean sheet, to your point and to the Citizen's Comment point tonight, that you are really not going to see."

VOTE: A vote was taken as follows:

Ayes: Anderson, Ward, Pounds

Nays: Miars, Campsen, Hahn, Bogosian, Pierce

The motion failed 3-5. Council Member Carroll had left the meeting prior to the vote.

C. **Resolutions and Petitions -- none**

9. **Executive Session – not needed**

10. **Adjournment**

Council Member Ward made a motion to adjourn, and Council Member Hahn seconded the motion. The meeting was adjourned at 8:09pm.

Respectfully submitted,

Nicole DeNeane

City Clerk



SPECIAL CITY COUNCIL MEETING -- WORKSHOP

5:00pm, Tuesday, August 13, 2024

1207 Palm Boulevard and

broadcasted live on YouTube: <https://www.youtube.com/user/cityofisleofpalms>

MINUTES

1. Call to order

Present: Council members Bogosian, Anderson, Ward, Miars, Pierce, Carroll, and Mayor Pounds

Staff Present: Administrator Fragoso, Director Kerr, various department heads

Mayor Pounds thanked Council Member Campsen for her many years of service to the City. She has resigned from City Council and will be moving off the island. An election for her open seat will be held in November.

2. Citizens' Comments -- none

3. Special Presentations

A. Discussion with lobbyists regarding upcoming legislative session and city's policy and funding priorities –Jim Merrill, Boyd Brown, TT&B Government Affairs

Council members provided direction to Mr. Brown and Mr. Merrill about the areas in which they should lobby for the island. State-level beach nourishment funding, municipal-level flexibility to levy new fees and or taxes to support beach nourishment, funding for capital improvements that could free up money for beach nourishment, and flexibility of the use of the 30% ATAX funds earmarked for tourism promotion were the topics of focus suggested by Council members.

Mr. Merrill and Mr. Brown said Council may want to seek funding from other State-level agencies such as the Capital Reserve Fund and PRT. They also suggested speaking with the new leadership at SCDOT about the IOP Connector and improvements to Palm Boulevard.

City Council will vote on the funding priorities they wish for Mr. Boyd and Mr. Merrill to focus on at their August meeting.

B. Presentation of proposed long term financial and capital planning model – David Cheatwood, First Tryon Advisors

Mr. Cheatwood described the financial models he will provide to the City that will help with their financial planning. He shared screenshots of the tool and explained some of its capabilities. Council members suggested that Mr. Cheatwood look at the City's current budget model to see if and how it could be integrated into his financial planning tools.

Mr. Cheatwood explained that this tool is not proprietary and will be the City's product. City Council will vote on this proposal at their August meeting.

C. Review of road closure plans for Lowvelo Bike Ride on November 2, 2024

Mayor Pounds said that City Council has already approved this event. Administrator Fragoso said Lowvelo is anticipating a larger event this year, and they have been in conversations with Chief Cornett and Chief Oliverius about the event. Mr. Chris Winn of Lowvelo said they are looking to have about 2,000 participants at this year's event. He shared their plan to accommodate parking. Council Member Ward asked about the use of barricades, and Mr. Winn said they will not be used. He said they have spoken to Front Beach business owners and will also be sending direct mailers to everyone along the route.

4. Dashboard of City Operations and Short-Term Rental Report

Administrator Fragoso reported that one of the three open paramedic positions has been filled. There are two police officer and two BSO vacancies. Police Department charges related to traffic and livability are steadily increasing. Police Department calls for service in July were slightly lower than July 2023. Calls for service for the Fire Department were higher in July and were mostly EMS and rescue related.

She pointed out that a record amount of garbage and yard debris was collected in July. Director Kerr said staff suspects there is some debris being "imported" by contractors working on the island. Staff has been discussing ways in which to limit the amount of yard debris being put out on the street and will bring the issue to the Public Services & Facilities Committee.

As of August 6, 2024, 1,736 short-term rental licenses had been issued with 18 pending. At this same time last year (8/18/24), 1,786 short-term rental licenses had been issued.

5. Departmental Reports – in the meeting packet

6. Financial Review

A. Financial Statements and project worksheets

Director Hamilton said that most of what was collected in July has been accrued to FY24. Expenses are tracking as expected. The City has \$45.9 million in cash and earned \$203,000 in interest last month. Approximately \$282,00 of the ARPA funds have been spent on the public dock to date.

Municipal Accommodation taxes show that the City is 11% behind prior budget, but 15% of the funds remain uncollected. All State Accommodation taxes for FY24 have been received and show a decrease of 6% compared to last year but are 7% ahead of what was budgeted. The County ATAX pass-through is 3% behind prior year but the City is still waiting to collect 30% of those funds. Hospitality taxes for FY24 were 12% ahead of prior year and were 29% higher than budget. Local Option Sales Tax is 2% ahead of prior year and the City is waiting to collect 14% to meet the budget of \$1.1 million.

Preliminary and unaudited numbers for FY24 show a \$1.1 million surplus of revenues over expenditures. She attributes that to property taxes (7% ahead of budget), building licenses (36% ahead of budget), and rental licenses (4% ahead of budget). She noted that parking revenues are down, and Administrator Fragoso said that is likely due to less favorable weekend weather in July. The auditors will be here in September.

B. Discussion of financial goals for FY26 and forecast years

Mayor Pounds asked Council in what areas they need more financial information from staff that will help in preparing fiscal goals for FY26 and beyond. Council members requested trends for the tourism funds, grant income from the last several years, and future cash needs for projects.

7. Procurement

A. Purchase of Mini Excavator in the amount of \$53,634.23 state contract pricing [FY25 Budget, Capital Projects Funds, Public Works - \$50,000]

Administrator Fragoso said this purchase has come in slightly higher than budgeted.

B. Purchase of Skid Steer in the amount of \$62,500 state contract pricing [Phase 3 Drainage Bond Proceeds, \$159,163]

Administrator Fragoso said that this purchase is not in the budget but will be purchased from the remaining Phase 3 Drainage Bond proceeds. She will provide a justification memo for the purchase as it is part of strengthening the City's stormwater program.

C. Replacement of Recreation Dept. SUV in the amount of \$41,316 state contract pricing [FY25 Budget, Muni ATAX Fund, Recreation Dept. - \$40,000]

This purchase will also come in a little bit over budget.

D. Approval of contract for the construction of two (2) ADA boardwalks at 46th and 52nd Avenue [FY24 State Budget Allocation \$500,000]

Administrator Fragoso said 46th and 52nd avenues have been identified as locations where ADA boardwalks and parking can be added. Staff is reviewing the four bids received for the projects and anticipates being able to make a recommendation to Council at their August meeting.

E. Report to council per procurement code:

i. **UTV with plow attachment for Beach Services \$20,349.65 [FY25 Budget, Hospitality Tax Fund \$22,000]**

ii. **UTV for Beach Services \$18,325.39 [FY25 Budget, State ATAX Fund \$22,000]**

iii. **Golf cart replacement \$9,444.75 [FY25 Budget, Hospitality Tax Fund \$12,500]**

Administrator Fragoso said all three purchases came in under budget and are funded by tourism funds.

8. **Capital Projects Update**

Administrator Fragoso said there is still no word about the grant for the Waterway Boulevard project. Thomas & Hutton expects to complete the design (of higher elevation) and begin the permitting process for that project in early September. The permitting process will be at least 12 months. Thomas & Hutton is working closely with the Wild Dunes Resort on the timing of this project. Director Kerr said there is a City procurement issue that needs to be dealt with for this project, but they are working it out.

Now that Phase 3 of the drainage project is complete, work on Phase 4 – Palm Boulevard between 38th and 41st avenues – is beginning. Thomas & Hutton anticipates having the design complete in a few weeks so they can begin the permitting process, which is a shorter and simpler application as it does not involve any critical areas. They hope for construction to begin next fall.

Seamon & Whiteside will present staff with a draft of the Sea Level Rise Adaptation Plan in the next week or two. It should be ready to present to Council at their September workshop.

The gangway at the public dock is being fabricated. Work is still being done on the floating docks, but the dock should be available to the public before that work is complete.

Some emergency sand scraping was done in the 200 block of Ocean Boulevard after last week's storm. The sandbags for the 130 to 304 section of Ocean Boulevard have been delivered to the contractor and are being filled. They should begin to place them on the beach in a week. Extra sandbags were placed at Beachwood East prior to the storm.

Administrator Fragoso met with USACE who said the storm did not delay their progress on the beneficial use project. Sand placement for the Isle of Palms is still anticipated for the last week of September or the first week of October.

She also reported that the City did receive the permit from the State to allow the City to place sandbags at Breach Inlet. She said, "We are processing the escrow payment. We have to give a check to OCRM for the cost of removal. So we are processing that. They should have it later this week."

The City is waiting on the permit for the supplemental work post-USACE project. There was only one response to the RFB; the City is looking into that and speaking with Sullivan's Island about it since they are anticipating doing the same thing with their new sand.

The design for the undergrounding of electrical lines at 21st Avenue has been approved, and work is expected to be done in the first quarter of 2025.

9. **Strategic Plan Policy Initiatives and Priorities**

- A. **Livability**
- B. **Environmental**
- C. **Public Services**

- D. **Personnel**
- E. **Other items for discussion**
- 10. **Legislative Report**
- 11. **Adjournment**

Council Member Ward made a motion to adjourn, and Council Member Anderson seconded the motion. The meeting adjourned at 7:09pm.

Respectfully submitted,

Nicole DeNeane
City Clerk



Public Services & Facilities Committee Meeting
9:00am, Tuesday, August 20, 2024
1207 Palm Boulevard, Isle of Palms, SC and
broadcasted live on YouTube: <https://www.youtube.com/user/cityofisleofpalms>

MINUTES

1. Call to Order

Present: Council members Miars, Hahn, Pierce

Staff Present: Administrator Fragoso, Director Kerr, Director Pitts, Asst. Director Asero

2. Citizen's Comments

Julie Nestler said she would like to see the Recreation Department include water safety training in the summer camp program. She is willing to pay for it or provide staff with contact information and resources that could fund such a class. She shared pictures of the life rings at the public dock, which she says are not hung properly for life-saving purposes.

3. Approval of Previous Meeting's Minutes – July 9, 2024

MOTION: Council Member Pierce made a motion to approve the minutes of the July 9, 2024 meeting. Council Member Hahn seconded the motion. The motion passed unanimously.

4. Old Business

A. Discussion and consideration of commercial bulk container services

Administrator Fragoso shared a brief summary of the situation that has brought the City to needing a decision about the contract for commercial bulk container services. This Committee recommended to City Council and Council approved a 6-month extension with the current service provider to allow the City time to make decisions about how to move forward with the price increase and policy.

She shared that the price per yard for pickup did not change much if the scope of the contract only included the condominiums. The City had been paying \$0.65/yard, which increased to \$3.75/yard. To secure a \$2.50/yard price, a decision needs to be made now. Any action taken now will be effective March 1, 2025.

Mr. Rod Turnage, President of the IOP Chamber of Commerce said he has spoken to the restaurant owners and said most of them understand the “cost of doing business.” He stressed the importance of clearly and thoughtfully communicating the situation to the businesses. He recommended the City find a way to allow the businesses to work this new expense into their

budgets. He added that most of the restaurants did not understand what they had been paying towards trash pickup.

Administrator Fragoso explained what the County charges for, what the City charges for, and how the businesses are billed for those services.

Committee members discussed how it might be possible to ease this expense into the businesses over a longer period of time. Treating everyone who currently benefits from this service equally moving forward was of utmost importance. Director Pitts pointed out that several of the rental homes have many more than the 2 roll carts permitted per business and suggested enforcing that will need to be part of the policy change moving forward.

MOTION: Council Member Pierce made a motion to recommend to City Council the adoption of the new contract at \$2.50/yard beginning March 1, 2025, to absorb the current costs of the contract for the affected business entities through October 31, 2025, then transition costs to those businesses after that date, and continue the current policy of charging users for use of the municipal compactor. Council Member Hahn seconded the motion. The motion passed unanimously.

Staff will bring to the next Committee meeting data on excessive roll cart usage.

B. Discussion of island wide beach monitoring and surveying

Administrator Fragoso said that an RFP was issued for this contract with an expanded scope of surveying the beach and reporting to the City twice a year. Only Coastal Science & Engineering, the City's current vendor, responded to the RFP. Their current contract needs to be renewed. Their proposal for the expanded services is \$106,000 for semi-annual monitoring and reporting. The current contract is \$60,000 for an annual survey and report.

Administrator Fragoso said semi-annual reporting will allow Council and the City to react to changing erosional situations more quickly. Council Member Hahn added that more frequent monitoring also details seasonal changes.

MOTION: Council Member Hahn made a motion to recommend to City Council the approval of the proposal for a 5-year contract from Coastal Science & Engineering for semi-annual surveying and reporting in the amount of \$106,000/year. Council Member Pierce seconded the motion. The motion passed unanimously.

5. **New Business - none**

6. **Miscellaneous Business**

The next regular meeting of the Public Services & Facilities Committee will be Tuesday, September 10, 2024 at 9am. Discussions will include yard debris and information about roll cart usage by businesses.

7. **Adjournment**

Council Member Pierce made a motion to adjourn and Council Member Hahn seconded the motion. The meeting was adjourned at 10:08am

Respectfully submitted,
Nicole DeNeane
City Clerk



Charleston Area Regional Transportation Authority

MEMORANDUM

TO: Board of Directors
 FROM: Robin W. Mitchum, Deputy Director of Finance and Administration
 SUBJECT: FY24/25 Proposed Budget
 DATE: June 5, 2024

Please find attached the Proposed FY24/25 Budget for your consideration.

Revenues

A detailed explanation of line-item changes are as follows:

- Farebox and Passes & Mobile Ticketing revenues have been increased for average and estimated receipts.
- Contract Service revenues for have increased based on the contract agreements and estimated ridership.
- Local contributions are funds received for shelter construction. These contributions are recorded as received.
- Federal revenue includes estimated 5307 Urban funds, 5310 Enhanced Mobility for Seniors & Individuals with Disabilities, 5307 CARES Act and ARP Act funds. CARTA receives funds as a direct recipient from FTA and Pass-Through funds from the BCDCOG. Capital funds are reflected in the capital revenues budget. The increase in Federal funding is a projection of federal grant awards.
- State Mass Transit Funds (SMTF) are funds received as matching contributions to 5307 operating. We do not anticipate receiving any funds for FY25.
- Sales Tax – Charleston County is the operating funds. The matching requirements for capital are reflected the capital revenues budget line item.
- Insurance proceeds is policy proceeds that are the result of accidents. Insurance proceeds are recorded as received.
- Sale of Assets is the proceeds from the sale of vehicles. These funds are recorded as received.

Expenditures

A detailed explanation of line-item changes are as follows:

- Retiree Benefits is increased for the cost of SCPEBA employer portion of Retiree Insurance.
- Supplies includes office and facility maintenance supplies. The decrease is due to concluding costs of rebranding materials and signage.

- Automotive is increased for average cost to maintain the agency vehicle.
- Office Equipment Rental decreased for contracted estimates.
- Office Equipment Maintenance includes IT services (managed server services, email hosting, and other general IT services), Camera system maintenance, and AVL software maintenance. The increase is anticipated expenditures for service agreements.
- Rent includes the Ashley Phosphate Park & Ride Lot, Dorchester Village Shopping Center Park & Ride Lot, Leeds Avenue lot lease from Dominion Energy, SC Works Trident lease space, and document storage. The increase is due to average and anticipated expenditures for renewing the Park & Rides leases, SC Works lease space, and document storage.
- Communication is increased for average and anticipated costs.
- Utilities is increased for average and anticipated costs.
- Professional services are being increased for CARTA On Demand program and auditing services.
- Contract Services is increased for Shared IGA services that includes management, administrative, financial, customer service, cash counting, marketing, advertising, maintenance costs, engineering, and professional services. Contract Services has also been adjust for anticipated Fixed Route services provided by National Express.
- Vehicle Maintenance increased for average and estimated maintenance costs.
- Facility Repair & Maintenance increased for average and estimated repairs and maintenance.
- Operating Fees increased for average and anticipated costs.
- Insurance increased for the projected cost for the fiscal year.
- Fuel increased based on projected cost for the fiscal year.
- Paratransit service increased for anticipated operator costs.
- Interest is decreased as the principle on the loan deceases.
- Non-Capitalized assets include security equipment, cameras, lighting, shelter panels/parts, driver safety barriers, COVID-19 PPE, and radio equipment. This line has been reduced to anticipated costs.

Capital Expenditures (Balance Sheet)

- Rolling Stock includes the purchase of vehicles and associated equipment.
- Bus Facilities/Charging stations is decreased for Leeds avenue parking lot repairs and charging infrastructure. We anticipate this project to be completed during FY24.
- Bus Shelter Construction/Bench is estimated cost for shelters.
- Land is decreased for the purchase the Fairgrounds parcel. We anticipate purchasing the land in FY24.
- Facilities Construction is engineering and design costs for Shipwatch Square and Fairgrounds.
- Security Cameras and Equipment is funds available and anticipated expenditures to purchase security equipment at our facilities and on rolling stock.
- Capital (IT, Facility Repairs/Maint) is for the facility upgrades or repairs.

We will monitor the budget to ensure revenues and expenditure remain aligned and we will make recommended revisions as necessary.

If you have any questions, please contact me at 843-529-2126 or robinm@bcdcog.com.

CARTA
***Proposed* FY2025 Budget**

	Approved Budget <u>FY 2024</u>	<i>Proposed</i> Budget <u>FY 2025</u>	<u>Variance</u>
<u>Revenues</u>			
Farebox	1,296,535	1,322,466	25,931
Passes & Mobile Ticketing	595,387	607,295	11,908
COC Shuttle	403,644	453,476	49,832
MUSC	753,157	763,456	10,299
City of Charleston - DASH	706,143	741,452	35,309
Local Contributions	37,131	-	(37,131)
Federal	8,862,392	10,156,366	1,293,974
State Mass Transit Funds (SMTF)	260,435	-	(260,435)
Sales Tax - Charleston County	12,684,369	13,415,772	731,403
Advertising	800,000	850,000	50,000
Interest	-	-	-
Insurance Proceeds	139,702	-	(139,702)
Sale of Asset	28,900	-	(28,900)
Miscellaneous	-	-	-
TOTAL REVENUES	26,567,795	28,310,283	1,742,488
<u>Expenditures</u>			
Retiree Benefits	9,307	9,581	274
Supplies	175,000	75,000	(100,000)
Printing	42,000	42,000	-
Automotive	3,450	3,525	75
Postage	200	200	-
Dues/Memberships	2,500	2,500	-
Office Equipment Rental	117,695	116,225	(1,470)
Office Equipment Maintenance	289,793	333,633	43,840
Rent	33,620	34,385	765
Communications	166,847	170,185	3,338
Utilities	316,501	322,832	6,331
Advertising	7,500	7,500	-
Professional Services			
Auditing	30,800	32,340	1,540
Legal	1,000	1,000	-
Custodial	25,542	25,542	-
On Demand Program	325,000	350,000	25,000
Electric Bus Master Plan	20,005	-	(20,005)
Other	25,000	25,000	-
Contract Services			
Shared Services - IGA	3,888,379	3,640,486	(247,893)
Fixed Route	14,676,071	16,244,786	1,568,715
Money Transport	11,604	11,836	232

CARTA
***Proposed* FY2025 Budget**

	Approved Budget <u>FY 2024</u>	<i>Proposed</i> Budget <u>FY 2025</u>	<u>Variance</u>
Security Services	105,560	105,560	-
Vehicle Maintenance	341,863	348,701	6,838
Facility Repair & Maintenance	32,213	47,250	15,037
Operating Fees & Licenses	45,000	50,000	5,000
Insurance	1,033,626	1,085,307	51,681
Fuel	1,450,000	1,493,500	43,500
Paratransit	3,308,576	3,657,569	348,993
Miscellaneous	5,300	5,400	100
Interest	47,843	43,440	(4,403)
Non-Capitalized Assets	30,000	25,000	(5,000)
TOTAL EXPENDITURES	<u>26,567,795</u>	<u>28,310,283</u>	<u>1,742,488</u>
 Excess (Deficit) of Revenues Over (Under) Expenditures	 <u>-</u>	 <u>-</u>	 <u>-</u>
<u>Capital Revenues</u>			
Rolling Stock	598,240	600,000	1,760
Bus Facilities/Charging Stations	1,197,724	-	(1,197,724)
Bus Shelter Construction/Bench Install	55,591	-	(55,591)
Land	1,066,800	-	(1,066,800)
Security Cameras/Equipment	300,318	131,511	(168,807)
Facilities Construction	264,436	2,211,406	1,946,970
Sales Tax - Charleston County	1,122,381	875,728	(246,653)
TOTAL CAPITAL EXPENDITURES	<u>4,605,490</u>	<u>3,818,645</u>	<u>(786,845)</u>
<u>Capital Expenditures</u>			
Rolling Stock	827,800	750,000	(77,800)
Bus Facilities/Charging Stations	1,524,571	-	(1,524,571)
Bus Shelter Construction/Bench Install	180,591	100,000	(80,591)
Land	1,333,500	-	(1,333,500)
Facilities Construction	330,545	2,764,257	2,433,712
Security Cameras/Equipment	368,483	164,388	(204,095)
Capital (IT, Facility Repairs/Maint)	40,000	40,000	-
TOTAL CAPITAL EXPENDITURES	<u>4,605,490</u>	<u>3,818,645</u>	<u>(786,845)</u>

CARTA

Proposed Detailed Budgeted Expenditures
FY 2024/2025

		Approved Budget FY 2024	Proposed Budget FY 2025	Increase (Decrease)
RETIREE BENEFITS	Retiree Insurance	9,307	9,581	274
		<u>9,307</u>	<u>9,581</u>	<u>274</u>
SUPPLIES	Admin/Operations	50,000	75,000	25,000
	Rebranding	125,000	-	(125,000)
	Total	<u>175,000</u>	<u>75,000</u>	<u>(100,000)</u>
PRINTING	Printing	37,000	37,000	-
	Rebranding	5,000	5,000	-
		<u>42,000</u>	<u>42,000</u>	<u>-</u>
AUTOMOTIVE	Parking/Mileage/Service	3,450	3,525	75
	Total	<u>3,450</u>	<u>3,525</u>	<u>75</u>
POSTAGE		200	200	-
		<u>200</u>	<u>200</u>	<u>-</u>
DUES & MEMBERSHIPS	Metro Chamber	500	500	-
	TASC (SCAMI)	2,000	2,000	-
	Total	<u>2,500</u>	<u>2,500</u>	<u>-</u>
EQUIPMENT RENTAL	Electric Bus Battery Lease	106,470	105,000	(1,470)
	Electric Bus Battery Lease Property Tax	11,225	11,225	-
	Miscellaneous Equipment	-	-	-
	Total	<u>117,695</u>	<u>116,225</u>	<u>(1,470)</u>
OFFICE EQUIPMENT MAINTENANCE	IT / Camera Maint.	40,000	55,000	15,000
	Money Counting Equipment	2,000	2,000	-
	AVL Cloud Manager	18,555	19,832	1,277
	Genfare Support	19,602	20,190	588
	Electric Bus Mgmt Software	50,552	72,755	22,203
	CAD/ITS/AVL	159,084	163,856	4,772
		<u>289,793</u>	<u>333,633</u>	<u>43,840</u>
RENT	Land	6,000	6,000	-
	Park & Ride	20,150	20,600	450
	Document Storage	2,425	2,450	25
	SC Works Charleston Center	5,045	5,335	290
		<u>33,620</u>	<u>34,385</u>	<u>765</u>

CARTA

Proposed Detailed Budgeted Expenditures
FY 2024/2025

		Approved Budget FY 2024	Proposed Budget FY 2025	Increase (Decrease)
COMMUNICATIONS	Telephone/Internet	44,384	45,272	888
	Tablets - Buses	47,463	48,413	950
	Radios	75,000	76,500	1,500
	Total	<u>166,847</u>	<u>170,185</u>	<u>3,338</u>
UTILITIES	Electricity	11,643	11,876	233
	Electricity -Charging Stations	294,030	299,911	5,881
	Water	10,828	11,045	217
	Total	<u>316,501</u>	<u>322,832</u>	<u>6,331</u>
ADVERTISING	ALL	-	-	-
	BUS WRAPS	7,500	7,500	-
	Total	<u>7,500</u>	<u>7,500</u>	<u>-</u>
PROFESSIONAL SERVICES	Audit	30,800	32,340	1,540
	Legal	1,000	1,000	-
	Custodial	25,542	25,542	-
	CARTA OnDemand	325,000	350,000	25,000
	Electric Bus Master Plan	20,005	-	(20,005)
	Other	25,000	25,000	-
	Total	<u>427,347</u>	<u>433,882</u>	<u>6,535</u>
CONTRACT SERVICES	Management Services	75,000	75,000	-
	Shared Services (IGA)	3,352,632	3,443,839	91,207
	Remix-Transit & OnDemand Planning (67,469	53,975	(13,494)
	Mt. Pleasant St. Park & Ride Design (IC	29,172	29,172	-
	ITS System (IGA)	25,000	25,000	-
	Mobile Ticketing (IGA)	23,940	13,500	(10,440)
	Route Study (IGA)	315,166	-	(315,166)
	Fixed Route	14,676,071	16,244,786	1,568,715
	Money Transport	11,604	11,836	232
	Super Stop Security Services	105,560	105,560	-
	Total	<u>18,681,614</u>	<u>20,002,668</u>	<u>1,321,054</u>
VEHICLE MAINTENANCE		341,863	348,701	6,838
	Total	<u>341,863</u>	<u>348,701</u>	<u>6,838</u>
FACILITY REPAIR & MAINTENANCE	Facility Repair Misc	25,000	40,000	15,000
	Bus Wash Inspection	7,213	7,250	37
	Total	<u>32,213</u>	<u>47,250</u>	<u>15,037</u>

CARTA

Proposed Detailed Budgeted Expenditures
FY 2024/2025

		Approved Budget FY 2024	Proposed Budget FY 2025	Increase (Decrease)
OPERATING FEES & LICENSES		45,000	50,000	5,000
		<u>45,000</u>	<u>50,000</u>	<u>5,000</u>
INSURANCE	Administration	23,068	24,221	1,153
	Operating	1,010,558	1,061,086	50,528
		<u>1,033,626</u>	<u>1,085,307</u>	<u>51,681</u>
FUEL	Fuel	1,450,000	1,493,500	43,500
		<u>1,450,000</u>	<u>1,493,500</u>	<u>43,500</u>
PARATRANSIT	National Express	3,308,576	3,657,569	348,993
		<u>3,308,576</u>	<u>3,657,569</u>	<u>348,993</u>
MISCELLANEOUS	Misc	5,300	5,400	100
		<u>5,300</u>	<u>5,400</u>	<u>100</u>
INTEREST	BB&T - Melnick Property	47,843	43,440	(4,403)
		<u>47,843</u>	<u>43,440</u>	<u>(4,403)</u>
NON-CAPITALIZED ASSETS	Non-Capitalized Assets	30,000	25,000	(5,000)
		<u>30,000</u>	<u>25,000</u>	<u>(5,000)</u>
TOTAL OPERATING		<u>26,567,795</u>	<u>28,310,283</u>	<u>1,742,488</u>
CAPITAL				
	Rolling Stock/Fleet Repair	827,800	750,000	(77,800)
	Bus Facilities/Charging Stations	1,524,571	-	(1,524,571)
	Bus Shelter Construction/Bench	180,591	100,000	(80,591)
	Land	1,333,500	-	(1,333,500)
	Facilities Construction	330,545	2,764,257	2,433,712
	Security/Cameras	368,483	164,388	(204,095)
	Capital (IT, Facility Repairs/Maint)	40,000	40,000	-
TOTAL CAPITAL		<u>4,605,490</u>	<u>3,818,645</u>	<u>(786,845)</u>

WORK ORDER NUMBER 2

WORK ORDER to the Agreement dated August 5, 2020, by and between the City of Isle of Palms, South Carolina (the “**Client**”) and First Tryon Advisors, LLC (the “**Advisor**”).

SERVICES

The Advisor will provide the following services under this Work Order:

- Advice and assistance with respect to evaluating the Client’s projected revenues and expenditures within its General Fund, Municipal Accommodations Fee Fund, Hospitality Tax Fund, Beach Preservation Fee Fund, and Marina Enterprise Fund, as well as the funding the Client’s current and future capital needs.
- Develop a capital planning model in order to analyze the Client’s projected revenue sources and its ability to fund future capital needs within the above-mentioned funds. The capital planning model will allow the Client to evaluate each of the proposed projects taking the following variables into consideration:
 - Project timing and amounts
 - Available funding structures (i.e. debt, pay-go, grants)
 - Financing structure (term/amortization/interest rate)
 - Available revenue sources
 - Detailed revenue/expenditure growth projections
 - Impact on tax rates (or other revenue sources) as well as various financial and debt ratios
 - Peer comparisons for certain financial/debt metrics
- Work hand-in-hand with the Client's staff to refine the capital planning model to help forecast future financial performance, evaluate the Client's debt capacity and affordability and assess the sensitivity of the Client's various planning assumptions.
- At the Client's request, participate in City Council meetings, workshops and committee meetings to facilitate the development of the capital planning model.
- Assistance with general advisory questions related to debt planning.

TERM

This work order will remain in effect until completion of the scope of services, which is expected to occur by September 30, 2024, unless extended by mutual agreement or otherwise terminated in accordance with the Agreement.

COMPENSATION

In establishing fees, the Advisor considers multiple factors, including the efficiency with which the work was done, the result achieved, the complexity of the matter and any special experience or expertise applied to it, any extraordinary scheduling or preemptive attention devoted to the project, and the degree of professional responsibility or liability undertaken by the firm.

For services to be performed in connection with this Work Order, the Advisor shall charge a flat fee of \$22,500 - \$24,500. Any additional work on, or updates to, the model after development and delivery of a final, working model would be billed at an hourly rate, as set forth below:

- Managing Director: \$425/hour
- Director: \$350/hour
- Vice President: \$275/hour
- Associate/Analyst: \$200/hour

The Advisor's hourly rates are subject to adjustment from time to time by the Advisor and all rates will be set forth on invoices detailing services performed. If at any time we believe circumstances require an adjustment of our fees, we will consult with you and any adjustment will be left to the sole discretion of the Client.

Such fees may vary if (1) the contemplated assignment changes materially during the course of the Term or (2) unusual or unforeseen circumstances arise which require a significant increase in the type or scope of the Advisor's responsibilities. The Advisor will consult with the Client if at any time the Advisor believes that circumstances require an adjustment to its fees. Fees will not be increased without the written consent of the Client.

In addition to the compensation outlined above, the Client will reimburse the Advisor for out-of-pocket expenses incurred in connection with the Services. Customary out-of-pocket expenses include, without limitation, costs of travel, meals, lodging, printing/copying, etc. The Advisor will bill the Client for such expenses at cost, with no mark-up. The Advisor will not bill the Client for indirect costs such as telephone, fax, and conference call services; instead, the Client will pay the Advisor an administrative expense fee equal to 4% of any invoiced fee for Services as reimbursement for costs not reasonably allocable on a client-by-client basis.

City of Isle of Palms, South Carolina
Work Order Number 2
July 18, 2024
Page 3 of 3


AGREED AND ACCEPTED this _____ day of _____, 20__:

CITY OF ISLE OF PALMS, SOUTH CAROLINA

By: _____
Name:
Title:

FIRST TRYON ADVISORS, LLC

By: 
Name: David Cheatwood
Title: Managing Director


By: _____
Name: J. Walter Goldsmith
Title: President & COO

**City of Isle of Palms
Detail List of Dumpsters**

Name of location	Commercial or Condos	(A) R=recycle G=garbage	(A)	(B)	(C)	Yards per week	Yards per month	Price per yard	Current Average Cost Per Month	\$ 2.50 New Average Cost Per Month
			Size in YARDS	# of Containe at Location CONTAINERS	Days Serviced per Week					
Acme Cantina	Commercial	G	8	1	4	32	138.56	\$ 0.58	\$ 79.99	\$ 346.40
Acme Cantina	Commercial	G	6	1	4	24	103.92	\$ 1.01	\$ 105.00	\$ 259.80
Broadwalk Inn	Commercial	G	4	2	3	24	103.92	\$ 0.34	\$ 35.53	\$ 259.80
Broadwalk Inn	Commercial	G	4	1	3	12	51.96	\$ 0.68	\$ 35.53	\$ 129.90
Boat House Restaurant	Commercial	G	8	1	5	40	173.2	\$ 0.65	\$ 112.91	\$ 433.00
Citadel Beach House	Commercial	G	6	1	2	12	51.96	\$ 0.65	\$ 33.98	\$ 129.90
Ocean Park Center	Commercial	G	8	1	5	40	173.2	\$ 0.65	\$ 112.91	\$ 433.00
Links Clubhouse/Edgar's	Commercial	G	4	1	2	8	34.64	\$ 0.88	\$ 30.45	\$ 86.60
Links Clubhouse/Edgar's	Commercial	G	8	1	2	16	69.28	\$ 0.65	\$ 44.94	\$ 173.20
Links Golf Course	Commercial	G	30yd R/O	1 on call		rent \$111. Haul \$194.76		\$	\$ 510.71	\$ 305.94
Links Golf Course	Commercial	G	8	1	1	8	34.64	\$ 0.66	\$ 23.02	\$ 86.60
Long Island Café	Commercial	G	4	1	3	12	51.96	\$ 0.65	\$ 33.98	\$ 129.90
Long Island Café	Commercial	R	6	1	3	18	77.94	\$ 0.63	\$ 49.33	\$ 194.85
Lutheran Retreat Center	Commercial	G	8	1	1	8	34.64	\$ 0.65	\$ 22.68	\$ 86.60
Kangaroo (Circle K)	Commercial	G	8	1	2	16	69.28	\$ 0.90	\$ 62.64	\$ 173.20
Kangaroo (Circle K)	Commercial	R	8	1	3	24	103.92	\$ 0.43	\$ 44.28	\$ 259.80
Post Office	Commercial	G	6	1	1	6	25.98	\$ 0.67	\$ 17.28	\$ 64.95
Sea Biscuit Café	Commercial	G	2	1	2	4	17.32	\$ 0.69	\$ 11.88	\$ 43.30
The Co-Op	Commercial	G	6	1	2	12	51.96	\$ 0.67	\$ 34.56	\$ 129.90
The Refuge	Commercial	G	6	1	2	12	51.96	\$ 0.68	\$ 35.08	\$ 129.90
Beachside Vacations	Commercial	G	8	1	5	40	173.2	\$	\$ -	\$ 433.00
Wild Dunes Housekeep	Commercial	G	8	2	2	32	138.56	\$ 0.31	\$ 43.20	\$ 346.40
Wild Dunes Housekeep	Commercial	R	8	1	2	16	69.28	\$ 0.31	\$ 21.60	\$ 173.20
Liquor Store	Commercial	G	6	1	2	12	51.96	\$ 0.62	\$ 32.03	\$ 129.90
Palm Blvd/ IOP LLC	Commercial	G	4	1	3	12	51.96	\$ 0.65	\$ 33.98	\$ 129.90
Charleston County Park	Commercial	G	6	1	3	18	77.94	\$ 0.84	\$ 65.77	\$ 194.85
Charleston County Park	Commercial	G	6	1	4	24	103.92	\$ 0.61	\$ 63.58	\$ 259.80
Wild Dunes Beachhouse	Commercial	G	6	1	2	12	51.96	\$ 0.64	\$ 33.48	\$ 129.90
Marina Outpost	Commercial	G	8	1	5	40	173.2	\$ 0.65	\$ 112.91	\$ 433.00
The Villages at Wild Dunes	Commercial	G	4	11	5	220	952.6	\$ 0.62	\$ 594.00	\$ 2,381.50
The Villages at Wild Dunes	Commercial	R	4	3	5	60	259.8	\$ 0.62	\$ 162.00	\$ 649.50
Wild Dunes Sweetgrass Pavilion	Commercial	R	4yd Comp	1	1	12	51.96	\$ 0.67	\$ 35.00	\$ 129.90
Wild Dunes Sweetgrass Pavilion	Commercial	R	4	2	3	24	103.92	\$ 0.67	\$ 70.00	\$ 259.80
Wild Dunes Sweetgrass Pavilion	Commercial	G	4	3	3	36	155.88	\$ 0.45	\$ 70.00	\$ 389.70
Sweetgrass Inn	Commercial	R	4	1	3	12	51.96	\$	\$ -	\$ 129.90

Sweetgrass Inn	Commercial	G	4	5	6	120	519.6		\$ -	\$ 1,299.00
Islander 71	Commercial	G	8	2	5	80	346.4	\$ 0.65	\$ 225.82	\$ 866.00
Municipal Compactor in Lot B	Commercial	G	30 yd Comp	1	2x/week		Haul \$184.78		\$1,515.44	\$1,847.80
Recreation Dept	Condo	G	6	1	1	6	25.98	\$0.67	\$17.28	\$64.95
1140 Ocean Blvd. Condos	Condo	G	8	1	3	24	103.92	\$0.64	\$66.42	\$259.80
Ocean Club Villas	Condo	G	4	8	3	96	415.68	\$0.66	\$273.24	\$1,039.20
Ocean Inn	Condo	G	4	1	1	4	17.32	\$1.31	\$22.72	\$43.30
Sea Cabins Condos	Condo	G	8	4	3	96	415.68	\$0.86	\$358.56	\$1,039.20
Seascape Condos	Condo	G	8	2	2	32	138.56	\$0.64	\$88.56	\$346.40
Seaside Villas	Condo	G	8	2	3	48	207.84	\$0.64	\$133.92	\$519.60
Shipwatch Condos	Condo	G	8	4	3	96	415.68	\$0.64	\$267.84	\$1,039.20
Summerhouse Condos	Condo	G	8	2	3	48	207.84	\$0.64	\$133.92	\$519.60
Tidewater	Condo	G	8	2	2	32	138.56	\$0.64	\$88.56	\$346.40
Port O Call I	Condo	G	8	1	3	24	103.92	\$0.64	\$66.96	\$259.80
Wild Dunes Yacht Harbor	Condo	G	8	1	2	16	69.28	\$0.64	\$44.28	\$173.20
Mariners Walk	Condo	G	8	1	1	8	34.64	\$0.66	\$23.00	\$86.60
Mariners Walk	Condo	G	4	3	1	36	155.88	\$0.85	\$132.84	\$389.70
Seagrove Villas	Condo	G	4	2	3	24	103.92	\$0.68	\$70.67	\$259.80
			312	95	143	1688	7309.04		\$ 6,304.26	\$ 20,426.34
									<u>\$ 75,651.08</u>	<u>\$ 245,116.08</u>

FY23	\$ 75,305.64
FY24 Estimate	\$ 107,959.43
Increase from FY23 to FY 24	\$ 0.43
Increase from FY24 to FY25 Projection	\$ 1.27

Cost by Type of Property	Monthly	Annual
City OR Condos	\$ 8,234.55	\$ 98,814.60
Commercial	\$ 12,191.79	\$ 146,301.48



Island Wide Beach Monitoring Isle of Palms, SC

RFP#2024-06

Proposal

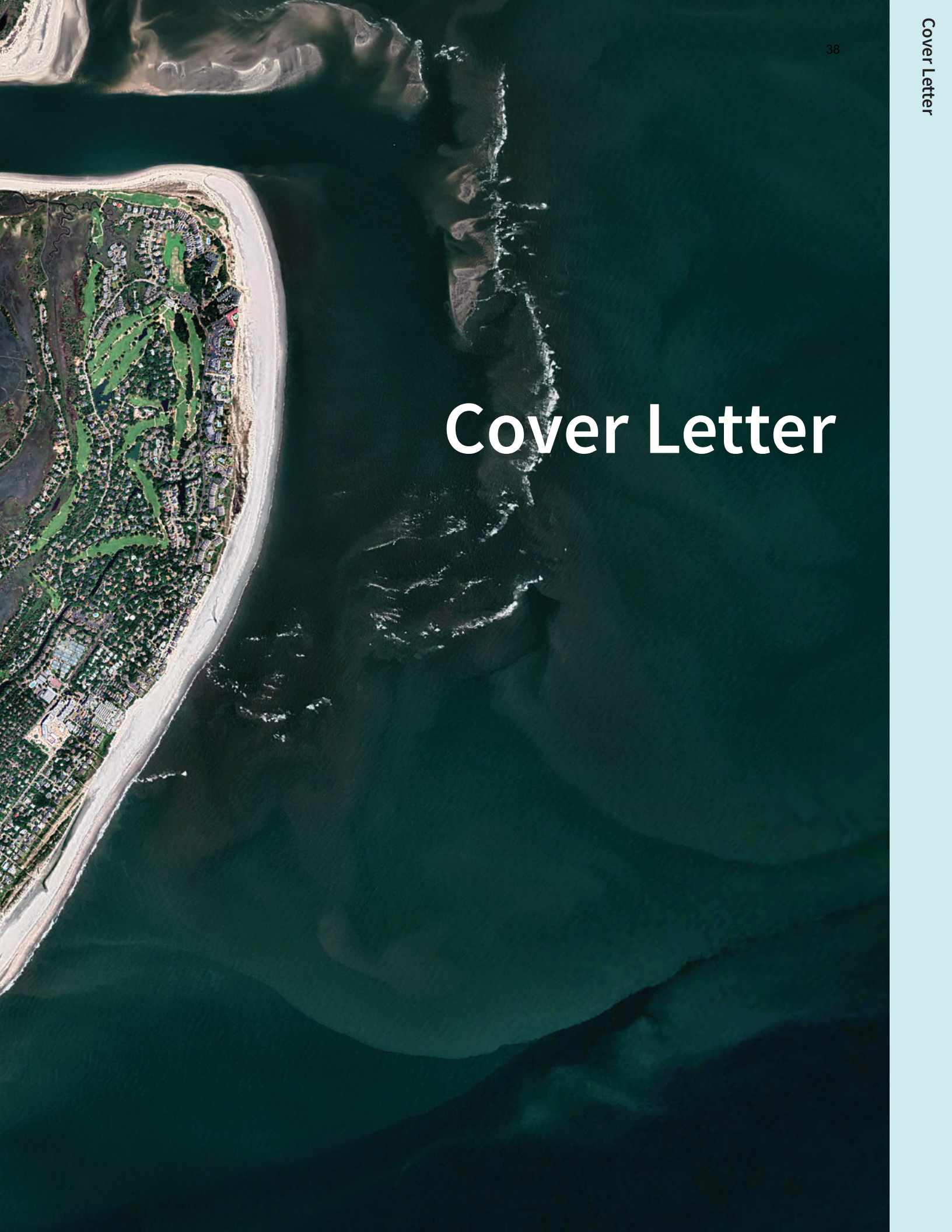
Presented by:

COASTAL SCIENCE & ENGINEERING
High Value Services. Sustainable Solutions.



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Cover Letter



COASTAL SCIENCE & ENGINEERING

RE: RFP#2024-06 – Island Wide Beach Monitoring

Coastal Science & Engineering, Inc. (CSE) is pleased to present this proposal to the City of Isle of Palms for island-wide beach monitoring services.

The City seeks a consultant to conduct semi-annual surveys of the beach and inshore zone, provide mid-year executive summaries of survey data, and prepare yearly comprehensive monitoring reports. This ongoing analysis of beach volume changes will support the City's long-term coastal management and conservation efforts.

How We Can Help

CSE's 40 years of experience serving the Isle of Palms with coastal management planning, beach nourishment solutions, and beach profile monitoring offers a unique fit for this undertaking. We can assist the City by performing the following services:

- Liaison with City representatives to schedule field surveys and prepare periodic project summaries (including graphics and web updates).
- Semi-annual surveys of the downcoast area of the island (Breach Inlet to 53rd Avenue).
- Semi-annual surveys of the Dewees Inlet ebb-tidal delta.
- Semi-annual surveys of the Breach Inlet ebb-tidal delta.
- Mid-year executive summaries of survey data.
- Annual comprehensive monitoring reports documenting beach volume changes and nourishment performance.

Why We Are Well-Positioned to Perform Beach Monitoring Services for the City

CSE brings the longest history of beach monitoring in South Carolina to the proposed project.

- We have been involved with shoreline management at the Isle of Palms for 40 years.
- CSE has more experience surveying and analyzing South Carolina beach volume changes than any other entity.
- The quality of our work is reflected in long working relationships with several coastal communities, including Edisto Beach (25+ years), SC Department of Park, Recreation, and Tourism (30+ years), Seabrook Island (40 years), and Kiawah Island (15+ years).
- CSE has been contracted by SCDHEC–OCRM for the past 12 years to complete annual surveys of the state-wide beach monitoring network of ~400 profiles.



COASTAL SCIENCE & ENGINEERING

Over the past 17 years, CSE has worked for the City in all aspects of beach management, including surveys similar to those detailed in the RFP, permitting and execution of beach restoration projects, hurricane response, coastal policy, education, and outreach. CSE recently completed a contract for annual monitoring through 2023. Selecting CSE for additional island-wide monitoring will allow for seamless data collection, which provides an improved product, more accurate analysis, and reduces impacts to beachgoers. Over the past 17 years, CSE has learned the specific needs and expectations of the City and tailors our reports and communication products to those needs.

Thank You for Reviewing our Proposal

The proposal is organized according to the items requested in the RFP:

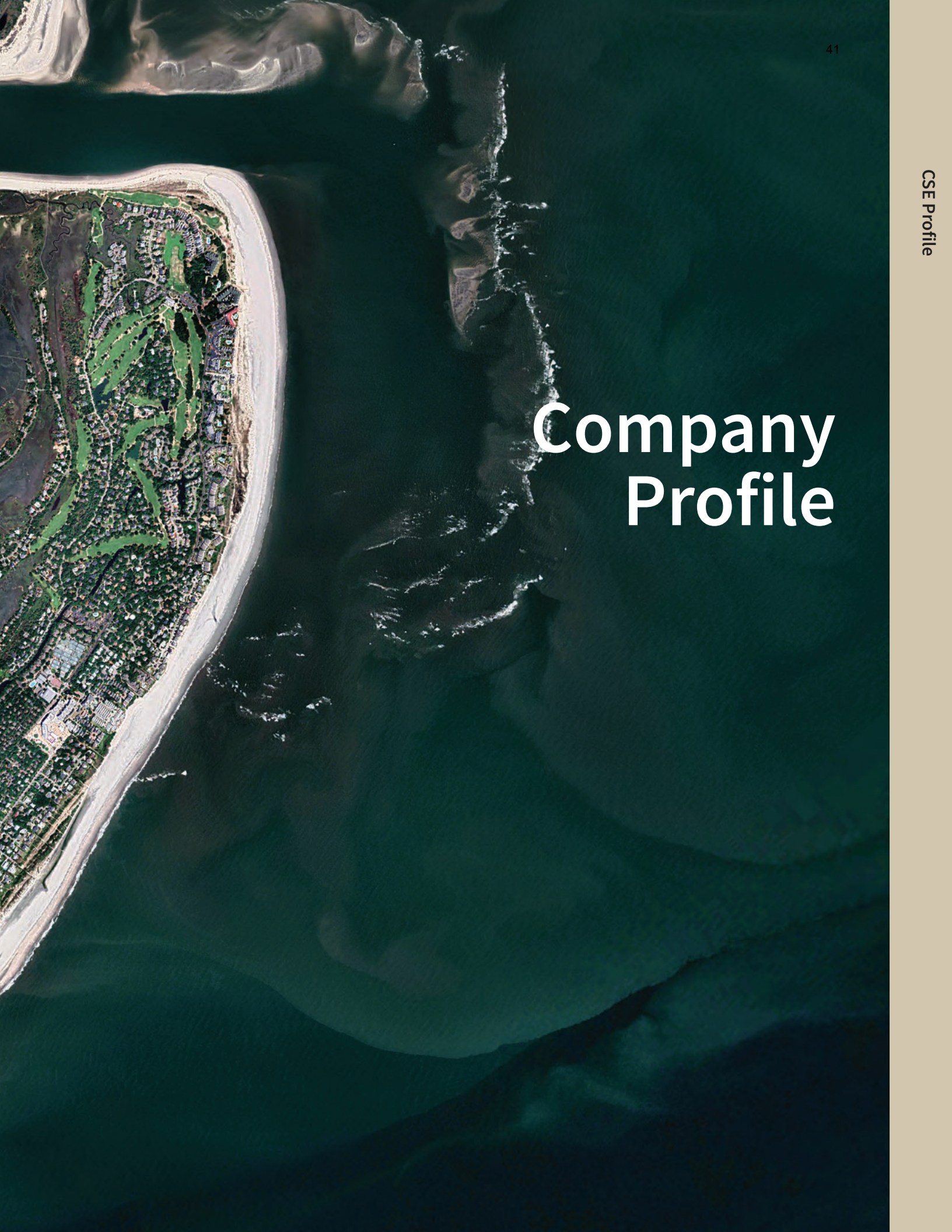
- Company Profile
- Methodology and Anticipated Scope of Work
- Key Project Team Personnel
- Project Budget and Cost Breakdown
- Client References
- Oath of Non-Collusion
- Statement Regarding Pending Legal Actions
- Appendices – Resumes & Equipment Information

Should you have any questions about our response to the City's Request for Proposals for island-wide beach monitoring services, please call (803) 799-8949 or email straynum@coastalscience.com.

CSE has had the pleasure of assisting the Isle of Palms for 40 years and is committed to continuing that relationship by providing the services herein to support the City's coastal management goals. We sincerely hope the City selects our team for the work included in RFP#2024-06, and we look forward to continue serving the City Council, residents, and visitors of Isle of Palms.

Thank you for your consideration.

Steven Traynum
President, Senior Project Director



Company Profile

Section B – Company Profile

The following section outlines the combined coastal management expertise of the CSE project team.

B.1. Company Background

Coastal Science & Engineering Inc. operates in the State of South Carolina as a registered **Engineering** firm with LLR South Carolina State Board of Registration for Professional Engineers and Surveyors with current registration from 2021 to 2023 (COA #1950). CSE's President Emeritus, Dr. Tim Kana (Lic #564) and Dr. Patrick Barrineau (Lic #2773), are also actively registered professional geologists with the LLR South Carolina Board of Registration for Geologists.

CSE specializes in engineering, planning, and scientific studies in the coastal zone. Since 1984, our experts in coastal and environmental engineering, geology, oceanography, and surveying have developed innovative engineering solutions to problems related to changing coastlines. CSE has in-house capabilities and experience to provide turn-key beach management services in conducting the following engineering work:

- Shoreline erosion assessment and feasibility studies
- Developing local and/or regional short-term and/or long-term beach management plans
- Community outreach and education
- Coastal shoreline numerical modeling and alternatives analysis
- Topographic mapping and bathymetric surveys from the beach zone to deep water
- Inland and offshore sand searches and geotechnical studies
- Project cost analysis to assist the client with public financing and planning
- State and federal permitting, environmental compliance, and documentation
- FEMA coordination and cost estimation for public assistance funds
- Development of plans and specifications for construction
- Bidding and negotiating with contractors
- Construction Administration
- Post-project monitoring to evaluate project performance

Among CSE's Milestone Are:

- A total of 55 large-scale nourishment projects (~42 million cubic yards) via hydraulic dredge, hopper dredge, truck hauling from inland and offshore sources, sand transfers from accreting zones, and inlet relocation/realignment. These projects have helped protect property worth over \$15 billion.
- Five projects have been recognized as Best Restored Beaches by the American Shore & Beach Preservation Association (ASBPA), including Sagaponack– Bridgehampton, NY (awarded 2018), Seabrook Island, SC (2016), Folly Beach County Park, SC (2015), Nags Head, NC (2013), and Isle of Palms, SC (2011).
- The 2011 Nags Head (NC) project was the largest locally funded nourishment project ever constructed in the US at 4.6 million cubic yards and received an ACEC National Engineering Excellence Award in 2013.
- CSE's innovative relocation of Captain Sams Inlet (SC) was recognized by the National Academy of Sciences as *"both environmentally sensitive and cost-effective, indicating the benefits of combining fundamental research on coastal processes with coastal engineering practices."*
- Developed methodology for establishing objective setback lines for development in South Carolina (enacted as part of the State's Beach Management Act in 1988).
- Consultant to the federal government (eg – US Army Corps of Engineers, US Environmental Protection Agency), state government (South Carolina, North Carolina, Georgia, and New York), and numerous municipal governments throughout the Carolinas.

Extensive South Carolina Beach Management Experience

CSE is the most experienced beach nourishment design firm in South Carolina, with more project experience than the USACE-Charleston District. Since 1984, CSE has provided engineering or consulting services for every developed beach in South Carolina.

CSE maintains the largest database of volumetric and linear erosion measurements in South Carolina, developed over 35 years of hands-on field data collection and aerial photo analysis. Our team has conducted over 40 engineering projects along the South Carolina coastline and is intimately familiar with the erosion challenges, regulatory requirements, and funding hurdles that local coastal communities face.



Long-term Client Relationships Based on Responsive Service

CSE aims to be the coastal engineering consultant that establishes long-term relationships with clients by performing highly competent services with integrity, responsiveness, and dedication to solutions. The quality of the services CSE provides is reflected in the large number of long-term clients that we serve. *Examples Include:*

- **1984-Present – Seabrook Island, SC (Town and Property Owners Association)**
 - ✓ CSE principals established the initial beach monitoring plan.
 - ✓ Developed the designs for three (3) inlet relocation projects, beach nourishment, and periodic sand recycling.
 - ✓ Provided permitting services for all major beach restoration work (for the POA).
 - ✓ Served as an advisor to the Town of Seabrook for their local Beach Management Plan (1991 and 2014).
 - ✓ CSE conducts annual beach monitoring surveys for the community using an extensive network of profiles into deep water and related digital terrain mapping and modeling.

- **1984-Present – City of Myrtle Beach, SC**
 - ✓ CSE set up the initial beach monitoring network of profiles along the nine-mile beach and monitors an expanded network each year to track the performance of beach nourishment projects.
 - ✓ Prior to the Federal 50-year Storm Damage Reduction Project (1997-2041), CSE designed and managed two interim nourishment projects, which were credited with significantly reducing property damages from major northeasters and Hurricane *Hugo* (1989).
 - ✓ CSE coordinates the City's annual surveys closely with the US Army Corps of Engineers.

- **1989-Present – Hunting Island and Edisto Beach, SC (SC Dept. of Parks, Recreation, and Tourism)**
 - ✓ Principal consulting engineering consultant to the SC Department of Parks, Recreation, and Tourism (PRT).
 - ✓ Designed five (5) beach restoration projects (1991, 2006 (2), 2017, and 2020) totaling ~3.0 million cubic yards (cy).
 - ✓ The 2006 and 2020 restoration projects at Hunting Island also included the construction of eight (8) low-profile groins designed to reduce erosion to less than one-third of the historic erosion rate and create safe swimming beaches for visitors.
 - ✓ CSE monitors the beach and borrow areas each year to track project performance.

- **1990-Present – Town of Edisto Beach, SC**
 - ✓ 30+ years of experience evaluating alternative erosion mitigation strategies for a complex setting with highly variable erosion rates, time-varying impacts of groins, and an unusually coarse-grained beach with high shell content.
 - ✓ Design of large-scale nourishment projects (2006 and 2017).
 - ✓ Development of innovative designs to improve a groin field dating back to the 1950s, including concomitant nourishment (1995).
 - ✓ Performance monitoring by annual beach surveys, offshore sand searches, and borrow area recovery surveys.
 - ✓ Assisted with the development of a Local Comprehensive Beach Management Plan.

- **Other Coastal Communities Where CSE has Long-term Relationships**
 - ✓ Isle of Palms, SC (1984-Present)
 - ✓ Debidue Island, SC (1985-1998; 2015-Present)
 - ✓ Town of Southampton, NY (2011-Present)
 - ✓ Town of Nags Head, NC (2003-2019)
 - ✓ Dare County, NC (2013-Present)
 - ✓ The State of South Carolina (SCCC and OCRM) (1984-1992; 2006-Present)

B.2. Relevant Project Experience

CSE's professional staff includes experienced specialists in coastal engineering, geology and geomorphology, numerical modeling, environmental science, and coastal oceanography. With graduates from prestigious programs in these fields, our team offers a broad perspective and experience in a wide range of settings. CSE takes great pride in preparing practical designs that work with nature. We bring a common-sense approach to projects based on decades of experience among our senior staff.

Much of CSE's success with beach nourishment projects is related to the hundreds of shoreline erosion assessments our professionals have completed in many different settings worldwide. This comprehensive view of the controlling coastal erosion processes helps our team quickly identify the principal erosion factors at a site.

The combination of numbers of projects executed, shoreline studies completed, and years of experience in the coastal zone makes CSE uniquely qualified to develop sound coastal engineering solutions. We take pride in the high standards that we bring to projects and the enthusiasm and dedication of our staff to clients' needs. Principals and staff engineers/scientists perform field data collection; CAD personnel serve as divers; administrative staff performs important client liaison; and so on.

Shoreline Assessments

CSE's staff has completed detailed shoreline assessments at hundreds of sites in a wide range of settings from the tropics to high latitudes. Studies have been conducted along micro-, meso-, and macro-tidal shorelines with a range of wave climates and fetches. CSE scientists have published numerous peer-reviewed papers on coastal erosion, littoral sediment budgets, shore protection, and predictions of sea-level-rise impacts. Shoreline assessments are a critical first step in the evaluation of sites for coastal development. CSE's worldwide experience in a range of settings allows the development of efficient and cost-effective data collection plans that focus on the primary factors controlling the site's evolution. Following are examples of CSE's shoreline assessments.

- Erosion assessment, project design, and construction management for the Town of Nags Head (NC) \$32 million beach nourishment project.
- Design and construction management of beach restoration project for Bogue Banks in Carteret County (NC), including completing a \$19 million beach nourishment project in two phases.
- SCDHEC-OCRM – Inventory of historical erosion rates for all developed beaches in South Carolina
- Shoreline assessment, design, and construction management for a \$4.5 million beach nourishment project in Myrtle Beach (SC).
- Shoreline assessment and determination of 30-year development setbacks for Palmetto Dunes, Hilton Head Island (SC).
- Beach management plan and recommended beach nourishment projects for Brevard County, Florida.
- Consultant to the South Carolina Coastal Council (SCCC) [now SCDHEC's Office of Ocean and Coastal Resource Management (OCRM)] on storm damage and erosion control strategies for the Grand Strand.
- Analysis of statewide beach-profile data collected by universities for the state of South Carolina. CSE has been OCRM's contractor for the program since 2014.
- Inland sand search for beach nourishment material along the South Carolina Grand Strand.
- Annual beach monitoring and analysis for Kiawah Island, Seabrook Island, Debidue Island, and Isle of Palms (SC).
- Development of a coastal-sediment-transport and oil pollution model (Alaska) for the U.S. Minerals Management Services (now BOEM).
- Engineering/environmental design for resort waterfront (~225 acres) in Dubai, Kuwait.
- Shoreline-erosion analysis, computer-based water-flow study, and wetlands management plan for Debidue Island (SC).
- Erosion assessment and beach restoration plan for a 900,000 cubic yard nourishment project at Isle of Palms (SC).
- Determination of erosion causes and formulation of mitigation measures for the Town of Hilton Head Island (SC).
- Prediction of 25- and 50-year future shorelines for development setback planning for Myrtle Beach (SC).
- Beachfront management plan, including a detailed inventory of conditions for North Myrtle Beach (SC).
- Shoreline erosion analysis (due to wind) for Atlantic City (NJ).
- Shoreline assessment and erosion mitigation strategy for Dewees Island (SC).
- Regional volumetric erosion rates for nine barrier islands in the Charleston (SC) Bight.
- Regional sediment budget for Montauk Point to Jones Beach, Long Island (NY) for the New York District USACE.
- Shoreline assessment and plan for beach restoration via inlet channel realignment at Seabrook Island (SC).
- Study of beach dynamics and the monsoon cycle, Oman, Arabian Gulf.
- Shoreline erosion assessment and preliminary design for beach restoration at Quogue (NY).

Hydrographic, Topographic, and Orthophotography Data Collection

CSE has extensive experience in quantitative hydrography and hydraulics, bathymetric data collection, drone-acquired orthophotography, and sediment measurements in the coastal environment. Following are sites where CSE personnel have first-hand experience with physical process and bathymetric measurements. CSE has surveyed many of these locations numerous times as part of nourishment design and monitoring projects. *Denotes locations with OCRM stations monitored by CSE.

CSE Survey Locations	
* Waties Island, South Carolina	Fripp Inlet, South Carolina
* North Myrtle Beach, South Carolina	* Fripp Island, South Carolina
* Arcadian Shores, South Carolina	Bay Point Island, South Carolina
* Myrtle Beach, South Carolina	* Hilton Head Island, South Carolina
* Surfside Beach, South Carolina	* Daufuskie Island, South Carolina
* Garden City Beach, South Carolina	Quogue, New York
* Huntington Beach State Park, South Carolina	Bridgehampton, New York
* Litchfield, South Carolina	Asharoken, New York
* Pawleys Island, South Carolina	Smith Point, New York
* DeBordieu Island, South Carolina	Fire Island, New York
* Dewees Island, South Carolina	Moriches Inlet, New York
* Isle of Palms, South Carolina	Kitty Hawk, North Carolina
Breach Inlet, South Carolina	Nags Head, North Carolina
* Sullivan’s Island, South Carolina	Cape Hatteras N. Seashore, North Carolina
Charleston Harbor, South Carolina	Oregon Inlet, North Carolina
Lighthouse Inlet, South Carolina	Shackelford Banks, North Carolina
* Folly Beach, South Carolina	Harkers Island, North Carolina
Stono Inlet, South Carolina	Beaufort Inlet, North Carolina
* Kiawah Island, South Carolina	Port of Moorhead City, North Carolina
Captain Sams Inlet, South Carolina	Bogue Banks, North Carolina
* Seabrook Island, South Carolina	Bogue Inlet, North Carolina
North Edisto Inlet, South Carolina	Bear Island, North Carolina
Botany Bay, South Carolina	Bear Inlet, North Carolina
Edingsville Beach, South Carolina	Oak Island, North Carolina
* Edisto Beach, South Carolina	Lockwoods Folly Inlet, North Carolina
* Harbor Island, South Carolina	Shalotte Inlet, North Carolina
South Edisto River, South Carolina	Ocean Isle Beach, North Carolina
Saint Helena Sound, South Carolina	Jumby Bay, Antigua
* Hunting Island, South Carolina	Hopkins, Belize

Previous Project Experience

CSE has completed several hundred projects involving beach surveys, ranging from simple delineations of dune crests and mean high-water lines to dense networks of transects over ebb tidal deltas. CSE's surveys have established standards and common reference contours for wading-depth profiles, long profiles to the local depth of closure, long profiles to (~)–30 ft (USACE standard), and surveys over borrow areas. The degree of survey coverage depends on the specific requirements of each project.

CSE's field survey experience includes the preparation of the first bathymetric map of Bogue Inlet, encompassing the entire ebb-tidal delta and mid-inlet shoal areas and channels. Seabrook Island (SC) is another example of CSE's experience in preparing surveys requiring near-blanket coverage of inlet, shoal, and beach morphology. CSE and its predecessor companies, dating back to the 1970s, have conducted over 40 beach surveys along the Seabrook shoreline in connection with beach restoration projects. Recent project experiences relevant to the proposed work are described below.

Collection of Beach Erosion Monitoring Data for SCDHEC-OCRM

CSE was awarded the 2013-2014, 2015, 2016-2018, 2019-2021, and 2022-2024 Beach Erosion Monitoring Data Collection contracts for SCDHEC Division of Ocean and Coastal Resource Management (OCRM). CSE has successfully conducted the OCRM BERM data collection for the past ten years. The 2013 to 2024 data were collected and delivered to SCDHEC-OCRM in a timely manner. Data were collected at the 397 monument locations along the developed beaches of South Carolina. CSE worked closely with OCRM staff to improve the data quality of the monitoring effort, which had previously experienced inconsistent survey methods and data collection. Rigorous QA/QC procedures were developed and employed to ensure data quality, including narrow survey offsets, close spacing of data points, field notes, photos, accounting for gaps in the data, and post-processing inspections. In addition to the BERM project, CSE has also helped OCRM with various small-scale contracts over the last ten years. It has been our absolute pleasure to work with the OCRM staff, and we look forward to continuing our professional relationship as we work together to monitor South Carolina's coastline.

Beach Monitoring along Kiawah Island (SC)

The Town of Kiawah Island recently renewed (2024-2026) their sponsorship of annual shoreline monitoring surveys. The monitoring determines the rates of sand movement, accretion, and erosion in the project area and seaward side of the island (OCRM 2615 near Beachwalker Park to CSE 252+00 at Stono Inlet). These efforts follow a dozen shoreline erosion reports prepared by RPI and CSE for Kiawah Island since the 1980s (eg – Kana et al 1984, CSE 1999). Post-project surveys have been conducted yearly in early fall between September 2006 and November 2020. Profiles along Kiawah Island are surveyed perpendicular to the local shoreline (CSE baseline) azimuth from the approximate dune crest to a minimum of –12 ft NAVD (depth equal to the normal limit of sand movement in this setting) or at least 3,000 ft from the dune. CSE surveys 65 stations along the length of Kiawah Island. Twenty-three (23) of these stations are OCRM stations (2615-2730) and encompass the beach downcoast of the 2006 project area. The remaining 64 stations are spaced 400 ft apart, follow the 2006 project baseline, and encompass the Ocean Course, incipient lagoon, and Stono Inlet shorelines.

Monitoring and Analysis of the 1997, 2017, and 2019 Myrtle Beach Shore Protection Projects

The City of Myrtle Beach retained CSE in 2001 to complete annual shoreline monitoring of the 1997 shore protection project – Reach 2 (9.23-mile length of ocean shoreline between 82nd Avenue North and 29th Avenue South). The 21st annual study, focusing on the 2008 and subsequent 2017 & 2019 USACE nourishment project (CSE 2021), was completed by CSE for the City and the US Army Corps of Engineers (USACE). The City of Myrtle Beach recently awarded CSE with the current monitoring contract for the years 2021-2025. Project monitoring is performed to track the performance of beach nourishment and document the movement of sand out of the nourishment area. Monitoring provides estimates of shoreline movement trends and identifies areas of erosion and accretion after nourishment, providing important design guidance for future beach projects. The City's surveys take place annually in May/June and include 26 OCRM lines and 45 additional lines established by CSE. Completion and submission of survey observation forms and annotated photographs are also part of the monitoring. Results of the Myrtle Beach monitoring program have been summarized in professional articles and presented at national conferences such as ASCE's conference on Coastal Engineering Practice San Diego 2011.

Beach Monitoring of the 2006 and 2017 Edisto Beach Nourishment Projects

CSE currently (contracted 2018-2022) conducts annual post-project monitoring surveys following the 2006 and 2017 Edisto Beach nourishment projects, which placed over 850,000 cubic yards (cy) of offshore sand on the beachfront. The monitoring effort provides a current status of the beach, including changes in sand volume compared to pre-nourishment and post-nourishment conditions. It serves as an up-to-date reference for pre-storm conditions in the event of a major storm event directly impacting Edisto Beach. The monitoring involves the collection of beach profiles at permanent monuments established by OCRM along the South Edisto River shoreline and the state park and three profiles per groin cell along the Town's beachfront. Extra lines within each groin cell allow evaluation of fillet development under northerly and southerly waves. CSE has monitored the shoreline for the Town of Edisto Beach since the early 1990s.

Edisto Beach Offshore Sand Search Project

CSE was retained by HDR One Company (Charlotte NC) to provide a detailed bathymetric survey covering the offshore area in the vicinity of Edisto Beach, Edingsville Beach, and Botany Bay Island from St Helena Sound to the North Edisto River. The services supported the USACE (Charleston District) feasibility study for the nourishment of Edisto Beach and Edingsville Beach (Colleton County SC). It included detailed bathymetric and geotechnical data of the large shoal on the north side of the South Edisto River Inlet (CSE 2008). The general purpose of the study was to locate ~20 million cubic yards of beach-quality sand sufficient for up to 50 years of initial and future renourishment along Edisto Beach and Edingsville Beach. The bathymetric survey was conducted over a 33,000-acre region between ~2,000 ft and 24,000 ft from Edisto Island. A survey grid was constructed with shore-parallel line spacing of 1,500 ft (1,000 ft for the two most landward lines) and shore-perpendicular spacing of 500 ft totaling ~700 miles of planned surveying.

Post-Project Monitoring of the 2008 and 2018 Isle of Palms Beach Restoration Projects

As part of an annual monitoring agreement with the City of Isle of Palms (currently under contract for 2019-2023) following completion of the 2008 and 2018 nourishment projects, CSE established and monitors ~130 profiles along the length of the island. The monitoring program was built on previous studies by CSE at Isle of Palms dating to the 1980s. Profile spacing in the nourishment project area (north of 53rd Avenue) is 200 ft and increases to no more than 1,000 ft in other areas of the island. Inlet shoals on either side of the island are surveyed in detail to map the movement of channels and sandbars. Profiles along the northeastern end extend up to 15,000 ft from the baseline to fully account for changes in the inlet and its associated ebb-tidal delta. The monitoring program includes a total of nearly 220 miles of planned survey lines. Since 2007, CSE has completed thirteen (16) monitoring events at Isle of Palms (some of which were limited to the project area and included ~85 profile lines).

Seabrook Island Annual Surveys

CSE has produced a series of annual beach monitoring reports for Seabrook Island since the first relocation of Captain Sam's Inlet in 1983. Since 1990, annual surveys have been performed at ~25 transects between Camp St Christopher and Oystercatcher. Some of these transects (CSE-0 through CSE-8) date back to the late 1970s. The remaining transects (2500 series) were established by OCRM. The surveys document rates of inlet migration and allow the community to identify developing erosional hotspots associated with channel encroachment, changes in offshore shoals, or other interruptions of longshore transport. CSE has been contracted by the Seabrook POA for biannual monitoring for 2019-2024.

Hunting Island Post-Project Monitoring

CSE has monitored a series of up to 61 beach profiles at Hunting Island since 1988, including before and after nourishment conditions. CSE designed a restoration project that included nourishment and placement of six groins to combat erosion in the most widely used areas of the park in 2006-2007 and has monitored the beach each year since. SCPRT contracted CSE to conduct a beach renourishment project which was completed in early 2020 with the addition of two new groins. CSE was retained for monitoring this year (2021) and is currently awaiting the release of the future monitoring RFP. Annual reports detailing sand volume change are submitted to the state park service (and OCRM) each year.

Pawleys Island Annual Monitoring

Approximately 83 beach profiles established by CSE have been monitored dating back to 1997 at Pawleys Island. CSE has recently been under contract from 2016 to 2021 monitoring those same transects annually as well as separate post-storm surveys following Hurricane Joaquin (2015), Matthew (2016), Irma (2017), Florence (2018), Dorian (2019), and Isaias (2020). The Town of Pawleys Island has a renewed commitment to monitoring and documenting the condition of the beach, particularly following the beach renourishment project of 2020 in which CSE provided engineering services. FEMA's post-storm public assistance funds provide reimbursement for emergency renourishment of actual sand volumes lost due to major storms. Collecting annual beach monitoring data is critical to making a determination of the volumes of material that qualify for reimbursement and they also demonstrate to OCRM that the Town has an ongoing beach management plan and budget in place.

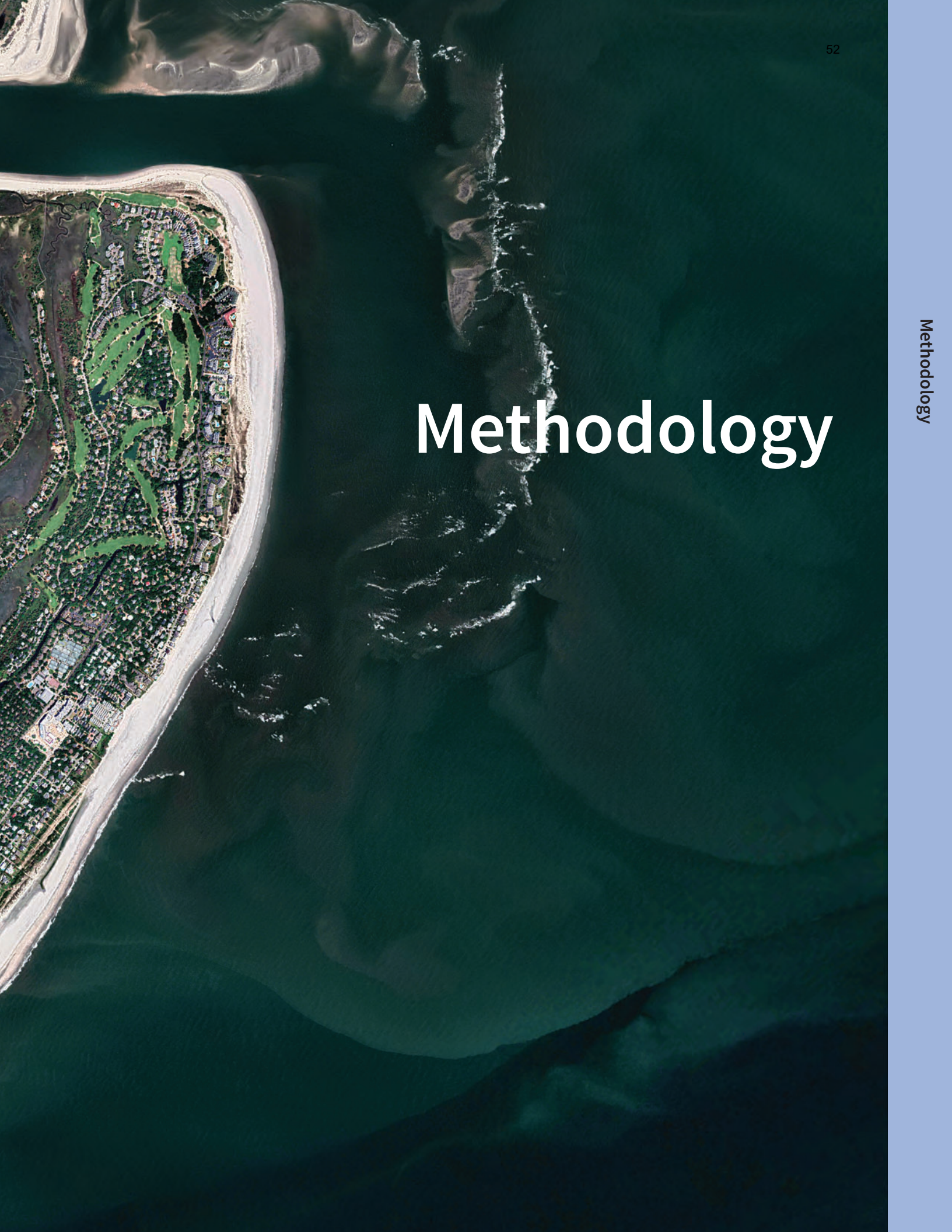
CSE's Commitment to Isle of Palms

Since 2007, CSE has had an ongoing working relationship with the Isle of Palms. This work has included design, permitting, and execution of two nourishment projects totaling over 2.5 million cubic yards of sand, execution of two shoal-management projects, over a dozen annual surveys, three post-hurricane surveys, emergency coordination, and regular communication and support of the community's interests related to the beach beyond the scope of typical beach monitoring services. CSE's team members have developed beneficial working relationships with the City staff, as well as with representatives from the Wild Dunes community, local residents, elected officials, and regulatory agencies. These relationships have proven beneficial in implementing beach management strategies quickly and with the support of the community. CSE regularly attends City Council and committee meetings to provide updates on beach management activities and is available on short notice to provide ongoing consulting work for the City (all within existing contract budgets). Since 2007, CSE has performed all services for the City without requesting additional funds for contracted work. Any change orders to contracts resulted from new work agreements, such as for new permitting services or emergency coordination.

In addition to the engineering services CSE has completed for the City, CSE has also invested in the Isle of Palms beach academically. CSE has presented several papers and presentations about the shoal bypassing cycle, sediment transport, and engineering aspects of the Isle of Palms' beach in professional journals and scientific conferences around the world. In 2018, CSE sponsored five students from Delft University of Technology (Netherlands) to spend the summer at Isle of Palms studying the coastal processes and management as part of their graduate studies. They collected beach survey data and tide and current data, ran morphological models of sediment transport, and interviewed City staff and other members of the local community about beach management at Isle of Palms. The group developed a comprehensive report which received favorable reviews from their advisors at Delft.

CSE has been invested in the Isle of Palms for 40 years, and has gained valuable institutional knowledge while providing effective consulting services. We wish to continue this mutually beneficial relationship in the future.

Methodology



Methodology

Section C – Methodology

This proposal is submitted at the request of the City of Isle of Palms (SC) for annual beach monitoring and post-project environmental monitoring services. The proposed services follow the completion of projects at either end of the island in 2006, 2017, and 2023, and include monitoring of those project areas as well as the remainder of the island.

This proposal covers five years of semi-annual beach condition surveys, including annual monitoring reports and mid-year summaries of survey data.

CSE was retained by the City to complete annual post-nourishment monitoring of the 2006 and 2017 project areas as well as the downcoast areas of Isle of Palms. Monitoring results have been submitted to the City, and provide updated beach condition assessments and analyses of shoreline change, including focused discussion of changes occurring at the dynamic east end. Annual monitoring of developed beaches is considered an essential aspect of coastal community management, and aids in damage prevention, recovery, and planning.

The present proposal covers the following engineering services required to provide five years of updated condition assessments for Isle of Palms' beach, similar to recent monitoring efforts. The most notable difference between this and previous proposals is the inclusion of proactive semi-annual monitoring of the entire island, as requested by the City.

Services Needed by the City of Isle of Palms:

- Semi-annual surveys of the oceanfront, including ~75 profile lines
- Semi-annual reports documenting beach volume changes and project performance
- Semi-annual oblique and ortho-rectified aerial image surveys

C.1. Planning, Communication, and Liaison

Project planning will include coordination and meetings with City representatives to:

- Review the final plan
- Develop schedules
- Participate in public forums
- Provide liaison with government agencies following annual surveys
- Assist the City with communication and liaison
- Coordinate with permitting agencies for compliance

Following authorization to proceed with the proposed scope of services:

- 1.1 CSE will communicate with City representative(s) to clearly define the goals and objectives for the work.
- 1.2 CSE will work with the City to schedule monitoring surveys at a time that will not impact public events, etc. CSE will coordinate with public safety officials regarding beach access and near-shore hydrographic work.
- 1.2 CSE will assist the City in preparing annual summaries, including display graphics for distribution to officials and the public through various mediums, including websites, newspapers, or City newsletters.

C.2. Semi-Annual Beach Condition Surveys

This project task will include semi-annual condition surveys of the beach and inshore zone [to approximately –15 foot (ft) depths]. These surveys will supplement previous field data by CSE and will be used for volume change analysis using reaches and boundaries similar to those in recent reports. The surveys can also satisfy the annual monitoring requirement of project permits should another project be completed within the agreement's timeframe, as the required monitoring area was established to match stations regularly monitored under the annual program.

CSE will also conduct semi-annual surveys of the beach between Dewees Inlet and Breach Inlet. The Engineer will reoccupy profile lines established under the prior monitoring agreement (~75 lines) and will obtain cross-sections from the foredune to approximately –15-ft depth contour, or at least 2,000 ft from the baseline.

Surveys will be conducted from April-May and August-September each year. These surveys will be completed using an RTK-GPS (Trimble™ Model R12i-GNSS) for topographic data collection. The offshore work will be performed using an Applanix Surfmaster POSMV INS positioning system linked to an Odom™ CV100 precision survey fathometer for direct measurements of the bottom without the need for tide corrections. Measurements over subaerial portions of Isle of Palms will extend to low-tide wading depth. Offshore profiles will be collected at 20 Hz but will be filtered in the office to eliminate spikes and provide a 5–7-point floating average. Smoothed offshore data will be edited to a manageable size and merged with subaerial data.

Field data will be entered into CSE's beach profile analysis system (BPAS) and combined with historical profile data. Each profile will be checked for proper juxtaposition with previous surveys. Changes between a survey and selected earlier surveys will be computed (similar to previous profile change analyses for the City by CSE). Overall volume changes by reach will be calculated by extrapolating unit-volume changes over representative shore lengths. CSE will evaluate the net direction and rate of sand transport to downcoast and upcoast reaches and identify developing erosion trends where applicable. Changes occurring within the project area will be identified, and CSE will discuss the project performance and condition of the closure dike and inlet.

C.3. Aerial Photography

Oblique aerial imagery will be collected semi-annually. Imagery will be used to offer visual depictions of the beach condition, dune condition, and shoal locations. Images will be placed side by side with historical images to offer easy-to-see comparisons of the present beach condition with historical conditions.

C.4. Semi-Annual Executive Summary and Annual Monitoring Report

Following the April-May survey, CSE will provide an executive summary to the City describing the shoreline condition. Once the August-September survey has been concluded, the results from both semi-annual assessments will be assembled into a comprehensive technical report, similar to monitoring reports provided to the City under previous monitoring contracts. Reports will document beach volume changes and dune condition and will identify potential concerns. Changes occurring in the project area will be described, and erosional hot spots will be identified. At the discretion of the City, CSE will present findings to City officials, the community, and/or resource agency officials at a schedule determined by the City (two presentations are assumed each year). [Note: CSE will also meet with the City's representatives at other times during each year around the time of field deployments and/or as other opportunities occur.]

C.5. Survey Capabilities

CSE will accomplish the proposed services by deploying one field crew to the Isle of Palms for approximately a one-week deployment. Coastal weather forecasts are monitored prior to deployment, allowing CSE to determine the most suitable wind, wave, and tide conditions for data collection. CSE will avoid collecting beach profiles immediately after storm events, as the beach shape may be altered from its typical configuration after storms. [Note: CSE will be available for emergency post-storm surveys if requested by the City of Isle of Palms as an additional scope of services.]

CSE will be available to conduct emergency post-storm surveys as needed at the City's request.

At each profile, CSE will perform a topographic survey between the landward most accessible or at least 50 feet landward of the primary dune and low-tide wading depth (typically –6 ft NAVD or as far seaward as possible during low tide) using Trimble® R-12i Global Navigation Satellite System (GNSS) receivers utilizing the South Carolina Geodetic Survey (SCGS) South Carolina Real Time Network (SCRTN) for corrected positions. In areas where a connection to SCRTN is unavailable due to poor connectivity, a base station will be set up on a SCDHEC–OCRM monument for corrected positions broadcasted via UHF radio to the local area. Data in x-y-z format will be recorded at appropriate spacing along the transect to accurately depict the beach profile. The spacing between land data points will be no more than 10 ft and will include at a minimum all major breaks in slope. More data will be collected in the dunes, upper beach, and areas with a higher degree of varying topography. CSE prefers surveys performed on foot (with the GNSS antennae mounted on a survey rod) to those conducted on 4x4 vehicles due to errors associated

with varying loads in the vehicle and the potential for the vehicle to sink below the surface elevation of the sand. For this reason, a 4x4 utility vehicle will only be used to move the crew and instruments between stations. All transects will be surveyed using the Trimble® R-12i GNSS receiver mounted on fixed height 2-meter rod.

Offshore work will be performed the same week, typically within one or two days, as the onshore work and difference in time between the onshore and offshore data will never exceed three days. Offshore work is collected at high tide so that the vessel will overlap the land-based portion of the profile data. To maximize data collection, the inshore parts (1,500 ft from the most landward portion of the transect) of all profiles in a region may be collected during the high-tide window (± 2 hrs from high tide) while the portions of the profile further offshore (1,500–6,000 ft from the most landward portion of the transect) may be collected on the same day during lower tides. Overwater data collection will be accomplished using HYPACK® 2024 software.

Bathymetric data will be collected at 20 Hz utilizing the Applanix™ POS–MV Surfmaster inertial navigation system and stored instantaneously on the vessel's dedicated high-performance computer. Soundings or depths will be measured by an Odom Echotrac CV100 single-channel echo sounder utilizing a 4° single beam transducer. Data will be collected from the vessel as far landward as possible at high tide. In CSE's experience, the overlap between the boat survey and land-based survey is between 50 and 100 ft, offering several comparison points between the two surveys. CSE generally removes the overlapping boat-based data to provide a smoother profile (errors in the boat-based survey data are compounded in the surf zone due to aeration, breaking waves, and distance from the track line. Therefore, the land-based data are assumed to be more accurate).

After all over-water work for a region is collected, data is examined in HYPACK® post-processing software. Spikes are removed, and the remaining data are smoothed using a 16-point filter in HYPACK® Single Beam Editor Software. Since offshore data are collected at 20 Hz, CSE generally reduces the number of data points to generate data files that are of manageable size. The land-based and overwater portions of each profile are then combined in Microsoft® Excel and examined to ensure the overlapping portions of the two surveys overlap and vertical differences between the two are minimal. Finally, the overlapping overwater data is removed to provide a complete profile.

C.6. Quality Assurance/Quality Control

From the analysis of tens of thousands of profiles over many years, CSE professionals have learned how to collect quality data efficiently, evaluate those data to identify processes affecting an area, and communicate the results to clients to provide sound solutions to beach management. Of the utmost importance is ensuring the accuracy of our data. CSE employs rigorous QA/QC procedures to ensure accurate data are being collected. As part of our ongoing attempt to offer the best

product, CSE utilizes the latest in surveying and communication technology. CSE is able to transmit data to office personnel, compare newly collected data with historical profiles, track weather, and communicate with the home office while mobilized in the field. This allows an efficient and effective means of ensuring data accuracy. QA/QC procedures for the land-based and overwater aspects of CSE's survey methods are detailed below.

Land-Based Survey

Prior to obtaining profile data, CSE’s field team completes a QA/QC worksheet for both land (walking) and overwater work. Each sheet contains spaces for instrument configuration parameters and environmental conditions so that hardware setups, as well as project metadata (date, time, surveyors, weather conditions, and spatial references), are documented and checked. Most of the hardware configuration settings are digitally recorded with each data point; even so, having these QA/QC worksheets can eliminate errors that may arise from using different survey equipment, antennae heights, and instrument configurations at different locations. CSE regularly takes photos of profiles monitored as a way to make visual comparisons to prior years and for QA purposes.

Overwater Survey

As with the land-based survey, field crews will complete a QA/QC form specific to overwater work prior to data collection from CSE's survey vessel. Instrument configurations are noted, including the positions of the GNSS antennas, the inertial motion unit (IMU) and echo sounder configuration, datum, units, dates, weather conditions, and software configuration settings. Fields for bar checks and speed of sound calculations are included in each worksheet.

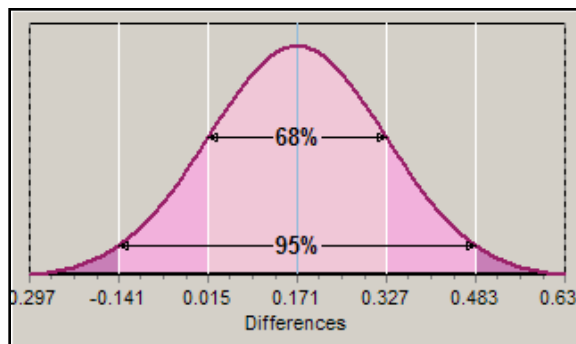


Calibration of acoustic-sounding instruments is critical in assuring the accuracy of depth measurements. The speed of sound will be measured and recorded prior to, during, and after each survey day using a Castaway CTD instrument. Measurements are continuously recorded as the CTD is cast or lowered and retrieved through the entire water column to produce accurate conductivity, temperature, and depth profiles. From these observations, the CTD calculates a speed of sound vs depth profile which can be viewed immediately. The CTD also has a built-in GPS allowing each cast to be referenced to a specific time and location. Following the speed-of-sound calculation, the ODOM[®] CV100 sounder is calibrated to the average speed of sound, and a bar check is performed at 5-ft intervals. A bar check is one of the oldest methods for calibrating an echo sounder. A bar is lowered at fixed, known depths below the transducer and the sounder depth is checked at each depth, and any adjustment is made to provide a consistent and accurate measure. Bar checks will be repeated once during surveying, and after surveying each day. Results of the speed of sound calculation and bar checks will be recorded on daily QA/QC forms.

With RTK-GNSS and SCRTN capability, CSE can reduce error and field time during offshore work. RTK– GNSS eliminates the need for tidal corrections, which can introduce error and complicate processing, and SCRTN eliminates the need to set up base stations, meaning the crew can spend more time surveying while achieving centimeter accuracy.

HYPACK® software is used to produce planned line files and offers the ability to automatically eliminate data that does not meet precision thresholds (HDOP, PDOP, RTK, Fix, etc). It also provides alarms to let the boat operator know when the boat has deviated a set distance away from the survey line. CSE will set the limit to 20 ft as prescribed in the RFP. The position and orientation of the boat relative to the survey line are updated in real time, allowing CSE to obtain straight profiles. Data from the land-based survey are entered into HYPACK® before overwater work to ensure the boat overlaps the land-based data.

CSE will establish shore-parallel survey lines that intersect the beach profile lines to provide crossing statistics using HYPACK® software. This offers a description of the average differences in measured elevation at points in the survey area. At each intersection between the shore-parallel line and the profile lines, HYPACK® computes the difference in elevation. Statistics are calculated showing the average elevation difference (total and absolute value) for all crossings. Since the shore-parallel lines and beach profile lines are likely to be collected at different tidal stages, a low mean difference and standard deviation ensure that instruments were configured properly. On the right, an example output from the HYPACK® crossing statistic is shown which represents data collected over three days at all stages of the tide.



Cross Statistics Report

Number Of Intersections	300
Search Radius (ft)	25
Standard Deviation (ft)	0.156
Absolute Difference Mean (ft)	0.171
Arithmetic Mean (ft)	-0.033

Accuracy

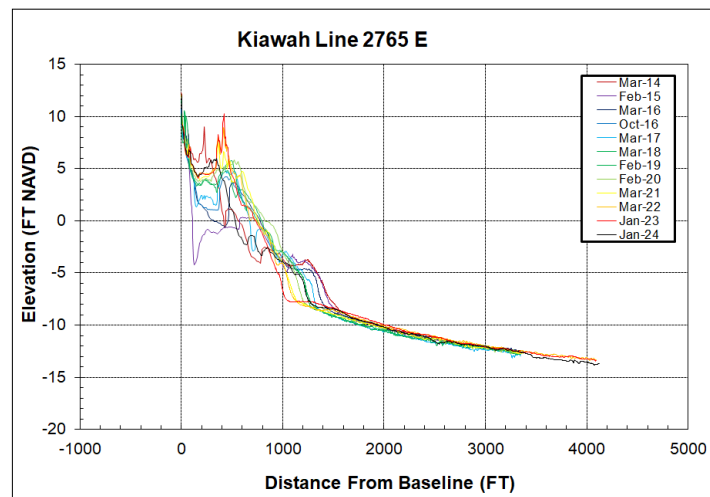
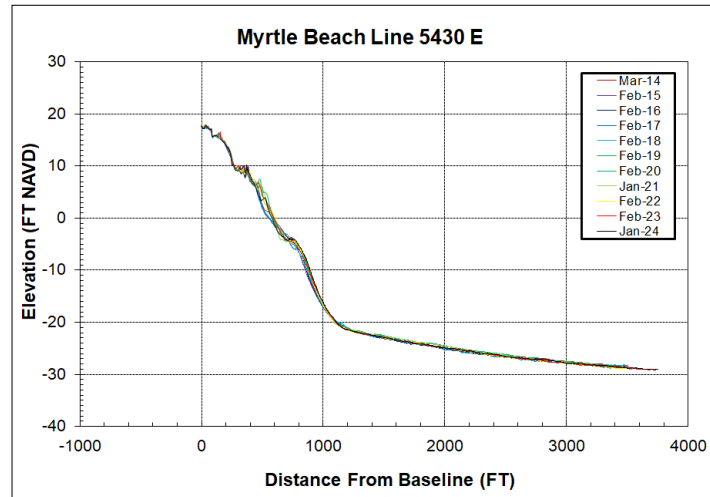
CSE utilizes the latest in surveying technology to obtain accurate beach profiles. The accuracy of beach profiles is limited by the resolution(s) of the instrument(s) being used. With RTK-GNSS coupled with SCRTN virtual reference system (VRS) technology, overland portions of the profile can easily achieve a horizontal and vertical accuracy of <5 cm. CSE typically sets its accuracy limits at 0.04 ft (~1.2 cm) for horizontal and 0.06 ft (~1.8 cm) for vertical when collecting land-based data (meaning a topographic point will not be taken when this threshold is exceeded). CSE uses a Trimble® R-12i GNSS mounted to a survey rod. This accuracy is obtained from the dunes (monument) to low-tide wading depth (typically -6 ft NAVD).

The overwater portion of the survey is necessarily less accurate due to the additional instrumentation and methods associated with data collection. The RTK-GNSS maintains the <2 cm accuracy; however, additional error is associated with the sounder (0.01 m ± 0.1% depth, with a 0.1-ft resolution), and with the motion/location of the survey vessel. The location of the survey vessel with respect to the survey line may also introduce error in the profile (overlaps with the land-based data may be a horizontal distance of up to 20 ft from the “survey line”).

CSE collects offshore data beginning at the seaward end of the profile and proceeds towards the beach. This offers a “smoother” profile, as the boat motion is in the same direction as waves. It

also ensures that the nearshore portion of the profile is collected close to the intended line, as the boat does not have to turn and immediately begin collecting data. This offers better overlaps with the land-based survey. A factor contributing to CSE's quality data collection is the vessel used. CSE's shallow draft survey boat provides a fully-enclosed cabin with high visibility and good protection for the electronics that are the heart of the instrumentation. Full-size computer monitors are used to aid navigation along planned lines and provide real-time images of the profile as it is collected. The survey vessel is more stable than jet-skis or semi-inflatable vessels used for similar surveys. This reduces crew fatigue and allows for longer data collection periods.

The graphic on the right shows profiles from two locations where CSE collected profiles for the OCRM BERM project from 2014 to 2024. The upper profile is from Myrtle Beach (SC) at beach profile monument 5430E. The lower profile is from Kiawah Island (SC) at beach profile monument 2765E. Note how the seaward portions of the Myrtle Beach profile show good overlap between the CSE surveys. Overlap in the profile beyond the depth of closure indicates the methods used by CSE produce accurate profiles. The Kiawah profile is from the east end of the island and demonstrates an erosional beach due to the increased tropical cyclone activity in recent years.



C.7. Equipment and Software

CSE’s equipment and software are discussed below. In the event of equipment malfunction, CSE maintains strong relationships with equipment suppliers and will replace or rent needed equipment promptly (often overnight) to continue data collection.



The R/V Southern ECHO

The 24-ft Tuff Boat, R/V Southern ECHO, is a custom welded aluminum-hull boat, powered by twin Suzuki 115 HP outboard motors. An extremely shallow draft and fully enclosed pilothouse allow CSE’s licensed captain and crew to collect bathymetric data close to shore and under a wide range of conditions. The R/V Southern ECHO can operate in water depths as shallow as 1.5 ft, which allows for continuous data collection into the surf zone.

Trimble® R12i GNSS Receiver with SCRTN VRS (2 units)

The Trimble® R12i GNSS receiver is utilized to collect topographic data. The unit is capable of ~10 millimeter (mm) horizontal accuracy and ~20 mm vertical accuracy. Integrated cellular network connectivity to the SCRTN VRS eliminates the need for a separate ‘base station.’ Using the SCRTN VRS decreases setup time, personnel requirements, equipment costs, and error sources.

Applanix™ POS MV Surfmaster

The R/V Southern ECHO is equipped with a fully dedicated Global Navigation Satellite System (GNSS) and integrated inertial motion unit (IMU) to produce a full six-degrees-of-freedom position and orientation solution. The POS MV Surfmaster provides accurate attitude, heading, heave, position, and velocity data of the vessel and onboard sensors.

Odom EchoTrac CV100 and SMSW200-4a Transducer

CSE uses a single-frequency Odom Echo Sounder (EchoTrac CV100) for depth measurements. The sounder has a depth range of 0.8 ft to 1,000 ft. The stainless steel transducer has a 4° beam width and is designed to operate in very shallow depths. The unit has a resolution of 0.1 ft and an accuracy of 0.01 m (0.03 ft) ± 0.1% of depth.

The CastAway®-CTD

The CTD is a lightweight, easy-to-use instrument capable of simultaneous measurements of conductivity (salinity), temperature, depth, pressure, salinity, and density. CSE utilizes the CTD to calculate and record the speed of sound vs. depth profile. The speed of sound results are used to calibrate the Odom sounder.

Polaris Ranger UTV

The Polaris Ranger is a “side-by-side” utility vehicle (UTV). The four-wheel-drive UTV is utilized to safely and efficiently transport personnel and equipment between survey transects.

C.8. Software

CSE maintains up-to-date software licensing and support for the following software, which will be used in the proposed work and analysis.

HYPACK® 2024 (Overwater Work)

Provides tools to design surveys, collect data, apply corrections to soundings, remove outliers, plot field sheets, export data to CAD, compute volume quantities, generate contours, create side-scan mosaics, and create/modify electronic charts (www.hypack.com). HYPACK® provides graphical editing and sounding selection routines that allow for quick preparation of survey data for plotting, export to CAD, or several other final products. The SINGLE BEAM EDITOR of HYPACK® provides for:

- Graphical review and editing of track lines and depth profiles
- Display of design templates and previous survey profiles
- Real-time telemetry gauges
- RTK tides
- Sound velocity corrections

Trimble® Business Center (Overland Work)

Trimble® Business Center™ (TBC) software is the ideal software for integrating real-time kinematic (RTK), post-processed GNSS, and conventional survey data. Designed for ease of use, high productivity, and quality control, the software imports, checks, and processes field data. The data is stored in Microsoft Access database format for easy customized access, reporting, and editing. The Trimble® Business Center™ software provides a seamless link between field collected data and third-party design, CAD, and GIS packages. Data can be exported to a wide variety of standard data formats.

MATLAB®

MATLAB® is a high-level technical computing language and interactive environment for algorithm development, data visualization, data analysis, and numeric computation. Using the MATLAB® product, you can solve technical computing problems faster than with traditional programming languages, such as C, C++, and Fortran (www.mathworks.com). CSE uses MATLAB® to quickly plot and export data into a variety of formats. CSE has produced custom MATLAB® scripts for plotting and analysis of beach profile data in a variety of formats.

Microsoft Office®

CSE utilizes Microsoft® Office, and can provide the City of Isle of Palms with data as such as Excel (.xls or .xlsx) or Access (.dbf) in either version's format.

AUTOCAD Civil 3D, ESRI ArcMap, and Global Mapper

CSE uses these software packages for GIS applications including data archiving, QA/QC, drawings, graphics, and database management. These software programs allow CSE to provide clients data in several formats, including .shp, .kmz, .csv, .dwg, .dxf, .mxd, and several other formats.

C.9. Project Schedule

The schedule is based on a start date of August 2024 for the services proposed herein. The schedule may be modified at the direction of the City. An anticipated schedule is provided below. The schedule is subject to change at the request of the City.

Date	Task#	Description
Aug 2024	1	Initiate work under the present proposal/finalize plan with the City
Aug-Sep 2024	2, 3	First Year 1 Condition Survey and Aerial Imagery
Nov 2024	4	Year 1 Executive Summary
April-May 2025	2, 3	Second Year 1 Condition Survey and Aerial Imagery
July 2025	4	Year 1 Comprehensive Report – End of Year 1 Services
Aug-Sep 2025	2, 3	First Year 2 Condition Survey and Aerial Imagery
Nov 2025	4	Year 2 Executive Summary
April-May 2026	2, 3	Second Year 2 Condition Survey and Aerial Imagery
July 2026	4	Year 2 Comprehensive Report – End of Year 2 Services
Aug 2026	2, 3	First Year 3 Condition Survey and Aerial Imagery
Nov 2026	4	Year 3 Executive Summary
April-May 2027	2, 3	Second Year 3 Condition Survey and Aerial Imagery
July 2027	4	Year 3 Comprehensive Report – End of Year 3 Services
Aug 2027	2, 3	First Year 4 Condition Survey and Aerial Imagery
Nov 2027	4	Year 4 Executive Summary
April-May 2028	2, 3	Second Year 4 Condition Survey and Aerial Imagery
July 2028	4	Year 4 Comprehensive Report – End of Year 4 Services
Aug 2028	2, 3	First Year 5 Condition Survey and Aerial Imagery
Nov 2028	4	Year 5 Executive Summary
April-May 2029	2, 3	Second Year 5 Condition Survey and Aerial Imagery
July 2029	4	Year 5 Comprehensive Report – End of Year 5 Services

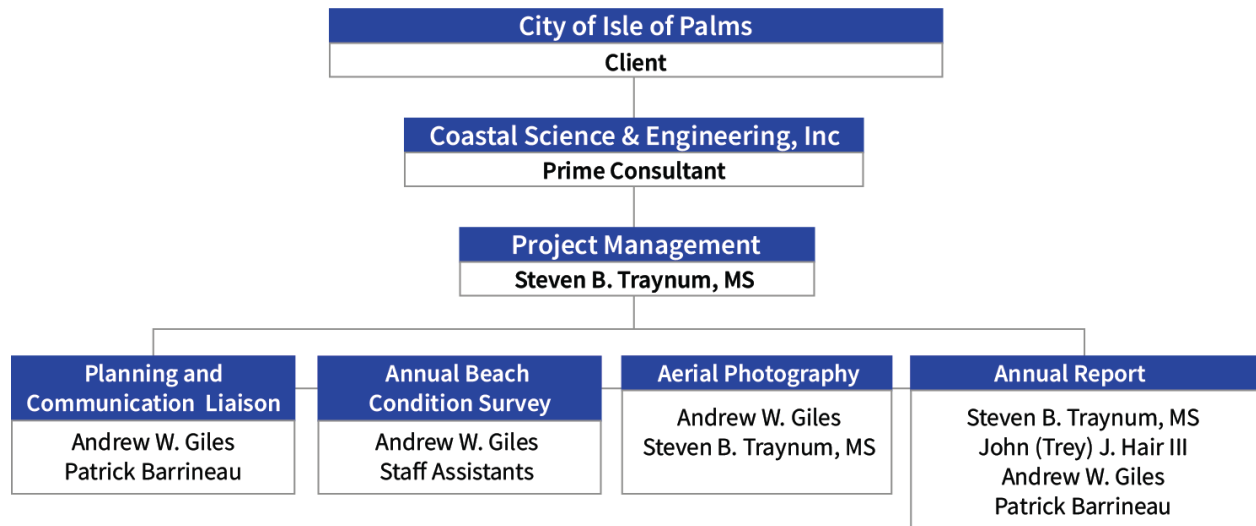


Project Team

Project Team

Section D – Project Team

CSE's proposed team members bring a combined 80 years of experience in beach erosion studies and surveys. This experience is reflected in projects completed and professional publications related to beach survey and analysis techniques. CSE's staff is intimately familiar with the area based on prior experience along South Carolina's coast mapping shorelines, designing beach nourishment projects, and performing monitoring for a number of communities. The proposed organization chart below lists the personnel and project organization that CSE proposes to complete the work.





Steven Traynum – Project Management

Mr. Traynum has 17 years of experience specializing in coastal hydrodynamics and estuarine processes. He also serves as project manager for several local beach monitoring programs and beach nourishment projects for CSE (ie – Kiawah, Seabrook, Edisto, Hunting Island, Isle of Palms). His coastal engineering project experience includes monitoring and analyzing erosion and morphological changes of natural and nourished beaches and coastal inlets, measuring and analyzing tidal inlet currents, and land and hydrographic surveys, including sediment collection on land and in deep water. Mr. Traynum has collected hundreds of beach profiles using the latest surveying techniques (RTK-GNSS). He serves as project manager for local beach monitoring programs involving the collection and analysis of land-based and hydrographic profile data to determine short and long-term erosion rates, as well as underlying causes of erosion. Relevant work experience includes:

SCDHEC-OCRM – Project Manager. Collection of Beach Erosion Monitoring Data along ~400 profiles. Conducted in-office Quality Assurance / Quality Control (QA/QC), generated direct deliverables for SCDHEC-OCRM staff and management.

Edisto Beach (SC) – Project Manager. Post-project beach monitoring encompassing ~90 survey stations, including three stations per groin cell. Participated in field data collection and analysis. Generated monitoring reports showing comparative conditions of the beach.



Andrew Giles – USCG licensed Near Coastal Master – Field Data Collection

Captain Andrew Giles is the senior technical associate specializing in bathymetric and topographic field data collection and data management for CSE (2006-present). Mr. Giles holds a BS from the University of South Carolina. He is a Coast Guard-licensed Master of 50 GT Near Coastal (License #2876702), has Hypack® Certification (2017), and is a licensed FAA UAS pilot (Certificate #3971935). His field data collection experience includes topographic and bathymetric surveys via the latest methods of Real-Time-Kinematics positioning (RTK-GNSS) utilizing Virtual Reference Station (VRS) and Real Time Networks (RTN) for achieving centimeter-level accuracy. Captain Giles has conducted these surveys in a wide range of tidal and wave energy conditions and has field experience at almost every beach and inlet in South Carolina.

SCDHEC-OCRM – Project Manager and Field Party Leader (data collection) for the collection of beach erosion monitoring data along ~400 profiles (~3,500 ft long) during all deployments throughout 2013–2024 surveys.

Isle of Palms (SC) – Field Party Leader (data collection). Collected data along ~130 beach and inshore profiles along the Isle of Palms beach. The scope of services included a bathymetric survey of Dewees Inlet and Breach Inlet (lines spaced between 200 and 800 ft over ~8 sq. miles) and the development of a three-dimensional digital terrain model from 2013 to 2023. These data provide a decade-long time series illustrating complex shoal migration and cycling over an ebb-tidal delta – the first comprehensive dataset of its kind along the East Coast.



Patrick Barrineau, Ph.D., PG – Planning and Communication Liaison

Dr. Barrineau is a coastal scientist and project manager, providing exceptional sedimentary processes and landscape evolution expertise. He manages projects in New York, North Carolina, South Carolina, and Georgia, and regularly curates geophysical data from field collection to publication in concert with CSE staff. Dr. Barrineau has prepared reports and permit documents for projects at Bridgehampton-Sagaponack (NY), Nags Head (NC), Cape Hatteras National Seashore (NC), Avon (NC), Buxton (NC), Arcadian Shores (SC), Myrtle Beach (SC), Pawleys Island (SC), Debidue Island (SC), Kiawah Island (SC), Seabrook Island (SC), Edisto Beach (SC), and Sea Island (GA). Dr. Barrineau served as the principal sub-consultant to VHB (Vanasse Hangen Brustlin, Inc) for the National Park Service Programmatic EIS for beach nourishment events in Cape Hatteras National Seashore, which provides guidance for 30+ years of anticipated beach restoration projects in the Northern Outer Banks.

Dare County (NC) – Project Manager. Primary liaison between Dare County, NPS, USACE, and the State of North Carolina. Design of nourishment plan and construction management, followed by post-project beach monitoring. Participates in field data collection and analysis. Generates monitoring reports showing comparative conditions of the beach.

Myrtle Beach (SC) – Project Manager. Responsible for data collection, analysis, and preparation of annual monitoring reports for the City of Myrtle Beach following federal nourishments along ~ 9 miles of oceanfront.



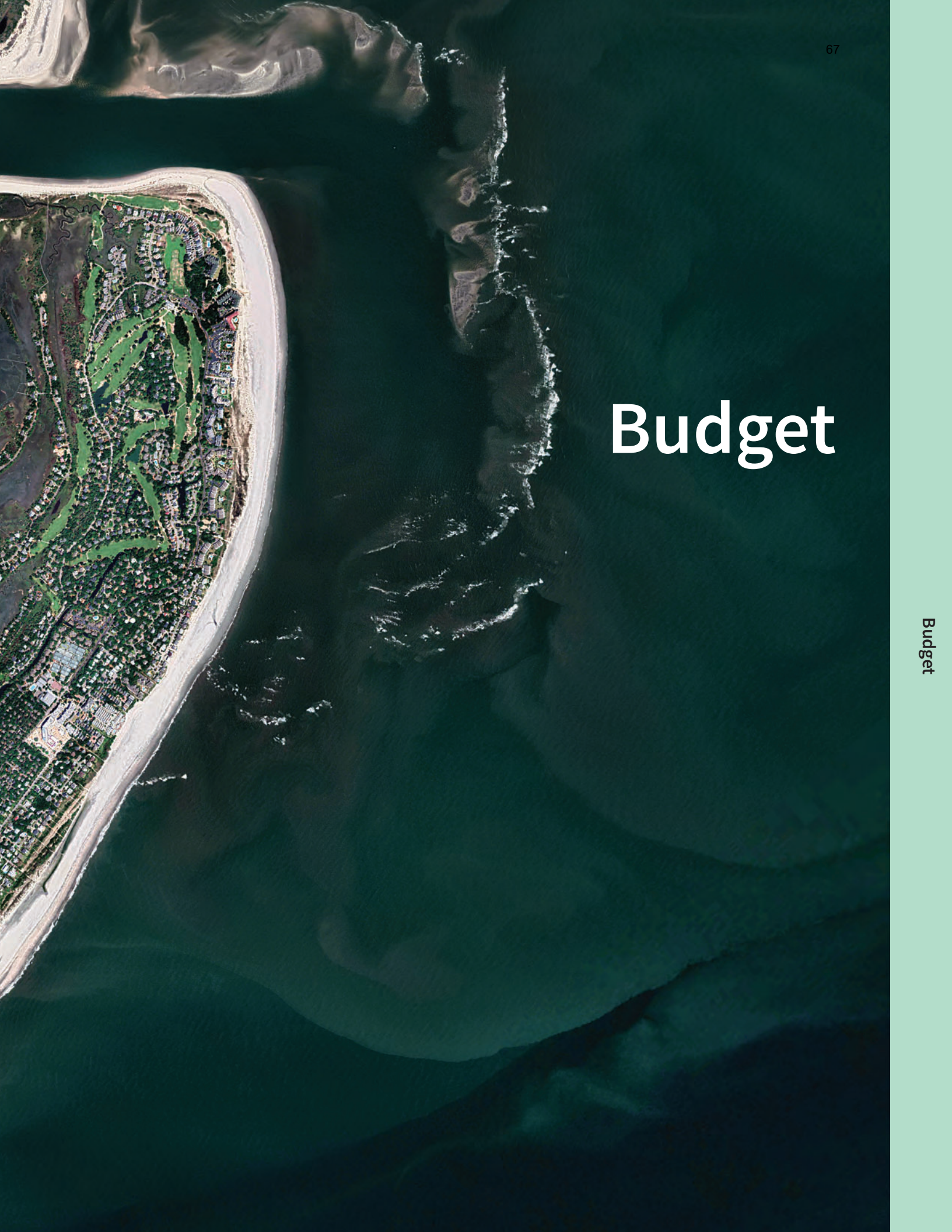
Trey Hair – Senior CAD Engineering Technician – Mapping, GIS, and Reporting

Mr. Hair is an engineering technician with 25 years of experience supporting CSE's professional engineers and geologists in projects pertaining to beach nourishment, groin and jetty design, revetments and seawalls, and inlet relocations. He performs profile analysis from collected and/or existing data, historical shoreline mapping, topographic and bathymetric data compilation, and volume change calculations. Mr. Hair maintains CSE's annual monitoring project database, including data from locations in South Carolina, North Carolina, and other East Coast beaches. He has extensive data collection experience, including field investigations of project sites, installation of coastal engineering instrumentation, and sediment sample collection. Mr. Hair is proficient in survey processes from the initial setup of projects to data reduction and map production. Relevant project experience includes:

Bogue Banks (NC) – Engineering Technician. Collection and analysis of beach profiles from ~160 stations along nearly 35 miles of shoreline (including adjacent islands). He produced construction plans that included profile data and nourishment fill quantities.

Edisto Beach and Hunting Island (SC) – Engineering Technician. Assembled beach profile data and nourishment fill templates for permit drawings and construction plans. He also assisted with beach profile data collection and analysis.

Isle of Palms (SC) – Engineering Technician. 3D modeling of the beach and offshore zone, including inlet shoals. He assisted in the development of monitoring baselines and the collection and analysis of beach profile data.



Budget

Fees & Hourly Rates

Section E –Budget

The fee for CSE services will be based on the charges listed below. All fee quotations are estimates, and actual fees are based on actual time and expenses incurred by CSE unless otherwise stated in the proposal. All rates are listed in U.S. dollars.

Fees by task are based on estimated numbers of person-days to accomplish the scope of services detailed herein. In-office expenses include communication, copying, insurance (etc) and are charged as a percentage of fees rather than separate itemization. Direct expenses include travel (standard U.S. government mileage rate), lodging and per diem, 4-by-4 beach vehicle rental at \$120/day, survey boat rental at \$600/day, RTK-GPS rental at \$500/day, fuel and dockage at cost, sediment testing at \$60/sample, and field supplies at cost.

PERSONNEL	Staff Category	Hourly Rate
	Principal	195.00
	Coastal Engineer/Project Manager	175.00
	Sr Technical Associate/Coastal Scientist	150.00
	Technical Staff (CAD)	125.00
	Tech-Field Assistants	100.00

Task #	Task Description	Task Fee
1	Planning, Communication, Liaison	\$13,560
2	Semi-Annual Beach Condition Survey (per year)	\$37,160
3	Semi-Annual Aerial Photography (per year)	\$7,200
4	Semi-Annual Report (per year)	\$29,960
1-4	Labor Subtotal - Tasks 1-4	\$87,880
	In Office Expenses - Tasks 1-4	\$4,394
	Direct Expenses - Tasks 1-4	\$13,726
	Total Project Tasks 1-4 (annual)	\$106,000
	<i>Cost of Annual Services for All Five Years</i>	<i>\$530,000</i>

Additional Services

The work described in the scope of services (paragraphs C1.1 through C4.2) does not include work in the following categories. Work in these categories or other services requested by the City will be considered additional services.

If the City wishes CSE to perform any of the following additional services, the City shall so instruct CSE in writing and the Engineer will perform or obtain from others such services and will be paid as provided in the Agreement for Professional Services between the City and the Engineer.

- Services resulting from significant changes in the general scope, extent or character of the project, or major changes in the documentation previously accepted by the City where changes are due to causes beyond CSE's control
- Providing renderings or models outside of what is presented in Tasks 1–4
- Detailed consideration of operations, maintenance and overhead expenses; value engineering; and the preparation of rate schedules, earnings and expense statements, cash flow and economic evaluations, feasibility studies, appraisals and valuations
- Furnishing the services of environmental scientists, biologists, fisheries scientists, chemical analysis laboratories or other specialized scientific testing, evaluations or services not specifically included in the scope of services
- Geotechnical engineering studies, including sediment sampling, borings, and reports not specifically included in the scope of services
- Preparing to serve or serving as a consultant or witness in any litigation, arbitration, or other legal or administrative proceeding except where required by the scope of services
- Services of the independent cost estimator shall be additional services

Add-On Services

In the event the City requires any additional surveys for pre-/post-storm assessments or other reasons, CSE will complete a comprehensive survey of the island using the same scope and methods as outlined in Task. Fees and expenses for additional surveys will be the same as Task 2 costs shown above. A brief letter report will be prepared that will summarize volume changes from the previous survey.

References

References

Section F – Client References

CSE offers the following examples of recent projects and encourages the City to contact the persons listed below to discuss our work.

DeBordieu Colony Community Association		Town of Pawleys Island	
Owner Contact	Blanche Brown General Manager	Owner Contact	Daniel Newquist Town Administrator
Telephone	843-527-4436	Telephone	843-237-1698
Email Address	bbrown@debordieucolony.org	Email Address	dnewquist@townofpi.com
Services Provided	Engineering services for beach nourishment and groin construction (2022) and beach profile monitoring	Services Provided	Engineering services for a 2020 beach nourishment project and beach profile monitoring
Litchfield Beach		Seabrook Island POA	
Owner Contact	Konni McMurray Peninsula Property Owners Assoc.	Owner Contact	Steve Hirsch, PE, PMP Director of Engineering
Telephone	910-690-1314	Telephone	843-768-0061
Email Address	kmcmurray422@gmail.com	Email Address	shirsch@sipoa.org
Services Provided	Engineering services for a 2022 nourishment project along Inlet Point and ongoing beach monitoring	Services Provided	Engineering services for the 2015 relocation of Captain Sam's Inlet and beach monitoring
Town of Edisto Beach		Dare County, North Carolina	
Owner Contact	Mark Aakhus Town Manager	Owner Contact	Robert Outten County Manager/Attorney
Telephone	843-869-2505	Telephone	252-475-5811
	maakhus@townofedistobeach.com	Email Address	outten@darenc.com
Services Provided	Engineering services for the Edisto Beach nourishment project (2017), groin maintenance, and ongoing beach profile monitoring, FEMA coordination	Services Provided	Engineering services for beach nourishment: Village of Buxton (2018 & 2022), Avon Village (2022), and ongoing engineering and beach monitoring services
Hunting Island, South Carolina		City of Folly Beach	
Owner Contact	Nicholas Leitner Chief of Engineering	Owner Contact	Tim Goodwin Mayor
Telephone	803-734-0258	Telephone	843-729-0298
Email Address	nleitner@SCPRT.com	Email Address	tgoodwin@cityoffollybeach.com
Services Provided	Engineering services for the 2006 and 2020 Hunting Island State Park beach nourishment and groin construction project and ongoing beach profile monitoring	Services Provided	Profile monitoring, USACE project coordination, community outreach, resilience planning

Bid Forms

Oath of Non-Collusion
Pending Legal Actions

Bid Forms

Sections G-H – Required Bid Forms and Information

Included are the following required forms and information:

- Section G — Oath of Non-Collusion (included on the following page)
- Section H — Statement Regarding Pending Legal Actions
 - **Pawleys Island, SC**
CSE was named a party in a suit along with other entities regarding the possible impacts of a beach nourishment project on adjacent shorelines. CSE is working with all parties to mediate the case in a manner that is acceptable to all.

NON-COLLUSION AFFIDAVIT

The undersigned bidder or agent, being duly sworn on oath, says that he/she has not, nor has any other member, representative, or agent of the firm, company, corporation or partnership represented by him, entered into any combination, collusion or agreement with any person relative to the price to be bid by anyone at such letting nor to prevent any person from bidding nor to include anyone to refrain from bidding, and that this bid is made without reference to any other bid and without any agreement, understanding or combination with any other person in reference to such bidding.

He/She further says that no person or persons, firms, or corporation has, have or will receive directly or indirectly, any rebate, fee gift, commission or thing of value on account of such sale.

OATH AND AFFIRMATION

I HEREBY AFFIRM UNDER THE PENALTIES FOR PERJURY THAT THE FACTS AND INFORMATION CONTAINED IN THE FOREGOING BID FOR PUBLIC WORKS ARE TRUE AND CORRECT.

Dated this 7th day of August, 2024

Coastal Science & Engineering, Inc
(Name of Organization)

President
(Title of Person Signing)

[Signature]
(Signature)

ACKNOWLEDGEMENT

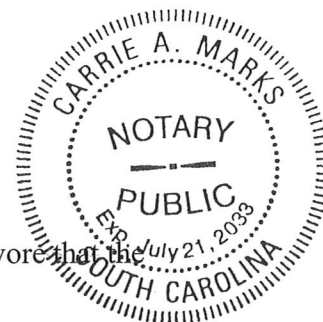
STATE OF South Carolina)
) ss
COUNTY OF Lexington)

Before me, a Notary Public, personally appeared the above named and swore that the statements contained in the foregoing document are true and correct.

Subscribed and sworn to me this 7th day of August, 2024.

[Signature]
Notary Public Signature

My Commission Expires: July 21, 2033





Appendices

Staff Resumes

Equipment

APPENDIX A

Staff Resumes

STEVEN B TRAYNUM

COASTAL PHYSICAL SCIENTIST

Email: straynum@coastalscience.com

PROFILE

Mr. Traynum specializes in coastal hydrodynamics and estuarine processes (2007–present). He also serves as project manager for numerous beach monitoring programs and nourishment projects. Mr. Traynum is experienced in critical area permitting including analysis of environmental impacts and preparing biological assessments and EIS documents. Liaises between resource agencies and clients, and assists in developing appropriate monitoring plans to determine project impacts to endangered and threatened species. His coastal engineering project experience includes design of coastal erosion mitigation projects, monitoring and analysis of erosion and morphological changes of natural and nourished beaches and coastal inlets, measurement and analysis of tidal inlet currents, and on-site land and hydrographic surveys.

TECHNICAL EXPERIENCE

Extensive experience in estuarine and coastal settings including deployment and recovery of hydrographic equipment, such as acoustic Doppler current profilers (SonTek, RDI, Nortek), acoustic Doppler velocimeters, CTDs, and pressure sensors.

Mr. Traynum has collected thousands of beach profiles using the latest surveying techniques (RTKGPS). He is a certified (SSI), open-water diver.

COASTAL EROSION/RENOURISHMENT EXPERIENCE

Managed restoration projects at Nags Head (NC) involving placement of 4.6 million cubic yards (cy) of sand, Isle of Palms (SC) involving placement of 2.5 million cy, Folly Beach (SC) involving placement of 415,000 cy and 745-ft-long terminal groin construction, and Edisto Beach (SC) including placement of one million cy and construction management for 25 groin extensions (~\$5 million).

Project manager for beach monitoring programs involving collection and analysis of land-based and hydrographic profile data to determine short- and long-term erosion rates and project performance and impacts. Monitoring sites include: Isle of Palms, SC Hunting Island, SC Edisto Beach, SC Kiawah Island, SC

Critical area permitting for projects in SC and NC, including Biological Assessments, Essential Fish Habitat reports, EIS documents, and monitoring programs coordinated with USFWS, USACE, NMFS, and state agencies.

MatLab® scripts for automatic generation of sediment grain-size distributions, beach profile analysis, and nourishment profile design.

EDUCATION

MS. Marine Science, University of South Carolina
BS. Marine Science, USC Honors College
Coastal Engineering Certificate, Old Dominion University
ME. Coastal Engineering (pending) Old Dominion University

SPECIALTIES

- Beach nourishment design and monitoring
- Design of coastal structures
- Environmental impact assessments
- Coastal and estuarine processes
- Collection and analysis of beach profile data
- Hydrographic instrument deployment
- Collection and analysis of coastal sediments

SOFTWARE PROGRAM CAPABILITIES

- ArcGIS
- Global Mapper
- MatLab
- Microsoft Office

SELECT PUBLICATIONS

Traynum, SB, TW Kana, HL Kaczowski. 2019. The construction and impacts of a groin-lengthening project at a southeast U.S. beach. In Proc. Coastal Structures 2019 (Hanover Germany) 30 Sep – 20 Oct, 10 pp.

Traynum, SB, TW Kana, and DR Simms. 2010. Construction and performance of six template groins at Hunting Island, South Carolina. *Shore & Beach*, Vol 78(3), pp 21–32.

Kana, TW, HL Kaczowski, and SB Traynum. 2015. (BC) An empirical approach to beach nourishment formulation. Chapter 4 in YC Kim (ed), *Design of Coastal Structures and Sea Defenses*, Vol 2, Series on Coastal and Engineering Practice, World Scientific, pp 105–144.

Kaczowski, HL, SB Traynum, TW Kana, and M Rentz. (2015) Terminal groin and beach restoration at Folly Beach County Park (South Carolina). In D Cox and L Wallendorf (eds), *Proc. Coastal Structures and Solutions to Coastal Disasters*, ASCE– COPRI (Boston MA, 9–11 September 2015), 12 pp.

Kana, TW, SB Traynum, D Gaudiano, HL Kaczowski, and T Hair. 2013. The physical condition of South Carolina beaches 1980–2010. *Jour Coastal Research*, Special Issue 69, pp 61–82.

ANDREW W GILES III

SENIOR TECHNICAL ASSOCIATE

Email: dgiles@coastalscience.com

PROFILE

Captain Andrew Giles is CSE's Senior Technical Associate overseeing field operations and specializing in bathymetric and topographic field data collection and data management (2006–present). Mr. Giles holds a BS from the University of South Carolina. He is a Coast Guard licensed Master, FAA licensed UAS pilot, and has HYPACK® Certification (2017). His experience includes leading, planning, and coordinating topographic and bathymetric surveys using the latest methods of Real Time Kinematics positioning and navigation (RTK-GNSS) utilizing Real Time Networks (RTN) and Unmanned Aerial Systems (UAS) for aerial mapping operations.

PROFESSIONAL CERTIFICATIONS

USCG Licensed Captain – 50 GRT Master #2876702
 FAA Licensed UAS Pilot – Remote Pilot #3971935
 SSI–Certified Open Water Diver
 AHA CPR/First Aid Certified

SOFTWARE PROGRAM CAPABILITIES

HYPACK®
 Trimble® Business Center
 Global Mapper®
 Pix4D

TECHNICAL EXPERIENCE

Captain Giles leads, supervises, and coordinates all CSE field data collection operations (2013–present). Gile served as field survey assistant under the tutelage of Captain Philip McKee (2006–2012).

Giles has experience operating research vessels engaged in bathymetric data collection as data technician and as coxswain (2006–present).

Giles specializes in topographic and bathymetric data collection using RTK-GNSS, specifically using the Applanix™ POS-MV and Trimble® R10 GNSS receiver. Giles has collected thousands of beach profiles for the purpose of erosion and sediment transport monitoring. He also specializes in UAS data collection for aerial mapping (2015–present).

He has been highly involved in dive operations at CSE including deployment, recovery, and operation of in-situ flow meters, tide gauges, wave gauges, and acoustic Doppler current profilers (ADCP).

Giles has also assisted in the collection of hundreds of borings in offshore borrow sites for beach nourishment planning.

EDUCATION

BS. University of South Carolina

BATHYMETRIC & TOPOGRAPHIC DATA COLLECTION EXPERIENCE LOCATIONS

Arcadian Shores, SC
 Bay Point, SC
 Bear Inlet, NC
 Bear Island, NC
 Bogue Banks, NC
 Breach Inlet, SC
 Buxton, NC
 Cape Hatteras National Seashore, NC
 Captain Sams Inlet, SC
 Daufuskie Island, SC
 DeBordieu, SC
 Dewees Island, SC
 Edisto Beach, SC
 Folly Beach, SC
 Fripp Island, SC
 Garden City Beach, SC
 Harbor Island, SC
 Hilton Head Island, SC
 Hunting Island, SC
 Huntington Beach State Park, SC
 Isle of Palms, SC
 Jumby Bay Island, Antigua
 Kiawah Island, SC
 Kiawah River, SC
 Litchfield Beach, SC
 Lockwoods Folly Inlet, NC
 Moriches Inlet, NY
 Myrtle Beach, SC
 Nags Head, NC
 North Myrtle Beach, SC
 Oak Island, NC
 Oregon Inlet, NC
 Pawley's Island, SC
 Port of Moorehead City, NC
 Rodanthe, NC
 Sea Island, GA
 Seabrook, SC
 Shackleford Banks, NC
 Smith Point, NY
 Southampton, NY
 Sullivans Island, SC
 Surfside Beach, SC
 Waties Island, SC

C PATRICK BARRINEAU, PHD PG

COASTAL SCIENTIST

Email: patrick@coastalscience.com

PROFILE

Dr. Barrineau is a coastal scientist and project manager for CSE, performing work in the field, laboratory, and office. He manages projects from New York to Georgia, and regularly curates geophysical and geotechnical data from collection to publication in concert with CSE staff.

While at CSE, Dr. Barrineau has prepared reports and/or permit applications for projects at dozens of sites from New York to Georgia. Prior to joining CSE, Dr. Barrineau studied sedimentary processes and quaternary geology at Texas A&M through field-based research on sediment transport and barrier-lagoon evolution. He has organized and led field studies in South Carolina, Texas, New Mexico, California, and Brazil. In addition to his work at CSE, Dr. Barrineau teaches a graduate-level course in Coastal Zone Management at the University of South Carolina.

EDUCATION

PhD. Geography, Texas A&M University
 MS. Geography, University of South Carolina
 BS. Geography, Auburn University

REGISTRATION

Professional Geologist (SC #2773, NC #2761)

RESEARCH EXPERIENCE

Conceptual and numerical modeling of landscape evolution in coastal and aeolian systems; modeling fluid dynamics and sediment transport; identifying controls on sediment transport patterns; monitoring beach and dune response and recovery following storm impacts; managing geophysical surveys for Quaternary landscape evolution studies. Extensive field research in environments from the Pacific Rim to the Caribbean to the Middle East.

TECHNICAL EXPERIENCE

Extensive experience working in coastal and dryland settings, collecting elevation and geophysical data using RTK-GPS, Total Station, ground-penetrating RADAR, and Electromagnetic Induction Profilers. Collected vibracores and analyzed hundreds of sediment samples for grain size, sorting, and X-ray fluorescence analysis.

SPECIALTIES

- Synthesizing interdisciplinary research into adaptive management strategies
- Collection & analysis of spatial & geophysical data
- Collection & analysis of coastal sediments
- Beach & Dune processes
- Quaternary landscape evolution

SOFTWARE PROGRAM CAPABILITIES

- GIS - ArcGIS, QGIS, Global Mapper
- Remote Sensing - ERDAS Imagine, ENVI
- Coding Languages – MATLAB, Python, R

SELECT PUBLICATIONS

Barrineau, P., Kana, T., 2023. Beach nourishment and sediment management plan for Sagaponack and Bridgehampton at Southampton, New York. *Coastal Sediments*, vol. 10, New Orleans LA.

Elko, N., Briggs, T., Marsooli, R., Barrineau, P., Hapke, C., McKenna, K., Simm, J., Beyeler, M., Smith, M., Troy, C., 2022. U.S. community perspectives on coastal flooding. *Shore and Beach* 90(3), 17-29.

Barrineau, P., Janmaat, R., Kana, T., 2021. Empirical depths of closure along the US East Coast. *Coastal Engineering* 170 DOI 10.1016/j.coastaleng.2021.104009.

Harris, M., Ellis, J., Barrineau, P., 2020. Evaluating the geomorphic response from sand fences on dunes impacted by hurricanes. *Ocean and Coastal Management* 193 DOI 10.1016/j.ocecoaman.2020.105247.

Barrineau, P., Kana, T., 2019. Unpacking Storm Damages on a Developed Shoreline: Relating Dune Erosion and Urban Runoff. *Shore and Beach* 87(3), 35-45.

Houser, C., Barrineau, P., Hammond, B., Saari, B., Rentschler, E., Trimble, S., Wernette, P., Young, S., 2017. Role of the foredune in controlling barrier island response to sea level rise. In: *Barrier Islands*, ed. Moore and Murray.

Barrineau, P., Wernette, P., Weymer, B., Trimble, S., Hammond, B., Houser, C., 2015. Coastal Landscapes in the Critical Zone. In: *Principles and Dynamics of the Critical Zone*, Vol. 19, pp. 495-420.



TREY HAIR

ENGINEERING TECHNICIAN

Email: thair@coastalscience.com

PROFILE

Mr. Hair is an engineering technician with 20 years of experience who supports CSE's professional engineers and geologists in projects pertaining to beach nourishment, groin and jetty design, revetments and seawalls, inlet relocations, as well as waterfront and marina designs. He performs profile analysis from collected and/or existing data, historical shoreline assessments, topographic and bathymetric data compilation, volume calculations, erosion assessments, and sediment transport studies.

As CSE's CAD manager, Mr. Hair utilizes numerous data-based, land-development software programs in the design of coastal engineering projects including beach nourishment, groins, jetties, seawalls, and inlet relocations. He maintains CSE's database of beach monitoring projects in numerous southeastern locations including South Carolina sites (Seabrook Island, Folly Beach, Kiawah Island, Myrtle Beach, Hunting Island, Edisto Island, Isle of Palms) and North Carolina sites (Bogue Banks, Ocean Isle Beach, Nags Head, Kitty Hawk, Buxton, Hatteras Is). He uses ArcMap GIS software to assess shoreline changes, to support FEMA flood studies, to conduct spatial analysis, and to determine changes in the shoreline and littoral zones. Mr. Hair has also served as an expert CAD/survey analyst in support of court cases involving erosion.

TECHNICAL EXPERIENCE

Extensive data collection experience including field investigations of project sites, installation of coastal engineering instrumentation, and collection of samples for testing. Mr. Hair is proficient in survey processes from the initial setup of projects to data reduction and map production utilizing the latest technology and software.

Responsibilities include obtaining state and federal permits, production of all of CSE's construction plans/specifications and processing collected data. He has extensive experience in large projects, including two of the largest locally funded beach nourishment projects ever completed along the U.S. East Coast at Bogue Banks (NC) and Nags Head (NC) involving volume placement of ~10 million cubic yards of nourishment fill.

Mr. Hair has performed underwater assessments of revetments, seawalls, and coastal structures, as well as reconnaissance surveys for a directional-drilling project. He is a master diver with hundreds of dives logged in support of project design; collecting sediment samples and setting coastal analysis instrumentation for the study of tides, waves, and currents (ADP, MD, XR, mini-wave, etc).

EDUCATION

AS. Engineering Technology, Midlands Technical College

PROFESSIONAL CERTIFICATIONS

PADI Open-Water Certified Diver/ TDI Nitrox
Engineering Graphics (MTC)
3-D Design (MTC)
Civil Design (AutoDesk® University)
AutoCAD Civil 3D Certified Professional

MEMBERSHIPS

AUGI AutoDesk® User Group International
AutoDesk® Certified Professionals
American Shore & Beach Preservation Association

SOFTWARE PROGRAM CAPABILITIES

- AutoDesk® Civil 3D/Map/Raster Design
- AutoDesk® Infrastructure Design Suite
- ESRI ArcMapGIS
- Trimble®/HYPACK®
- Global Mapper® (Blue Marble)

MAJOR PROJECTS

Cooper River Bridge Hydrographic Study
Asharoken (NY) Erosion Case
Bogue Banks (NC) Nourishment
Hunting Island (SC) Nourishment
Edisto Beach (SC) Nourishment and Groin Repair
Nags Head Beach (NC) Nourishment
Folly Beach (SC) Groin Design
Al Khiran Monitoring (Kuwait)
Kiawah Island (SC) Beach Restoration
Edisto Island (SC) Nourishment
Isle of Palms (SC) Beach Restoration
Seabrook Is (SC) Capt Sams Inlet Relocation
Sagaponack Beach (NY)
Bridgehampton Beach (NY)
Buxton, Dare County (NC)
Arcadian Shores, Horry County (SC)

APPENDIX B

Equipment Information

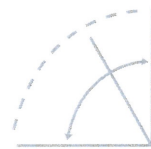
Trimble R12i

GNSS SYSTEM

KEY FEATURES

- ▶ Trimble® Inertial Platform™ (TIP) technology. Calibration-free and magnetically immune IMU-based tilt compensation for topo measurements and stakeout.
- ▶ Trimble ProPoint™ GNSS positioning engine. Engineered for improved accuracy and productivity in challenging GNSS conditions.
- ▶ 672-channel solution with Trimble 360 satellite tracking technology
- ▶ CenterPoint® RTX correction service delivers fast, RTK level accuracy worldwide via satellite/IP
- ▶ Trimble xFill® correction outage technology
- ▶ Optimized for Trimble Access™ field software
- ▶ Android™ and iOS platform support
- ▶ Cellular, Bluetooth®, Wi-Fi data connectivity
- ▶ Military-spec rugged design and IP-67 rating
- ▶ Ergonomic form factor
- ▶ All day battery with built-in status indicator
- ▶ 6 GB internal memory
- ▶ Supports augmented reality capabilities through Trimble SiteVision™

Learn more:
geospatial.trimble.com/R12i



Tilt
Compensation



AR Ready

PERFORMANCE SPECIFICATIONS

GNSS MEASUREMENTS

Constellation agnostic, flexible signal tracking, improved positioning in challenging environments¹ and inertial measurement integration with Trimble ProPoint GNSS technology.

Increased measurement and stakeout productivity and traceability with Trimble TIP™ technology IMU-based tilt compensation

Advanced Trimble Custom Survey GNSS chips with 672 channels

Reduced downtime due to loss of radio signal or cellular connectivity with Trimble xFill technology

Signals tracked simultaneously

GPS: L1C, L1C/A, L2C, L2E, L5
 GLONASS: L1C/A, L1P, L2C/A, L2P, L3
 SBAS (WAAS, EGNOS, GAGAN, MSAS): L1C/A, L5
 Galileo: E1, E5A, E5B, E5 AltBOC, E6²
 BeiDou: B1, B1C, B2, B2A, B2B, B3
 QZSS: L1C/A, L1S, L1C, L2C, L5, L6
 NavIC (IRNSS): L5
 L-band: Trimble RTX™ Corrections

Iridium filtering above 1616 MHz allows antenna to be used up to 20 m away from iridium transmitter

Japanese LTE filtering below 1510 MHz allows antenna to be used up to 100 m away from Japanese LTE cell tower

Digital Signal Processor (DSP) techniques to detect and recover from spoofed GNSS signals

Advanced Receiver Autonomous Integrity Monitoring (RAIM) algorithm to detect and reject problem satellite measurements to improve position quality

Improved protection from erroneous ephemeris data

Positioning Rates 1 Hz, 2 Hz, 5 Hz, 10 Hz, and 20 Hz

POSITIONING PERFORMANCE³

STATIC GNSS SURVEYING

High-Precision Static

Horizontal	3 mm + 0.1 ppm RMS
Vertical	3.5 mm + 0.4 ppm RMS

Static and Fast Static

Horizontal	3 mm + 0.5 ppm RMS
Vertical	5 mm + 0.5 ppm RMS

REAL TIME KINEMATIC SURVEYING

Single Baseline <30 km

Horizontal	8 mm + 1 ppm RMS
Vertical	15 mm + 1 ppm RMS

Network RTK⁴

Horizontal	8 mm + 0.5 ppm RMS
Vertical	15 mm + 0.5 ppm RMS

RTK start-up time for specified precisions⁵

2 to 8 seconds

TRIMBLE INERTIAL PLATFORM (TIP) TECHNOLOGY

TIP Compensated Surveying⁶

Horizontal	RTK + 5 mm + 0.4 mm/° tilt (up to 30°) RMS
Horizontal	RTX + 5 mm + 0.4 mm/° tilt (up to 30°) RMS

IMU Integrity Monitor

Bias monitoring Temperature, age and shock

TRIMBLE RTX CORRECTION SERVICES

CenterPoint RTX⁷

Horizontal	2 cm RMS
Vertical	5 cm RMS
RTX convergence time for specified precisions in Trimble RTX Fast regions	< 1 min
RTX convergence time for specified precisions in non RTX Fast regions	< 15 min
RTX QuickStart convergence time for specified precisions	< 1 min

TRIMBLE xFILL⁸

Horizontal	RTK ⁹ + 10 mm/minute RMS
Vertical	RTK ⁹ + 20 mm/minute RMS

TRIMBLE xFILL PREMIUM⁸

Horizontal	3 cm RMS
Vertical	7 cm RMS

CODE DIFFERENTIAL GNSS POSITIONING

Horizontal	0.25 m + 1 ppm RMS
Vertical	0.50 m + 1 ppm RMS
SBAS ¹⁰	typically <5 m 3DRMS

HARDWARE

PHYSICAL

Dimensions (W×H)	11.9 cm x 13.6 cm (4.6 in x 5.4 in)	
Weight	1.12 kg (2.49 lb) with internal battery, internal radio with UHF antenna, 3.95 kg (8.71 lb) items above plus range pole, Trimble TSC7 controller & bracket	
Temperature ¹¹	Operating	-40 °C to +65 °C (-40 °F to +149 °F)
	Storage	-40 °C to +75 °C (-40 °F to +167 °F)
Humidity	100%, condensing	
Ingress protection	IP67 dustproof, protected from temporary immersion to depth of 1 m (3.28 ft)	
Shock and vibration (Tested and meets the following environmental standards)		
	Shock	Non-operating: Designed to survive a 2 m (6.6 ft) pole drop onto concrete. Operating: to 40 G, 10 msec, sawtooth
	Vibration	MIL-STD-810F, FIG.514.5C-1

ELECTRICAL

	Power 11 to 24 V DC external power input with over-voltage protection on Port 1 and Port 2 (7-pin Lemo) Rechargeable, removable 7.4 V, 3.7 Ah Lithium-ion smart battery with LED status indicators Power consumption is 4.2 W in RTK rover mode with internal radio ¹²	
Operating times on internal battery ¹³		
	450 MHz receive only option	6.5 hours
	450 MHz receive/transmit option (0.5 W)	6.0 hours
	450 MHz receive/transmit option (2.0 W)	5.5 hours
	Cellular receive option	6.5 hours

COMMUNICATIONS AND DATA STORAGE

Serial	3-wire serial (7-pin Lemo)	
USB v2.0	Supports data download and high speed communications	
Radio modem	Fully Integrated, sealed 450 MHz wide band receiver/transmitter with frequency range of 403 MHz to 473 MHz, support of Trimble, Pacific Crest, and SATEL radio protocols:	
	Transmit power	2 W
	Range	3–5 km typical / 10 km optimal ¹⁴
Cellular ¹⁵	Integrated, 3.5 G modem, HSDPA 7.2 Mbps (download), GPRS multi-slot class 12, EDGE multi-slot class 12, Penta-band UMTS/HSDPA (WCDMA/FDD) 800/850/900/1900/2100 MHz, Quad-band EGSM 850/900/1800/1900 MHz, GSM CSD, 3GPP LTE	
Bluetooth	Version 4.1 ¹⁶	
Wi-Fi	802.11 b,g, access point and client mode, WPA/WPA2/WEP64/WEP128 encryption	
I/O ports	Serial, USB, TCP/IP, IBSS/NTRIP, Bluetooth	
Data storage	6 GB internal memory	
Data format	CMR+, CMRx, RTCM 2.1, RTCM 2.3, RTCM 3.0, RTCM 3.1, RTCM 3.2 input and output 24 NMEA outputs, GSOF, RT17 and RT27 outputs, 1 PPS output	

WEBUI

	Offers simple configuration, operation, status, and data transfer Accessible via Wi-Fi, Serial, USB, and Bluetooth
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SUPPORTED CONTROLLERS & FIELD SOFTWARE

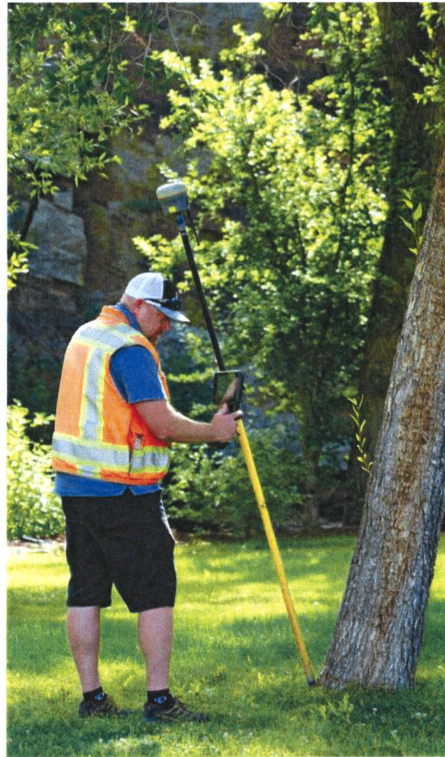
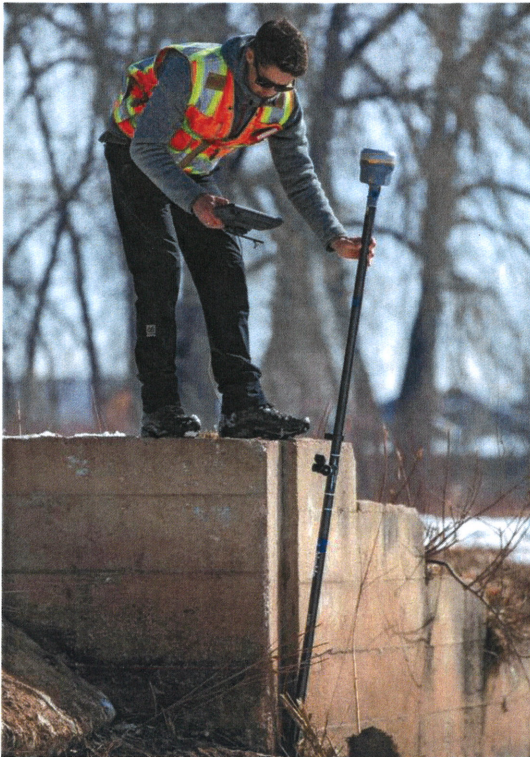
	Trimble TSC7, Trimble T10, Trimble T7, Android and iOS devices running supported apps Trimble Access 2020.10 or later
--	--

AUGMENTED REALITY

	Supports outdoor augmented reality capabilities through Trimble SiteVision running on the Trimble TSC7 controller
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CERTIFICATIONS

	FCC Part 15 (Class B device), 24, 32; CE Mark; RCM; PTCRB; BT SIG
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- 1 Challenging GNSS environments are locations where the receiver has sufficient satellite availability to achieve minimum accuracy requirements, but where the signal may be partly obstructed by and/or reflected off of trees, buildings, and other objects. Actual results may vary based on user's geographic location and atmospheric activity, scintillation levels, GNSS constellation health and availability, and level of multipath and signal occlusion.
- 2 The current capability in the receivers is based on publicly available information. As such, Trimble cannot guarantee that these receivers will be fully compatible with a future generation of Galileo satellites or signals.
- 3 Precision and reliability may be subject to anomalies due to multipath, obstructions, satellite geometry, and atmospheric conditions. The specifications stated recommend the use of stable mounts in an open sky view, EMI and multipath clean environment, optimal GNSS constellation configurations, along with the use of survey practices that are generally accepted for performing the highest-order surveys for the applicable application including occupation times appropriate for baseline length. Baselines longer than 30 km require precise ephemeris and occupations up to 24 hours may be required to achieve the high precision static specification.
- 4 Network RTK PPM values are referenced to the closest physical base station.
- 5 May be affected by atmospheric conditions, signal multipath, obstructions and satellite geometry. Initialization reliability is continuously monitored to ensure highest quality.
- 6 TIP references the overall positioning error estimate at the tip of the surveying pole throughout the tilt compensation range. RTK refers to the estimated horizontal precision of the underlying GNSS position, which is dependent on factors that affect GNSS solution quality. The 5 mm constant error component accounts for residual misalignment between the vertical axes of the receiver and the built-in Inertial Measurement Unit (IMU) after factory calibration, assuming the receiver is mounted on a standard 2 m carbon fiber range pole which is properly calibrated and free from physical defects. The tilt-dependent error component is a function of the quality of the computed tilt azimuth, which is assumed here to be aligned using optimal GNSS conditions.
- 7 RMS performance based on repeatable in field measurements. Achievable accuracy and initialization time may vary based on type and capability of receiver and antenna, user's geographic location and atmospheric activity, scintillation levels, GNSS constellation health and availability and level of multipath including obstructions such as large trees and buildings.
- 8 Accuracies are dependent on GNSS satellite availability. xFill positioning without an xFill Premium subscription ends after 5 minutes of radio downtime. xFill Premium will continue beyond 5 minutes providing the solution has converged, with typical precisions not exceeding 3 cm horizontal, 7 cm vertical. xFill is not available in all regions, check with your local sales representative for more information.
- 9 RTK refers to the last reported precision before the correction source was lost and xFill started.
- 10 Depends on SBAS system performance.
- 11 Receiver will operate normally to -40 °C, internal batteries are rated from -20 °C to +60 °C (ambient +50 °C).
- 12 Tracking GPS, GLONASS and SBAS satellites.
- 13 Varies with temperature and wireless data rate. When using a receiver and internal radio in the transmit mode, it is recommended that an external 6 Ah or higher battery is used.
- 14 Varies with terrain and operating conditions.
- 15 Due to local regulations, the integrated cellular modem cannot be enabled in China, Taiwan, or Brazil. A Trimble controller integrated cellular modem or external cellular modem can be used to obtain GNSS corrections via an IP (Internet Protocol) connection.
- 16 Bluetooth type approvals are country specific.

Specifications subject to change without notice.



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Trimble R10

GNSS SYSTEM

A NEW LEVEL OF PRODUCTIVITY

Collect more accurate data faster and easier – no matter what the job or the environment, with the Trimble® R10 GNSS System. Built with powerful technologies like Trimble HD-GNSS, Trimble SurePoint™, Trimble CenterPoint® RTX, and Trimble xFill®, integrated into a sleek design, this unique system provides Surveyors with a powerful way to increase productivity in every job, every day.

The next generation of core positioning technology

The advanced Trimble HD-GNSS processing engine provides markedly reduced convergence times as well as high position and precision reliability while reducing measurement occupation time. Transcending traditional fixed/float techniques, it provides a more accurate assessment of error estimates than traditional GNSS technology.

Faster measurements, increased accuracy, and greater quality control

With this system, surveyors don't have to switch focus from the controller screen to the pole bubble to check that the pole is plumb. The Trimble controller displays an electronic bubble.

The system constantly monitors pole tilt and compensates while the point is automatically or manually measured. If a point is measured with pole tilt beyond a user-defined setting, Trimble Access™ software will give an alert and prompt the surveyor to accept or discard the point. Trimble SurePoint even uses the pole tilt as a controlling input. After a point is measured, tilting the pole causes the system to automatically prepare to measure the next point.

As insurance that all of your data is traceable, the Trimble R10 can record the pole tilt information for measured points. These records include tilt and compass data for 100% data traceability.

Future Proof Your Investment

Powerful Trimble 360 receiver technology in the Trimble R10 supports signals from all existing and planned GNSS constellations and augmentation systems. With two integrated Trimble Maxwell™ 6 chips, the Trimble R10 offers an unparalleled 440 GNSS channels. Trimble delivers business confidence with a sound GNSS investment for today and long into the future.

RTK Level Precision Anywhere

Trimble CenterPoint RTX delivers RTK level precision anywhere in the world without the use of a local base station or Trimble VRS™ Network.

Survey using satellite delivered, CenterPoint RTX corrections in areas where terrestrial based corrections are not available. When surveying over a great distance in a remote area, such as a pipeline or utility right of way, CenterPoint RTX eliminates the need to continuously move base stations or maintain connection to a cellular network.

More continuous surveying, less downtime

Leveraging a worldwide network of Trimble GNSS reference stations and satellite datalinks, Trimble xFill seamlessly fills in for gaps in your RTK or VRS connection stream. Extend xFill indefinitely with a subscription to CenterPoint RTX.

Ergonomically Designed

As the smallest and lightest integrated receiver in its class, the Trimble R10 is ergonomically designed to provide the surveyor with effortless handling and operation. Designed for ease of use, the progressive design incorporates a more stable center of mass at the top of the range pole, while its sleeker, taller profile provides the durability and reliability for which Trimble is known.

The Trimble R10 receiver incorporates a quick release adaptor for simple and safe removal of the receiver from the range pole. Additionally the quick release adaptor ensures a solid, stable connection between the range pole and receiver.

An Intelligent Solution

A smart lithium-ion battery inside the Trimble R10 system delivers extended battery life and more reliable power. A built-in LED battery status indicator allows the user to quickly check remaining battery life.

The Trimble R10 system provides a number of communications options to support any workflow. The latest mobile phone technology is built in to receive VRS corrections and connect to the Internet from the field. Access Trimble Connected Community to send or receive documents while away from the office. Using WiFi, easily connect to the Trimble R10 system using a laptop or smartphone to configure the receiver without a Trimble controller.

The Complete Solution: Trimble hardware and software

Bring the power and speed of the Trimble R10 system together with trusted Trimble software solutions, including Trimble Access and Trimble Business Center™.

Trimble Access field software provides specialized and customized workflows to make surveying tasks quicker and easier while enabling teams to communicate vital information between field and

office in real time. Back in the office, users can seamlessly process data with Trimble Business Center software.

The R10 GNSS system, a new era of surveying productivity beyond GNSS for professional surveyors.

Key Features

- ▶ Cutting-edge Trimble HD-GNSS processing engine
- ▶ Precise position capture with Trimble SurePoint technology
- ▶ Trimble CenterPoint RTX provides RTK level precision anywhere without the need for a base station or VRS network
- ▶ Trimble xFill technology provides RTK coverage during connection outages
- ▶ Advanced satellite tracking with Trimble 360 receiver technology
- ▶ Sleek ergonomic design for easier handling



Trimble R10 GNSS SYSTEM

PERFORMANCE SPECIFICATIONS

Measurements

- Measuring points sooner and faster with Trimble HD-GNSS technology
- Increased measurement productivity and traceability with Trimble SurePoint electronic tilt compensation
- Worldwide centimeter level positioning using Trimble CenterPoint RTX satellite delivered corrections
- Reduced downtime due to loss of radio signal with Trimble xFill technology
- Advanced Trimble Maxwell 6 Custom Survey GNSS chips with 440 channels
- Future-proof your investment with Trimble 360 GNSS tracking
- Satellite signals tracked simultaneously:
 - GPS: L1C/A, L1C, L2C, L2E, L5
 - GLONASS: L1C/A, L1P, L2C/A, L2P, L3
 - SBAS: L1C/A, L5 (For SBAS satellites that support L5)
 - Galileo: E1, E5a, E5B
 - BeiDou (COMPASS): B1, B2
- CenterPoint RTX, OmniSTAR HP, XP, G2, VBS positioning
- QZSS, WAAS, EGNOS, GAGAN
- Positioning Rates: 1 Hz, 2 Hz, 5 Hz, 10 Hz, and 20 Hz

POSITIONING PERFORMANCE¹

Horizontal	Code differential GNSS positioning	0.25 m + 1 ppm RMS
Vertical		0.50 m + 1 ppm RMS
SBAS differential positioning accuracy ²		typically <5 m 3DRMS

Static GNSS surveying

High-Precision Static		
Horizontal		3 mm + 0.1 ppm RMS
Vertical		3.5 mm + 0.4 ppm RMS

Static and Fast Static

Horizontal		3 mm + 0.5 ppm RMS
Vertical		5 mm + 0.5 ppm RMS

Real Time Kinematic surveying

Single Baseline <30 km		
Horizontal		8 mm + 1 ppm RMS
Vertical		15 mm + 1 ppm RMS

Network RTK³

Horizontal		8 mm + 0.5 ppm RMS
Vertical		15 mm + 0.5 ppm RMS

RTK start-up time for specified precisions⁴..... 2 to 8 seconds

Trimble CenterPoint RTX

Horizontal		4 cm
Vertical		9 cm

RTX convergence time for specified precisions¹²..... 30 minutes or less

Trimble xFill⁵

Horizontal	RTK ⁶ + 10 mm/minute RMS
Vertical	RTK ⁶ + 20 mm/minute RMS

1 Precision and reliability may be subject to anomalies due to multipath, obstructions, satellite geometry, and atmospheric conditions. The specifications stated recommend the use of stable mounts in an open sky view, EMI and multipath clean environment, optimal GNSS constellation configurations, along with the use of survey practices that are generally accepted for performing the highest-order surveys for the applicable application including occupation times appropriate for baseline length. Baselines longer than 30 km require precise ephemeris and occupations up to 24 hours may be required to achieve the high precision static specification.

2 Depends on WAAS/EGNOS system performance.

3 Network RTK PPM values are referenced to the closest physical base station.

4 May be affected by atmospheric conditions, signal multipath, obstructions and satellite geometry. Initialization reliability is continuously monitored to ensure highest quality.

5 Precisions are dependent on GNSS satellite availability. xFill positioning without a RTX subscription ends after 5 minutes of radio downtime. xFill positioning with a RTX subscription will continue beyond 5 minutes providing RTX has converged, with typical precisions not exceeding 6 cm horizontal, 14 cm vertical. xFill is not available in all regions, check with your local sales representative for more information.

6 RTK refers to the last reported precision before the correction source was lost and xFill started.

7 Receiver will operate normally to -40° C, internal batteries are rated to -20° C.

8 Tracking GPS, GLONASS and SBAS satellites.

9 Varies with temperature and wireless data rate. When using a receiver and internal radio in the transmit mode, it is recommended that an external 6 Ah or higher battery is used.

10 Varies with terrain and operating conditions.

11 Bluetooth type approvals are country specific.

12 Receiver convergence time varies based on GNSS constellation health, level of multipath, and proximity to obstructions such as large trees and buildings. Convergences times decrease significantly when using a "RTX Quickstart" on a previously surveyed point or a known survey control point.

HARDWARE

Physical

Dimensions (W×H)	11.9 cm x 13.6 cm (4.6 in x 5.4 in)
Weight	1.12 kg (2.49 lb) with internal battery, internal radio with UHF antenna, 3.57 kg (7.86 lb) items above plus range pole, controller & bracket

Temperature⁷

Operating	-40° C to +65° C (-40° F to +149° F)
Storage	-40° C to +75° C (-40° F to +167° F)

Humidity 100%, condensing

Ingress Protection IP67 dustproof, protected from temporary immersion to depth of 1 m (3.28 ft)

Shock and vibration..... Tested and meets the following environmental standards:

Shock..... Non-operating: Designed to survive a 2 m (6.6 ft) pole drop onto concrete. Operating: to 40 G, 10 msec, sawtooth

Vibration MIL-STD-810F, FIG.514.5C-1

Electrical

- Power 11 to 24 V DC external power input with over-voltage protection on Port 1 and Port 2 (7-pin Lemo)
- Rechargeable, removable 7.4 V, 3.7 Ah Lithium-ion smart battery with LED status indicators
- Power consumption is 5.1 W in RTK rover mode with internal radio⁸
- Operating times on internal battery⁹:
 - 450 MHz and 900 MHz receive only option 5.5 hours
 - 450 MHz and 900 MHz receive/transmit option (0.5 W) 4.5 hours
 - 450 MHz receive/transmit option (2.0 W) 3.7 hours
 - Cellular receive option 5.0 hours

COMMUNICATIONS AND DATA STORAGE

- Serial: 3-wire serial (7-pin Lemo)
- USB v2.0: supports data download and high speed communications
- Radio Modem: fully integrated, sealed 450 MHz wide band receiver/transmitter with frequency range of 403 MHz to 473 MHz, support of Trimble, Pacific Crest, and SATEL radio protocols:
 - Transmit power: 2 W
 - Range: 3–5 km typical / 10 km optimal¹⁰
- Cellular: integrated, 3.5 G modem, HSDPA 7.2 Mbps (download), GPRS multi-slot class 12, EDGE multi-slot class 12, UMTS/HSDPA (WCDMA/FDD) 850/1900/2100MHz, Quad-band EGSM 850/900/1800/1900 MHz, GSM CSD, 3GPP LTE
- Bluetooth: fully integrated, fully sealed 2.4 GHz communications port (Bluetooth[®])¹¹
- WiFi: 802.11 b.g, access point and client mode, WPA/WPA2/WEP64/WEP128 encryption
- External communication devices for corrections supported on – Serial, USB, Ethernet, and Bluetooth ports
- Data storage: 4 GB internal memory; over three years of raw observables (approx. 1.4 MB /day), based on recording every 15 seconds from an average of 14 satellites
- CMR+, CMRx, RTCM 2.1, RTCM 2.3, RTCM 3.0, RTCM 3.1, RTCM 3.2 input and output
- 24 NMEA outputs, GSOF, RT17 and RT27 outputs

WebUI

- Offers simple configuration, operation, status, and data transfer
- Accessible via WiFi, Serial, USB, and Bluetooth

Supported Trimble Controllers

- Trimble TSC3, Trimble Slate, Trimble CU, Trimble Tablet Rugged PC

CERTIFICATIONS

IEC 60950-1 (Electrical Safety); FCC OET Bulletin 65 (RF Exposure Safety); FCC Part 15.105 (Class B), Part 15.247, Part 90; PTCRB (AT&T); Bluetooth SIG; WFA IC ES-003 (Class B); Radio Equipment Directive 2014/53/EU, RoHS, WEEE; Australia & New Zealand RCM; Japan Radio and Telecom MIC



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Singapore 449269
SINGAPORE





1-inch CMOS Sensor



MasterShots



5.4K Video

12km FHD
Transmission^{[1][2]}Obstacle Sensing in 4
DirectionsADS-B
AIR SENSE

Key Features

- 20MP, 1"-type CMOS sensor
- 22mm (equiv.) lens with 88° FOV and fixed F2.8 aperture
- 5.4K/30p, 4K/60p, and 1080p/120p video
- H.264 and H.265 recording at 150 Mbps
- 10-bit D-Log and HDR video capture
- Raw and JPEG image capture
- OcuSync 3.0 (O3) image transmission (12 km range)
- Four-way obstacle avoidance
- APAS 4.0
- 'MasterShots' cinematic capture mode
- 31-minute flight time
- 595g (1.3 pounds) total weight

Equipped with a 1-inch image sensor and large 2.4µm pixels, DJI Air 2S is capable of 5.4K/30fps and 4K/60fps video. Capture any moment with the rich clarity and authentic color tones it deserves.



Safer Skies with ADS-B

DJI Air 2S provides an added layer of airspace safety with the industry-leading AirSense safety system. This receives Automatic Dependent Surveillance-Broadcast (ADS-B) flight location information from airplanes and helicopters in your area that transmit ADS-B signals, displays those aircraft on a map, and provides audio and visual alerts through the DJI Fly app to help you keep the drone out of the way of those aircraft.

Teledyne Odom Hydrographic

Echotrac CV100

Single or Dual Channel
Echo Sounder

Compact Survey Solution

Move into the digital age with echo sounders from Teledyne Odom Hydrographic. If your survey does not require traditional paper records, then forget about piles of hard copy – the CV-100 has eliminated all that in favor of digital imaging on a PC-based data acquisition system.

With the same technology as the popular Echotrac CV and Echotrac MKIII, including Ethernet communications, Teledyne Odom's CV100 single or dual channel sounder is ready to simplify your transition to the convenience of an all-digital system.



Photo courtesy of David Evans and Associates, Inc.

PRODUCT FEATURES

- Multiple time varied gain (TVG) curves (10, 20, 30, and 40 log)
- DSP digitizer with manual filter control
- Manual or auto scale changes (phasing)
- Calibration menu with controls for transducer draft and index plus sound velocity and bar depth controls
- Rugged and waterproof (IP67)
- Help menus
- Flash memory upgradeable
- Auto Gain and Auto Power Modes for minimal operator input
- Suitable for autonomous vessels



Echotrac CV100

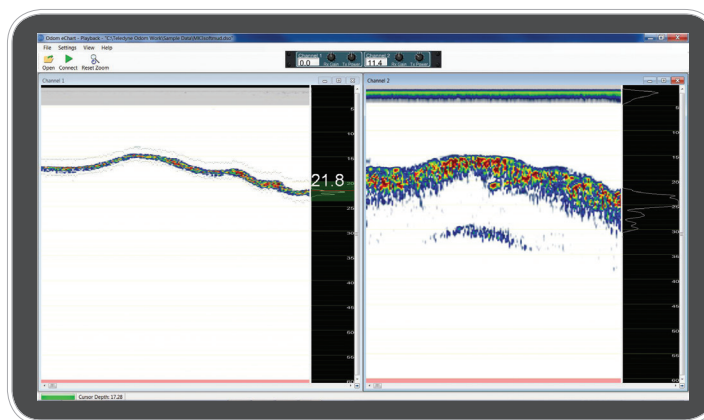
Digital Hydrographic Echo Sounder



TECHNICAL SPECIFICATIONS

Single Channel Configuration¹	High: 100kHz-750kHz (manual tuning in 1-kHz steps) Low: 3.5kHz-50kHz (manual tuning in 1-kHz steps) variable receiver bandwidth
Dual Channel Configuration	High: 100 kHz-340kHz Low: 24 kHz-50kHz
Resolution	0.01m, 0.1 ft.
Accuracy (corrected for sound velocity)	200kHz-0.01 m +/- 0.1% depth 33kHz-0.10 m +/- 0.1% depth
Output Power	Up to 300 watts RMS < 1 watt minimum
Ping Rate	Up to 20Hz in shallow water (10m) range
Depth Range	From <30cm to 600m (depending on frequency and transducer selected)
Input Power Requirement	9-32VDC < 15 watts
Weight	5kg (11lbs)
Dimensions	28cm W (11 in) x 23cm H (9 in) x 11.5cm (4.5 in) D
Mounting	Desktop or bulkhead mount (fixing hardware included)
Ports/Interface	Ethernet (LAN) plus 4 x RS232 or 3 x 232 and 1 x RS422 Inputs from external computer, motion sensor, sound velocity Outputs to external computer or remote display Output string: Odom Echotrac SBT, NMEA DBS, NMEA DBT, DESO 25 Heave Input-TSS1 or "Sounder Sentence" Echotrac Control SW - Simple Windows compatible graphical user interface Storage of full ping to seabed data in DSO format with e-Chart (easily compressed or converted to .XTF for additional processing)
Environmental	Operating 0-50°C Storage -20°-70°C
Options	Heave Sensor
Software Control & Logging Software	Windows based software included: eChart Display

1 Frequency agile in 2 bands (specify band at time of order).



eChart Software.

POS MV

MAXIMIZE YOUR ROI WITH POS MV SURFMASTER

POS MV SurfMaster is a user-friendly, turnkey system designed and built to provide accurate attitude, heading, heave, position, and velocity data of your marine vessel and onboard sensors.

POS MV is proven in all conditions, and is the georeferencing and motion compensation solution of choice for the hydrographic professional.

MV blends GNSS data with angular rate and acceleration data from an IMU and heading from the GPS Azimuth Measurement System (GAMS) to produce a robust and accurate full six degrees-of-freedom position and orientation solution.

Key Features

- ▶ Up to 0.03° roll and pitch performance
- ▶ IN-Fusion 2.0 ensures optimal GNSS aiding for any given conditions
- ▶ TrueHeave - no requirement to tune filter for specific conditions, no settling time so no run in time
- ▶ High accuracy inertial measurement units featuring SmartCal
- ▶ Data time tagged to microsecond accuracy



POS MV SURFMASTER

PERFORMANCE SUMMARY POS MV SURFMASTER ACCURACY

	DGPS	Fugro MarineStar®	IARTK	POSPac MMS PPP	POSPac MMS IAPPK	Accuracy During GNSS Outage
Position	0.5 - 2 m ¹	Horizontal: 10 cm 95% Vertical: 15 cm 95%	Horizontal: +/- (8 mm + 1 ppm x baseline length) ² Vertical: +/- (15 mm + 1 ppm x baseline length) ²	Horizontal: < 0.1 m Vertical: < 0.2 m	Horizontal: +/- (8 mm + 1 ppm x baseline length) ² Vertical: +/- (15 mm + 1 ppm x baseline length) ²	~ 6 m for 30 s total outages (RTK) ~ 3 m for 60 s total outages (IAPPK)
Roll & Pitch ³	0.04°	0.03°	0.03°	< 0.03°	0.025°	0.05°
Heading ³	0.06° with 4 m baseline 0.08° with 2 m baseline	-	-	-	-	0.2° (IAPPK, 60 second outage) 0.3° (RTK, 60 second outage)
Heave TrueHeave™	5 cm or 5% ⁴ 2 cm or 2% ⁵	-	-	-	-	5 cm or 5% ⁴ 2 cm or 2% ⁵

PCS OPTIONS

COMPONENT	DIMENSIONS	WEIGHT	TEMPERATURE	HUMIDITY	POWER
Rack Mount PCS	L = 442 mm, W = 356 mm, H = 46 mm	3.9 kg	-20 °C to +70 °C	10 - 80% RH	AC 120/230 V, 50/60 Hz, auto-switching 40 W
Small Form Factor PCS	L = 167 mm, W = 185 mm, H = 68 mm	2.5 kg	-20 °C to +60 °C	0- 100% RH	DC 10-34 V, 35 W (peak)

INERTIAL MEASUREMENT UNIT (IMU)

ENCLOSURE	DIMENSIONS	WEIGHT	TEMPERATURE	IP RATING
Between Decks	L = 158 mm, W = 158 mm, H = 124 mm	1.66 kg	-40 °C to +60 °C	IP65
Submersible	Ø100 mm (base plate Ø132 mm) X 61 mm ⁶	2.4 kg	-40 °C to +60 °C	IP68

GLOBAL NAVIGATION SATELLITE SYSTEM (GNSS)

COMPONENT	DIMENSIONS	WEIGHT	TEMPERATURE	HUMIDITY
GNSS antenna	Ø178 mm, W = 73 mm	0.45 kg	-50 °C to +70 °C	0- 100% RH

ETHERNET INPUT/OUTPUT

Ethernet (10/100 base-T)
Parameters..... Time tag, status, position, attitude, velocity, track and speed, dynamics, performance metrics, raw IMU data
raw GNSS data
Display Port Low rate (1 Hz) UDP protocol output
Control Port TCP/IP input for system commands
Primary Port Real-time (up to 200 Hz) TCP/IP protocol output
Secondary Port Buffered TCP/IP protocol output for data logging to external device

SERIAL RS232 INPUT OUTPUT

5 COM Ports..... User assignable to: NMEA output (0-5), Binary output (0-5), Auxiliary GNSS input (0-2), Base GNSS correction input (0-2)

NMEA ASCII OUTPUT

Parameters..... NMEA Standard ASCII messages: Position (\$GPGGA), Heading (\$INHDT), Track and Speed (\$INVTG), Statistics (\$INGST) Attitude (\$PASHR, \$PRDID), Time and Date (\$NZDA, \$UTC)
Rate Up to 50 Hz (user selectable)
Configuration..... Output selections and rate individually configurable on each assigned com port

HIGH RATE ATTITUDE OUTPUT

Parameter..... User selectable binary messages: attitude, heading, speed
Rate Up to 200 Hz (user selectable)
Configuration..... Output selections and rate individually configurable on each assigned com port

AUXILIARY GNSS INPUTS

Parameter..... NMEA Standard ASCII messages: \$GPGGA, \$GPGST, \$GPGSA, \$GPGSV
Uses Aux input with best quality
Rate 1 Hz

BASE GNSS CORRECTION INPUTS

Parameter..... RTCM V2.x, RTCM V3.x, CMR and CMR+, CMRx input formats accepted. Combined with raw GNSS observables in navigation solution
Rate 1 Hz

DIGITAL I/O

1PPS..... 1 pulse-per-second Time Sync output, normally high, active low pulse
Event Input (2) Time mark of external events. TTL pulses > 1 msec width, rising or falling edge, max rate 200 Hz

USER SUPPLIED EQUIPMENT

- PC for POSView Software (Required for configuration): Pentium 90 processor (minimum), 256 MB RAM, 2 GB free disk space, Ethernet adapter (10/100 Base-T Ethernet; IEEE 802.3 standard), Windows 7 SP1, Windows 7 Embedded, Windows 8, and Windows 10
- PC for POSPac MMS Post-processing Software: Intel Pentium series 1Ghz or or faster 64-bit processor (minimum), 2GB RAM, 2.6 GB free disk space, USB Port (For Security Key), Windows 7 SP1, Windows 8.1, Windows 10

¹ Depending on quality of differential corrections

² Assumes 1 m IMU-GNSS antenna offset

³ No range limit

⁴ Whichever is greater, for periods of 14 seconds or less

⁵ Whichever is greater, for periods of 35 seconds or less

⁶ Height excludes connector

APPLANIX

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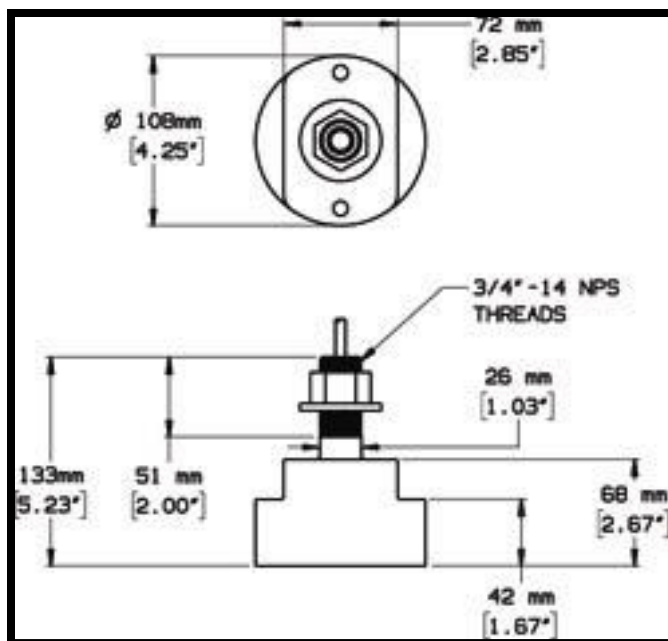
Specifications subject to change without notice.



odomhydrographic.com

Odom Hydrographic Systems, Inc.
1450 Seaboard Avenue
Baton Rouge, LA. 70810 -6261
225.769.3051, Facsimile 225.766.5122

SMSW200-4a



Performance Data

Frequency	200kHz
Beam Width	4°
Q (transmit)	
Rated RMS Power	
Balanced Impedance	60 ohms
Peak Figure of Merit	
Bandwidth	
Acoustic Window Material	Urethane
Threads	3/4" -14NPS
Cable Type	C37 (2-20 AWG)
Cable Size	6mm
Weight	1.3Kg.

The compact stainless steel housing is easily adapted to portable or hull mounted applications. This unit is primarily used for shallow and mid-depth survey applications where delineation of steep slopes and sounding in very shallow water are important features. It contains a transformer that matches the impedance of the transducer to that of the echo sounder and allows for the use of longer cables without affecting performance.

SMSW200-4a_information_sheet

Stem Mount, Shallow Water BB 200kHz-4d,SS538,C37,10m,SS,5p

CastAway[®] CTD

The CastAway[®]-CTD with profiling and analysis software

The CastAway-CTD is a lightweight, easy to use instrument designed for quick and accurate conductivity, temperature, and depth profiles. Starting with a unique six-electrode conductivity cell and fast response thermistor the CastAway makes use of modern technology to provide state of the art CTD measurements.

The palm-sized CastAway-CTD can easily be deployed from small boats. Each cast is referenced with both time and location using its built-in GPS receiver. Plots of conductivity, temperature, salinity and sound speed versus depth can be viewed immediately on the CastAway's integrated color LCD screen in the field.

The rugged, non-corrosive housing, AA battery power and tool-free operation reflect the technician-friendly pedigree of the CastAway-CTD. Profile data is easily downloaded via Bluetooth to a Windows computer for detailed analysis and/or export. The CastAway software displays profiles of the casts in addition to mapping the locations of the data collection points. Data can also be exported to Hypack or Matlab and integrates with RiverSurveyor software for applying sound speed corrections.



The CastAway incorporates the most modern technology available yet is simple to use. It is designed for profiling down to 100 m and is easy to deploy.



*The CastAway-CTD
Accurate, reliable data in
the palm of your hand!*

APPLICATIONS:

- Coastal Oceanography
- Hydrology
- Aquaculture/Fisheries
- Saltwater Intrusion
- Surveying/Hydrography
- Sound Velocity Profiles
- Field Sensor Verification
- Estuarine Research



HIGHLIGHTS:

- 5Hz response and sampling rate
- Accurate to 0.1 PSU, 0.05°C
- Internal GPS
- Bluetooth wireless data download
- No user calibration required
- No tools, computers or cables required



*The CastAway-CTD
is fully compatible with the
RiverSurveyor S5/M9*



Specifications

To order, or for more information, contact SonTek at inquiry@sontek.com

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sontek.com/castaway

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ISO 9001
ISO 14001

San Diego, California, USA

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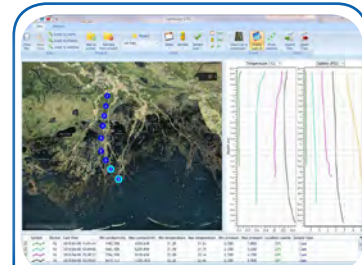
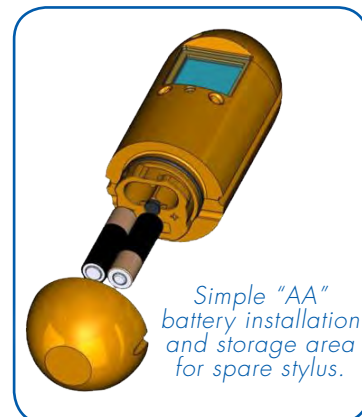
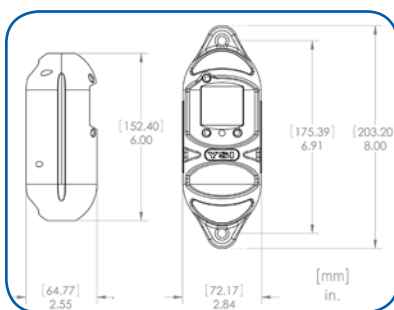
Sound Principles.
Good Advice.

- Memory** 15 MB (750+ casts based on typical usage)
- Communications** Bluetooth class II, up to 10 m range
- Power** 2 "AA" alkaline batteries, 40 hours continuous use
- Data Output Format** - ASCII (CSV)
- Hypack
- Matlab
- Environmental** - Depth range: 0-100 m
- Use temperature: -5° to 45° C
- Storage temperature: -10° to 50° C
- Sampling Modes** - Casting (up/down)
- Point sample (moving the unit back and forth)
- Software** - Windows XP/Vista/7
- Geo-referenced
- Multi-language
- Data plots, filtering, import/export
- Accessories** - Rugged plastic storage/shipping case
- Polyurethane jacket
- 15m deployment line
- Bluetooth dongle
- Two locking carabiners
- Three magnetic stylus pens
- Cleaning brush

Thermistor Response Less than 200 ms (5 Hz)

Sampling Rate 5 Hz

Weight In air: 1.0 lb (0.45 kg)
In water: 0.06 lbs (0.03 kg)



A screen capture of data from a river delta in Louisiana acquired using a CastAway-CTD. 21 casts were collected in less than 3.5 hours.



The CastAway-CTD Output Parameters

	Range	Resolution	Accuracy	Measured or Derived
Conductivity	0 to 100,000 $\mu\text{S/cm}$	1 $\mu\text{S/cm}$	$\pm 0.25\% \pm 5 \mu\text{S/cm}$	Measured
Temperature	-5° - 45° C	0.01° C	$\pm 0.05^\circ \text{C}$	Measured
Pressure	0 to 100 dBar	0.01 dBar	$\pm 0.25\% \text{FS}$	Measured
Salinity	Up to 42 (PSS-78)	0.01 (PSS-78)	± 0.1 (PSS-78)	PSS-78 ³
Sound Speed	1400 - 1730 m/s	0.01 m/s	± 0.15 m/s	Chen-Millero ⁴
Density ¹	990 to 1035 kg/m^3	0.004 kg/m^3	± 0.02 kg/m^3	EOS80 ⁵
Depth	0 to 100 m	0.01m	$\pm 0.25\% \text{FS}$	EOS80 ⁵
Specific Conductivity ²	0 to 250,000 $\mu\text{S/cm}$	1 $\mu\text{S/cm}$	$\pm 0.25\% \pm 5 \mu\text{S/cm}$	EOS80 ⁵
GPS			10 m	

¹Based on temperature resolution and accuracy.

²Based on 100,000 $\mu\text{S/cm}$ at -5° C.

³1978 Practical Salinity Scale.

⁴Chen-Millero, 1977. Speed-of-sound in sea water at high pressures.

⁵International Equation of State for sea water (EOS-80).



ANSI/OPEI Certification

Polaris Industries Inc. certifies that these vehicles complies with the American National Standard for Multipurpose off-Highway Utility Vehicles, ANSI/OPEI B71.9 – 2016 Standard

Key Specifications

Gas

Fuel Type

1,000

lbs Payload

200-Hr

Maintenance Interval

Engine & Drivetrain

Air Intake	Side Air Intake
Cooling	Liquid
Cylinders Displacement	570 cc
Drive System Type	On-Demand 4x4
Engine Type	ProStar 570 cc Gas
Fuel System/Battery	Electronic Fuel Injection
Horsepower	39.5 HP
Maintenance Interval	200 Hours (25 Hour initial break-in)
Top Speed	Adjustable up to 40 mph (64 km/h)
Transmission/Final Drive	Automatic PVT H/L/N/R/P; Shaft

Dimensions

Bed Box Dimensions (L x W x H)	33.3" x 48.7" x 12.3" (84.6 x 123.7 x 31.2 cm)
Box Capacity	500 lb (226 kg)
Estimated Dry Weight	1,234 lb (560 kg)
Fuel Capacity	9.5 gal (36 L)
Ground Clearance	11 in (27.9 cm)
GVWR	2,255 lb (1023 kg)
Hitch Towing Rating	1,500 lb (680 kg)
Overall Vehicle Size (L x W x H)	108 x 56 x 74 in. (274.3 x 142.2 x 188 cm)
Payload Capacity	946 lb (429 kg)
Person Capacity	2
Turning Radius	148 in (375 cm)
Wheelbase	73 in (185.4 cm)

Brakes

Front/Rear Brakes	4-Wheel Hydraulic Disc
Parking Brake	Park In-Transmission

Additional Specifications

Adjustable Driver Seat	Not Equipped
Cargo System	Lock & Ride®
Hitch Type	Standard 2 in (5 cm) Receiver
Instrumentation	All Digital Gauge, Speedometer, Odometer, Tachometer, 2 Tripmeters, Hour Meter, Gear Indicator, Diff Lock Indicator, Clock, Clutch Belt Slip Warning, Low Oil Pressure Indicator, Seat Belt Indicator
Lighting	55W Headlight, LED Taillamps
Other Standard Features	Horn, Backup Alarm, Password protected, electronically adjustable speed limiting
Seat Covering	Kevlar®-Backed Vinyl (Grey)
Tilt Steering	Standard

Tires / Wheels

Electronic Power Steering	Optional
Front Tires	25 x 9.00-12; Wanda Crawler P3057
Hubs	Front: Ductile Iron; Rear: Aluminum
Rear Tires	25 x 9.00-12 Wanda Crawler P3057
Wheels	12 x 6 HD Steel - Gloss Black

Suspension

Front Suspension	MacPherson Strut 9 in (22.9 cm) Travel
Rear Suspension	Dual A-Arm, IRS 10 in. (25.4 cm) Travel



www.pingdsp.com

3DSS-iDX ⁹⁷ Integrated INS Shallow Water Mapping/Imaging System

- 3DSS-iDX Sonar
- integrated AML Sound Velocity Sensor
- integrated INS (SBG IMU and Septentrio GNSS)
- ultra-compact and portable

SUPERIOR SHALLOW WATER HYDROGRAPHY

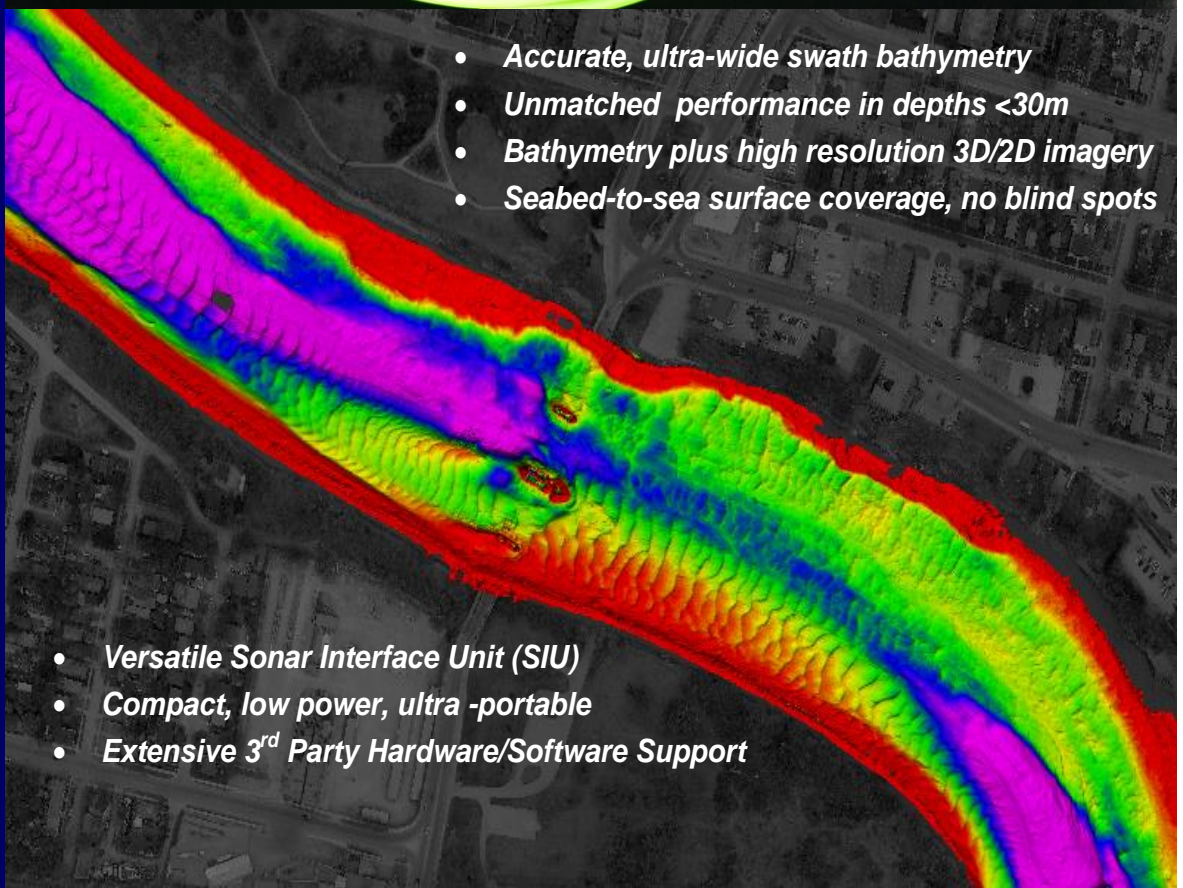
Accurate, high resolution, ultra-wide swath echo-sounding and 3D/2D imagery, with integrated real-time surface sound velocity, high accuracy INS position / attitude and optional RTK, PPK, PPP provide the best available hydrographic survey and imaging performance in shallow water.

SIMULTANEOUS REAL-TIME 3D IMAGERY

Geometrically correct, co-located 3D Sidescan imagery augments bathymetry and extends 2D sidescan resolution to three dimensions. 3DSS real-time 3D software displays, captures and allows accurate measurement in three dimensions of features on the seabed and in the water-column including pipes, cables, pilings, wrecks, subsea structures hazards, ecological habitats, and other features not well defined in bathymetry or 2D sidescan.

COMPACT, ULTRA-PORTABLE, VERSATILE

A versatile Sonar Interface Unit provides ultra-portable, easy turnkey operation with just a laptop and a battery on small boats, USV's, and dedicated survey launches.



- Accurate, ultra-wide swath bathymetry
- Unmatched performance in depths <30m
- Bathymetry plus high resolution 3D/2D imagery
- Seabed-to-sea surface coverage, no blind spots

- Versatile Sonar Interface Unit (SIU)
- Compact, low power, ultra -portable
- Extensive 3rd Party Hardware/Software Support



www.pingdsp.com

For more information please contact Ping DSP Inc. at: info@pingdsp.com

PATENTED ARRAY SIGNAL PROCESSING TECHNOLOGY

3DSS-iDX incorporates a patented signal processing methodology that extends the single angle-of-arrival principle used in interferometric systems to accommodate multiple simultaneous backscatter arrivals. When combined with the **3DSS-iDX** Multibeam Echo-Sounder Signal Processing Engine, the result is unsurpassed resolution and bathymetric accuracy over swath widths that can exceed 14 times water depth.

SOFTSONAR™ TECHNOLOGY

At the heart of the **3DSS-iDX** sonar is Ping DSP's state-of-the-art **SoftSonar™** electronics technology with ultra-low noise, wide dynamic range receivers, state-of-the-art acoustic transducer arrays, Gigabit Ethernet, easy-to-use software interface, and integrated support for a wide range of third party survey software and hardware.

BROAD APPLICATION

- Coastal Hydrographic survey
- River and Lake surveys
- Dredge surveys
- Tailing Pond surveys
- Subsea structure surveying
- Search and localization
- Benthic habitat mapping
- Underwater archaeology

3DSS-iDX Sonar Specifications¹				
Sonar Configurations				
<i>Model</i>	<i>Application</i>	<i>SVS</i>	<i>IMU</i>	<i>GNSS</i>
3DSS-iDX-BASE	Hydrography + 3D/2D Sidescan - 0.05° IMU, ext GNSS	AML Micro-X	SBG Ellipse2	External
3DSS-iDX-FULL	Turnkey Hydrography + 3D/2D Sidescan - 0.05° IMU	AML Micro-X	SBG Ellipse2	Septentrio AsteRx-m3 Fg
3DSS-iDX-PRO	Turnkey Hydrography + 3D/2D Sidescan - 0.02° IMU	AML Micro-X	SBG Navsight Ekinox	Septentrio AsteRx-m3 Fg
Sonar Specifications				
Operating Frequency	450 kHz	Mech. Transducer Tilt (fixed)	20°	
Transmit Waveforms	CW, Broadband	Electronic Transmit Tilt	-45° to 45°	
Pulse Lengths	10 – 200 cycles	Max. Ping Rep. Rate	~45 Hz	
Horizontal Beamwidth (2 way)	0.4°	Vertical Beamwidth (selectable)	19° - 125°	
2D Sidescan (2D Imagery) Specifications				
Data Output	Range and Amplitude			
2D Imaging Swath Width	10 to 20 times sonar altitude, varies with sound velocity profile, geometry and seabed type			
Max Range	200m per side			
Max Range Resolution	1.67cm			
3D Sidescan (3D Imagery) Specifications				
Data Output	Range, Angle, and Amplitude			
3D Imaging Swath Width	8 to 14 times sonar altitude, varies with sound velocity profile, geometry and seabed type			
Max 3D Imaging Range per Side	100m per side			
Max Resolution	1.67cm			
Bathymetry Specifications				
Data Output	Sounding Range, Angle, and Amplitude			
Bathymetry Swath Width	8 to 16 times sonar altitude, varies with sound velocity profile, geometry and seabed type			
Max Bathymetry Range	120m per side			
Min. Sounding Depth	0.5m			
Max. Sounding Depth	75m (reduced swath width)			
Sounding Accuracy	Exceeds IHO Special Order, meets or exceeds Dutch Norm 1A and Canadian Exclusive Order			
Multibeam Eq. Mode Settings	Beamwidth (0.25°-5°), Sector (90°-220°), Beams (3-1024), Mode (Equidistant, Equiangle, Hybrid)			
Legacy Mode Settings	Bin Count (3-1440), Bin Width (5cm – 200cm)			
Integrated Sensor Specifications				
SVS (-BASE, -FULL, -PRO)	AML MicroX ²	1375 – 1600m/s SV range, 20ms resp, 0.025m/s accuracy		
IMU (-BASE, -FULL)	IMU SBG Ellipse2 ³	pitch,roll 0.05°(RTK), hdg 0.2°(2m baseline), heave 5cm		
IMU (-PRO)	SBG Navsight Marine Ekinox ³	pitch,roll 0.02°(RTK), hdg 0.08°(2m baseline), heave 2cm		
GNSS (-FULL, -PRO)	Septentrio AsterRx-m3 Fg ⁴	dual recvr., GPS, GLONASS, Galileo, BeiDou, QZSS, SBAS, L-band Rx, fully unlocked for RTK, PPK, PPP, 0.6/1cm vert/horiz. accuracy (RTK)		
Interface Specifications				
Control Input / Data Output	Gigabit Ethernet, sonar software provides control GUI and TCP data server			
Time Reference	Time aligned to GNSS time			
Additional Communication Ports	RS-232 or Ethernet, for external MRU, GNSS or INS,			
Additional Inputs	PPS (SMA), Ext.Trigger (SMA)			
Computer Requirements	PC (Quad Core, 16GB, Discrete GPU (e.g. Nvidia), MS Windows 7,8, 10 (64 bit)			
3 rd Party Software Support	Hypack, SonarWiz, QINSy, PDS, BeamWorx, Caris HIPS/SIPS			
Physical Specifications				
Voltage Requirements	12-28 VDC			
Power Consumption	25W (-BASE), 28W (-FULL, -PRO)			
Sonar Head Dimensions	61 cm (24") long x 9.8cm (3.88") diameter			
Sonar Head Weight in Air, Water	8.5 kg (18.7 lbs), 5 kg (11 lbs)			
Sonar Interface Unit Dimensions	25.5cm (10.04") wide x 15.5cm (6.10") deep x 5.8cm (2.28") tall			
Pole Mount Adapter Diameter	1.49" (fits standard thickwall 1.5" I.D. Aluminum pipe), Flange mount adapter also included			
Ambient Operating Temp.	-5° C – 45° C			
Depth Rating	10 m			

Notes:

¹ Specifications subject to change without notice.

² See www.amloceanographic.com for complete specifications.

³ Specifications given for integrated 3DSS-INS operation and RTK corrections, see www.sbg-systems.com for full specifications.

⁴ See www.septentrio.com for complete specifications.



Product Quotation

Prepared For:
Robert Asero

Isle Of Palms
Isle of Palms SC 29451



Prepared By:
Anthony Brusadin
ORBIS JCB - CHARLESTON
N CHARLESTON SC 29418
mobile:

Image is for indicative purpose only and may not represent exact equipment being quoted



Standard Equipment

Standard Equipment and Features & Benefits related to this product are subject to change without notice

ENGINE	24.7 HP, EPA Tier 4 Final Perkins 403J-17 Engine with 67.8lbf of torque. No DPF, or after treatment required.
TRANSMISSION	Independent left and right track control. Hydraulic pumps drive integral track motors and gearbox. Two speed travel 1.74 mph and 2.8 mph.
TRACKS	12" rubber tracks (optional steel tracks) with 4 bottom rollers per side result in 4.5 psi ground pressure. 11" of ground clearance.
ELECTRICAL	12 volt, with 85 amp alternator, 475 CCA heavy duty battery. Waterproof wire harness connectors.
EXCAVATOR	10' 6" Max. dig depth with standard 4'3" dipper. Servo controls, with ISO and SAE electric toggle switch on right hand Pod. Auxiliary circuit provides 18.5 gpm.





Features and Benefits

Standard Equipment and Features & Benefits related to this product are subject to change without notice

Manuverability

Zero tailswing for more maneuverability allowing for greater access while in compact work areas.

Quality

Hoses are routed through the dig end for maximum protection against damage and wear, while O-ring face sealed hydraulic connections protect against leaks.

Safety

Seatbelt-activated green beacon, follow-me-home lights, lift overload system and JCB's unique 2GO system, all contribute to safer working.

Efficiency

Industry-leading fuel efficiency, with programmable auto-idle, for low fuel consumption and emissions.





Prepared For:
 Robert Asero
 Isle Of Palms
 Isle of Palms SC 29451
 phone:8439814026

Dealer Information
 ORBIS JCB - CHARLESTON
 7222 PEPPERMILL PKWY
 N CHARLESTON SC 29418
 phone:

Prepared By:
 Anthony Brusadin
 a.brusadin@orbisjcb.com
 mobile:
 Quote Date: 05/21/24
 Valid Until: 06/19/24
 Quotation Reference: 418690

Model: 35Z-1

Qty: 1

Stock Order/Serial No:3354257

35Z-1 MINI PLUS CAB PRIMARY BUILD
 CAB WITH AIR CON: WITH TOUGHENED GLASS
 JCB TRACKMASTER PLUS RUBBER TRACKS 300MM (12 INCHES)
 ISO CONTROL PATTERN:HIGH FLOW DOUBLE ACTING ELECPROP THUMB
 CONTROLLED AUX FOR 2 WAY DOZER
 HIGHBACK FABRIC SEAT WITH BLACK RETRACTABLE SEATBELT
 ENGLISH (US) LANGUAGE PACK
 STANDARD 1300MM DIPPER
 STANDARD 2 WAY DOZER
 ISO/SAE CHANGEOVER CONTROL PAT TERN FOR CAB
 DOZER FLOAT FOR STANDARD 2 WAY DOZER
 LED AMBER BEACON
 MECHANICAL QUICKHITCH
 600MM GENERAL PURPOSE BUCKET WITH BUCKET PINS
 DIPPER THUMB KIT FOR QH MACHIN ES (MECH OR HYDRAULIC)
 LIVELINK (INCLUDES HARDWARE AND 5 YEARS SUBSCRIPTION)

Equipment Total	55,974.23
Total Customer Sale Price	55,974.23

Notes: 2 Year 2000 Hour Full Machine Warranty
 Source Well Pin: 020223

The above quote supersedes all preceding price quotes. Prices quoted are valid for 30 days from quote date.

Customer Acceptance: _____ Date _____

Dealer _____ Date _____



City of Isle of Palms, SC

Memo

To: Isle of Palms City Council

From: Desirée Fragoso, City Administrator

cc: Douglas Kerr, Deputy City Administrator
Donnie Pitts, Public Works Director

Date: August 9, 2024

Re: Requesting approval of unbudgeted expenditure – Skid Steer for Stormwater Division

This memo is to request approval for the purchase of a skid steer with tracks for our Stormwater Management Team. As you are aware, effective stormwater management is critical to maintaining the integrity of our drainage infrastructure and protecting our community from flooding.

The Public Works Department has a skid steer with tires that is 20 years old. While it is operational and heavily used by the Public Works Department, the tires limit this piece of equipment to the road and hard surfaces. The new proposed skid steer with tracks will facilitate better access to drainage ditches, the beach and other unstable surfaces.

The addition of a skid steer to our equipment fleet will significantly enhance our team's ability to clear debris from drainage channels, excavate and grade for repairs and maintenance of stormwater systems, and efficiently transport materials to and from job sites.

The skid steer we are considering is highly versatile, with attachments available for various applications, ensuring that it can be utilized for multiple tasks throughout the year. Investing in this equipment will not only improve our operational efficiency but also reduce long-term maintenance costs associated with stormwater management.

The cost of the skid steer is \$62,500 from state contract pricing, and we propose using remaining drainage bond proceeds to cover this expenditure. With proper maintenance, the useful life of this equipment is expected to be 15 years.



Product Quotation

Prepared For:
Robert Asero

Isle Of Palms
Isle of Palms SC 29451



Prepared By:
William Ireland
ORBIS JCB - CHARLESTON
N CHARLESTON SC 29418
mobile:

Image is for indicative purpose only and may not represent exact equipment being quoted



Standard Equipment

Standard Equipment and Features & Benefits related to this product are subject to change without notice

ENGINE	2.5L (151.4CID) 74 SAE Gross hp, JCB Ecomax engine, centrifugal dry type dual stage air cleaner. Fuel filter with water separator; 1000 CCA battery; variable speed hydraulically driven fan.
TRANSMISSION	EH (Electo-Hydraulic) controls with hydrostatic transmission. Travel speeds of 0 to 5.6 mph in both forward and reverse. Standard creep speed provides operation from 0 - 1/2 of full speed for special applications. An optional two speed transmission is available providing a low range of 0 - 5.6 mph and a high range of 0 - 7.8 mph.
RUBBER TRACKS	Fitted with 12.6" (320mm) wide tracks provide a machine with of 66" and a ground bearing pressure of 6.5 psi.
BRAKES	Machine braking provided through the hydrostatic transmission. Parking brake consists of multiple disc, oil immersed, spring applied hydraulic release that provides a fail safe with the engine off. Electrically activated through a switch on the instrument panel or by raising seat bar.
ELECTRICAL	Meets IP69 (external) IP67 (internal) water ingress standard. Worklights, 2 Front and 1 Rear, Reverse Alarm, Horn, and 12V Accessory Socket.
INSTRUMENTS	Audible and visual warning systems, right and left side mounted instrument panels. Standard electronic throttle control with optional foot throttle.
CAB OR CANOPY	SAE certified ROPS/FOPS, left side entry. Vinyl seat with seatbelt and operator restraint interlock for drive and loader functions. Cab units are pressurized and available with heat or heat and A/C, sliding left window and full side door. Right hand glass as standard glass as standard on canopy and cabs. Bluetooth radio and LiveLink standard.
HYDRAULICS	18.5gpm @ 3335psi standard flow. Optional 30gpm @ 3335psi available.
LOADER	Rated operating capacity of 2050 lbs, vertical lift loader design provides vertical lift path and increased reach at full lift vs. radial lift designs. Auxiliary circuit is standard for operation of hydraulic powered attachments. Choice of standard mechanical or optional powered quick hitch. Hydraulic float standard on all models. Loader options include: parallel lift in raise only and SRS (smooth ride system), left hand auxiliary pipework.
SERVICEABILITY	Cab tilts forward to provide further access to the hydraulic components. Rear door provides class leading access to engine bay, daily maintenance and check points.





Features and Benefits

Standard Equipment and Features & Benefits related to this product are subject to change without notice

Value	JCB Skid Steers and Compact Track Loaders are efficient to use, own and operate. Superior build quality, great fuel efficiency and low running costs ensure high resale values and maximum return on investment.
Comfort and Control	With easy side-door entry, the largest cabs on the market, electric controls and adjustable joystick controls, JCB Skid Steers and Compact Track Loaders offer unrivalled comfort for maximum productivity.
Quality	JCB's stringent test programs include prolonged high-stress loading of the chassis, boom and other key components, as well as cold climate testing and repeated transmission use over thousands of cycles.
Safety	With a side door for safe entry and exit instead of having to climb over attachments or under an unsupported boom, the JCB Teleskid provides unparalleled operator safety.
Durability	A fully-welded chassis provides a rigid structure for maximum strength and reduced weight. For consistent performance on demanding terrain, JCB Skid Steer and Compact Track Loaders feature a solid undercarriage with cast steel, triple-flanged rollers.





Prepared For:
 Robert Asero
 Isle Of Palms
 Isle of Palms SC 29451
 phone:8439814026

Dealer Information
 ORBIS JCB - CHARLESTON
 7222 PEPPERMILL PKWY
 N CHARLESTON SC 29418
 phone:

Prepared By:
 William Ireland
 w.ireland@orbisjcb.com
 mobile:
 Quote Date: 07/18/24
 Valid Until: 07/21/24
 Quotation Reference: 422514

Model: 215T NA

Qty: 1

Stock Order/Serial No:3379199

215T (T4) NA SERIES 3.2
 320 MM WIDE RUBBER TRACK SET -4 ROLLER
 CAB, TRACKED, HEAT & AC FOR 4- CYL W/OPTIONS (SP T4/S5 3.2)
 JCB CONTROLS WITH 7 WAY JOYSTICK T4/S5
 LANDSCAPE BUCKET 72IN/1829 MM WIDTH/19.2 CU-FT/.54CU-M CAPAC ITY
 NORTH AMERICAN ENGLISH MANUAL - FOR CAB MACHINE
 HIGH FLOW HYDRAULICS FOR VERTICAL LIFT WITH CREEP SPEED T4/S5
 2 SPEED FOR TRACKED MACHINES
 BLOCK HEATER - 110V TIER 4 FINAL
 VINYL AIR SUSPENSION SEAT WITH ADJUSTABLE CONTROL PODS T4/S5
 POWERED QUICK HITCH T4S5

Equipment Total	65,000.00
Less Down Payment	2,500.00
Total Customer Sale Price	62,500.00

Notes: 2 Year 2000 Hour Full Machine Warranty
 SC Contract Number:4400034043
 Vendor Number:7000076018
 Down Payment: \$2500 For Month Rental

The above quote supersedes all preceding price quotes. Prices quoted are valid for 30 days from quote date.

Customer Acceptance: _____ Date _____

Dealer _____ Date _____



City of Isle of Palms, SC
Request for Bids 2024-03
ADA Boardwalks at 46th and 52nd Beach Access Paths

Bid Opening - 10:00 a.m., August 9, 2024

Douglas Kerr announced the sealed bid opening of RFB 2024-03. The RFB was advertised in accordance with the City's Procurement Code.

Bids Received:

Bidder	Base Bid (Ipe decking)	Bid Alternate #1 (Sub Ipe for 2x6 decking)	Bid Alternate #2 (Sub Ipe for Garapa decking)
IPW Construction	\$ 627,451	\$ 607,451	\$ 622,451
Seven Seas Marine	\$ 428,400	\$ 397,362	\$ 414,085
Rakes Building and Maintenance Contractors, LLC dba Blutide Marine	\$ 477,667	\$ 441,467	\$ 466,387
Icon Contracting, LLC	\$ 298,204	\$ 260,503	\$ 276,478

The bids will be evaluated for accuracy and compliance with the specifications defined in the RFB. A recommendation for award of a contract will be made to City Council.



Matt,

I wanted to introduce our company Icon Contracting. We are a fully licensed and insured general contracting company located in Summerville, SC. We have been in business since 2018. In the last year we have completed projects for numerous municipalities and government entities. These have included the Miracle League ADA bathroom and changing building for the City of Moncks Corner, a 30' x 75' Steel storage building for the SCDNR, and remodel of the park ranger quarters at Edisto Island State Park for SC Parks and Recreation.

Let me know if you need any references from these entities or any more information regarding our previous projects.

Thank You,

A handwritten signature in blue ink, appearing to read 'JK Livingston', with a stylized flourish at the end.

Jay K Livingston

BID FORM (modified 7/30/24)

BID OF: Icon Contracting LLC
 (Contractor)

BID TO: The City of Isle of Palms
 (Owner)

PROJECT NAME: 46th and 52nd Beach Access

PROJECT NUMBER: RFB 2024-03

BID DATE: August 9, 2024

BASE BID AGREEMENT

The undersigned, having examined all the Bidding Documents, including all Addendum(a) as follows:

Questions and responses- July 30, 2024

shall execute the entire Work in the Bidding Documents described as the Base Bid for the lump sum of:

\$298,203.50

Dollars

BASE BID AMOUNT (lpe decking and benchtops) \$ 298,203.50

BID ALTERNATE 1 (substituting 2x6 decking for lpe) \$ 260,502.50
 (add/subtract amount only)

BID ALTERNATE 2 (substituting Garapa decking for lpe) \$ 276,477.50
 (add/subtract amount only)

ITEMIZED COSTS (sum of each item should total BASE BID amount)**46th Avenue Beach Access Boardwalk**

1. Grading and compacting.
 \$41,450.00 Cost
2. Two asphalt ADA parking areas.
 \$14506.50 Cost
3. A 40-foot by 6-foot pervious concrete sidewalk.
 \$3250.00 Cost
4. A 319-foot by 6-foot Ipé boardwalk.
 \$105,658.00 Cost

52nd Avenue Beach Access Boardwalk

1. Grading and compacting.
 \$18,981.00 Cost
2. Two asphalt ADA parking areas.
 \$8700.00 Cost
3. A 320-foot by 6-foot Ipé boardwalk.
 \$105,658.00 Cost

BASE BID \$298,203.50

DATE FOR COMMENCEMENT AND SUBSTANTIAL COMPLETION

The Date for Commencement shall be established in the Notice to Proceed. The Contractor shall not incur any expense until the contract has been awarded. An award requires that either the Contract be signed by both the awarding authority and the contractor or a Notice to Proceed is executed.

All work for additions shall be substantially completed (as evidenced by the date on the CERTIFICATE OF SUBSTANTIAL COMPLETION) within: ONE-HUNDRED TWENTY (120) calendar days from the date set forth in the NOTICE TO PROCEED, subject to adjustments as provided in the Contract Documents.

Final completion of all work shall be performed within: THIRTY (30) calendar days from the scheduled contract time for substantial completion, subject to adjustments as provided in the Contract Documents.

The undersigned further agrees that from the compensation to be paid, the owner may retain as liquidated damages the sum of one thousand dollars (\$1,000) for each calendar day the actual contract time for Substantial Completion for the project exceeds the specified or adjusted contract time for Substantial Completion as provided in the Contract Documents.

THIS AGREEMENT IS SUBJECT TO BINDING ARBITRATION PURSUANT TO SOUTH CAROLINA CODE SECTION 15-48-10, ET SEQ., AS AMENDED

STATE OF SOUTH CAROLINA) 46th Beach Access
) 52nd Beach Access
 COUNTY OF CHARLESTON)

THIS AGREEMENT (“Agreement”) is made and entered into this ____ day of _____, 2024, by and between the City of Isle of Palms, S.C., a South Carolina municipal corporation (“City”), and Icon Contracting, LLC (“Contractor”).

WHEREAS, Contractor was the successful bidder under the City’s solicitation for bids for the 46th Beach Access site; and

WHEREAS, the parties hereto desire to enter into this Agreement to set forth the exact rights, duties and obligations of each party regarding the services to be performed by Contractor pursuant to the bid.

THEREFORE, in consideration of the mutual covenants and promises set forth herein,

City and Contractor agree as follows:

1. SCOPE OF WORK.
 - A. Contractor agrees to provide all labor, equipment, tools, materials, supplies, and incidentals necessary for the 46th and 52nd Beach Access project, pursuant to the bid submitted by Contractor to City dated 8/9/24 (the “Bid”), a copy of which is attached hereto as “Exhibit I” and made a part of this Agreement by reference thereto. In the event of any conflict between the provisions of this Agreement and the Solicitation, the term of this Agreement shall control.
 - B. Contractor agrees to use its best skill and attention and be solely responsible for all means, methods, techniques, sequences, and procedures in the performance of the work on the Project. Contractor hereby warrants to City that all work on the Project shall be performed in a good and workmanlike manner. Contractor agrees to comply with all applicable federal, state and local laws, rules and regulations regarding all work performed by Contractor pursuant to this Agreement.
2. CONTRACT PRICE. For all work under this Agreement, City agrees to pay to

Contractor the sum of 298,203.50 (\$ 298,203.50) Dollars, payable upon completion of the Project.

3. **CHANGE ORDERS.** The City has the right to require alterations or changes ("Change Orders") to the Project and in such case Contractor agrees to make such alterations or changes; provided, however, that the details and additional cost or credit of such Change Order must be agreed to by the City and Contractor in writing prior to the commencement of the Change Order.
4. **COMPLETION SCHEDULE. TIME IS OF THE ESSENCE.** Contractor agrees to complete the Project within one-hundred twenty (120) days from the date of this Agreement. Provided, however, that if performance by the Contractor is delayed for reasons or causes beyond the control of Contractor (including but not limited to, acts of God, weather conditions, site conditions, labor or material shortages, delays caused by City, and casualty losses) the Project completion date shall be extended accordingly.
5. **INSURANCE.** Contractor agrees to maintain comprehensive general liability insurance coverage on the work under the Project in an amount not less than \$1,000,000.00 per person, \$2,000,000.00 per claim, and \$250,000.00 per claim for property damage. Contractor also agrees to maintain worker's compensation coverage on its employees as required by the State of South Carolina workers' compensation laws. All insurance coverage required hereunder shall be with companies approved in advance by City, who shall be named as an additional insured on all such policies. Proof of such insurance shall be provided to City prior to commencement of any work by Contractor.
6. **PERMITS, FEES AND LICENSES.** Contractor agrees to apply for, obtain and pay for all permits, fees, licenses and inspections by governmental agencies necessary for the Contractor's proper performance and completion of the Project, including, but not limited to, a City business license.
7. **INDEMNIFICATION.** Contractor agrees to hold harmless and indemnify City and its officers, agents and employees from and against any loss or damage, including all reasonable attorney's fees and expenses, incurred as a result of any and all claims, demands, causes of action, suits, judgments, fines or penalties (including but not limited to all fees and expenses incurred as a result of death or injury to persons or for loss of or damage to property) arising out of or in connection with Contractor's performance of the work under this Agreement.
8. **SITE INVESTIGATION.** Contractor acknowledges that Contractor has had the opportunity to inspect the service areas, has determined the nature of the work and the difficulties and facilities attending performance of the work, and all other matters which Contractor contemplates may in any way affect the work under this Agreement.

9. **BINDING ARBITRATION.** Any dispute or controversy arising under or in connection with this Agreement shall be submitted to binding arbitration in accordance with the requirements of the South Carolina Uniform Arbitration Act as then in effect ("SCUAA"). All arbitration proceedings shall be conducted in Charleston County, South Carolina. The arbitrators shall be selected as provided in the SCUAA, and the arbitrators shall render a decision on any dispute within ninety (90) days after the last of the arbitrators has been selected. If any party to this Agreement fails to select an arbitrator with regard to any dispute submitted to Arbitration under this Section within thirty (30) days after receiving notice of the submission to arbitration of such dispute, then the other party or parties shall select an arbitrator for such nonselecting party, and the decision of the arbitrators shall be final and binding upon all the parties to the dispute, their personal representatives, legal representatives, heirs, successors and assigns. The prevailing party in any such proceeding shall be entitled to reimbursement by the losing party, in addition to any damages awarded, for all reasonable costs and expenses, including attorney's fees, incurred in any such proceeding, including all trial and appellate levels. Nothing contained in this Section shall preclude either party from seeking injunctive relief through a court of competent jurisdiction in connection with the Arbitration, and the prevailing party shall also be entitled to reimbursement by the losing party for all reasonable fees and costs, including attorney's fees, incurred in the proceedings seeking injunctive relief.

10. **BREACH.**

A. In the event that either party breaches any provision of this Agreement, and the same continues for a period of seven (7) days after receipt of written notice thereof, then the nonbreaching party may exercise any and all remedies at law or in equity regarding the breach of this Agreement. Without prejudice to any other rights or remedies available for the said breach, the non-breaching party may terminate this Agreement and cease further performance under this Agreement.

B. Unless authorized by this Agreement, if the Contractor completely ceases work on the Project for a period of fifteen (15) days, or defaults or persistently fails or neglects to carry out the Project, the City may, after seven (7) days' written notice to the Contractor, complete the Project and if the unpaid balance of the contract price exceeds the City's actual cost of completing the Project, such excess shall be paid to the Contractor, but if such expense exceeds the unpaid balance, the Contractor shall pay the difference to the City.

11. **EFFECT OF WAIVER OR CONSENT.** A waiver or consent, express or implied, to or of any breach or default by a party in the performance of its obligations under this Agreement is not a consent or waiver to or of any other breach or default in the performance by that party of the same or any other obligations of that party with respect

to this Agreement. Failure on the part of a party to complain of any act of the other party or to declare a party in default with respect to this Agreement, irrespective of how long that failure continues, does not constitute a waiver by that party of its rights with respect to that default until the applicable statute-of-limitation period has run.

12. **SUB-CONTRACT OR ASSIGNMENT.** Contractor agrees not to enter into any subcontracts or assignments pertaining to the performance of all or any part of this Agreement, either voluntarily or by operation of law, without prior written approval of City.

13. **BINDING AGREEMENT.** This Agreement shall be binding upon and inure to the benefit of the parties hereto and their respective successors and permitted assigns.

14. **GOVERNING LAW; SEVERABILITY.** This Agreement is governed by and shall be construed and interpreted in accordance with the laws of the State of South Carolina. If any provision of this Agreement is held invalid or unenforceable to any extent by a court of competent jurisdiction, the remainder of this Agreement is not affected thereby and that provision shall be enforced to the greatest extent permitted by law.

15. **ENTIRE AGREEMENT.** This Agreement constitutes the entire agreement between the parties hereto relating to the subject matter hereof, and supersedes and nullifies all prior or contemporaneous contracts, agreements, understandings or representations, whether oral or written, which are not expressly stated in this agreement. Neither party is relying upon any representation not expressly contained herein. This Agreement may be amended and modified from time to time only upon the written mutual consent of City and Contractor.

16. **SECTION HEADINGS.** The headings of Sections or paragraphs used in this Agreement have been inserted for convenience only and are not to be used in determining the contents contained herein.

IN WITNESS WHEREOF, the City and Contractor have hereunto set their hands and seals, by and through the undersigned officers, as of the day and year first above written.

WITNESS:

Contractor:

(#1 as to Contractor)



By: Jay K Livingston

(#2 as to Contractor)

Title: President

The City of Isle of Palms, S.C.:

(#1 as to City)

By: _____

(#2 as to City)

Title: _____

ESTIMATE

Icon Contracting
 512 Foxtail Park St
 Summerville, SC 29486

j.livingston@iconcontractingco.com
 (843) 809-8120
 www.iconcontractingco.com



Bill to

RFB 2024-03 ADA Beach Access46th &
 52nd Ave IPE
 1207 Palm Blvd
 PO Box 508
 Isle of Palms, SC 29451

Ship to

RFB 2024-03 ADA Beach Access46th &
 52nd Ave IPE
 1207 Palm Blvd
 PO Box 508
 Isle of Palms, SC 29451

Estimate details

Estimate no.: 1037
 Estimate date: 08/08/2024

#	Date	Product or service	Description	Qty	Rate	Amount
1.			IPE Beach Access			
2.		Sales	46th Ave IPE Boardwalk installation per plan pages L1 & L2 LnFt	319	\$294.00	\$93,786.00
3.		Sales	Demo and Remove Existing Asphalt Parking Area and Base Aggregate	1	\$17,760.00	\$17,760.00
4.		Sales	Grade, Prep, Compact Base for SCDOT Asphalt	1	\$14,750.00	\$14,750.00
5.		Sales	Demo and Clear Vegetation for new Boardwalk	1	\$7,485.00	\$7,485.00
6.		Sales	Demo and Removal of Existing Access Walkway	1	\$5,485.00	\$5,485.00
7.		Sales	Traffic Control, Barricade, Installation, Mobilization	1	\$2,275.00	\$2,275.00
8.		Sales	Install New Asphalt ADA Parking Spaces	2	\$7,253.25	\$14,506.50
9.		Sales	Grade and Stabilize New Parking Perimeter	1	\$3,248.00	\$3,248.00
10.		Sales	Install 40' x 6' Pervious Concrete ADA Sidewalk	1	\$3,250.00	\$3,250.00
11.						

	Sales	Survey and Stake New Proposed Boardwalk	1	\$2,210.00	\$2,210.00
12.	Sales	52nd Ave IPE Boardwalk installation per plan pages L1 & L2	320	\$294.00	\$94,080.00
13.	Sales	Demo and Remove Existing Sod and Vegetation for Base Aggregate	1	\$4,945.00	\$4,945.00
14.	Sales	Grade, Prep, Compact Base for SCDOT Asphalt	1	\$8,995.00	\$8,995.00
15.	Sales	Demo and Clear Vegetation for new Boardwalk	1	\$4,875.00	\$4,875.00
16.	Sales	Traffic Control, Barricade, Installation, Mobilization	1	\$2,275.00	\$2,275.00
17.	Sales	Install New Asphalt ADA Parking Spaces	2	\$4,350.00	\$8,700.00
18.	Sales	Grade and Stabilize New Parking Perimeter	1	\$3,248.00	\$3,248.00
19.	Sales	Survey and Stake New Proposed Boardwalk	1	\$2,210.00	\$2,210.00
20.	Sales	Permitting, Inspections, Engineering, Licensing, Bonding, Mobilization, Administration, Labor	1	\$4,120.00	\$4,120.00
				Total	\$298,203.50

Accepted date

Accepted by

August 22, 2024

Desirée Fragoso
Administrator
City of Isle of Palms
1207 Palm Blvd
Isle of Palms, SC 29451

RE: Amendment 3 to Agreement [CSE 2587]

Dear Desirée:

CSE is requesting an amendment to our agreement for professional services related to emergency beach management at Isle of Palms. This follows a prior amendment dated 8 March 2024 that included an additional survey of Breach Inlet and anticipated coordination through April 2024. CSE was able to extend this budget through June 2024; however, as of July 2024, the budget has been exhausted. CSE's additional work (beyond what was anticipated in Amendment 2) under the prior amendment included attendance at several Beach Ad-Hoc committee meetings (4 in person and others remotely), coordination of installation of 100 additional sandbags along Beachwood East, and multiple site assessments in response to evolving erosion issues.

CSE requests additional funds to account for services performed to-date, including 1) assistance in additional emergency work along the area near Breach Inlet, including beach scraping and planning, bidding, and administration of installation of up to 800 sandbags, 2) site assessments in response to tropical storms, 3) attendance and support of Beach Ad-Hoc committee meetings, and 4) liaison with City staff and public stakeholders in the eroded area. The requested amendment will allow for additional management of the current sandbag effort at the south end, and future emergency work anticipated at the area near Beachwood East through the end of 2024. Anticipated services include:

- ~Weekly site assessments including drone-acquired aerial photography and periodic surveys of sandbag revetments
- Coordination of additional sandbag installation and/or removal efforts
- Attendance, data analysis, and liaison for Beach Ad-Hoc committee
- Liaison with City staff, permit agencies, and public



CSE requests a budget amendment of \$83,000, which includes \$66,680 in professional fees and \$16,320 in direct expenses. Of this total, ~\$20,000 accounts for services performed in July and August 2024 including site assessments, contractor liaison, permit assistance, and construction administration of additional sandbags at Beachwood East and Ocean Blvd.

CSE anticipates that additional emergency efforts will be required along Beachwood East/Dunecrest Ln until the City can implement a shoal management project.

Please let me know if you have any questions or need additional detail regarding the scope of services.

Sincerely,

Coastal Science & Engineering (CSE)

Steven B Traynum
Coastal Scientist / Project Manager

Signature for Approval

ATTEST

CITY OF ISLE OF PALMS (SC)

Witness (Signature)

(Signature)



Resolution No.: R-2024-05

***Authorizing Consumption of beer and wine only, road closures and amplified music at
The IOP Connector Run and Walk for the Child on October 5, 2024***

WHEREAS, the Isle of Palms Exchange Club and the City of Isle of Palms Recreation Department are hosting the 2024 IOP Connector Run and Walk for the Child on Saturday, October 5, 2024, on Palm Blvd and IOP Connector; and,

WHEREAS, the City of Isle of Palms Recreation Department is requesting permission for the temporary closing and use from 5:30 am and 12:00 pm of Palm Blvd between 10th Ave and 14th Ave, the IOP Connector, Pavilion Dr. between JC Long Blvd and the Public Safety Building, JC Long Blvd between Palm Blvd and Municipal Lot A for set up, for the run, for clean-up and for staging of the event; for the temporary closing and use from 7:00 am and 12:00 pm of Municipal Parking Lot A for the post-race celebration event to be held on Saturday, October 5, 2024 from 8:00 a.m. to 11:00 a.m.; for participants to consume beer and wine beverages only at the post-run event held in Municipal Parking Lot A during the hours of 8:00 a.m. to 11:00 a.m.; and for crowd control; and,

WHEREAS, it has been determined that such an event would be in the public interest;

NOW, THEREFORE, BE IT RESOLVED by the Mayor and Council This _____ day of _____, 2024, that possession and consumption of beer and wine beverages and the use of amplified music is authorized in Municipal Parking Lot A on Pavilion Ave between the hours of 8:00 a.m. and 11:00 a.m. on Saturday, October 5, 2024; and,

BE IT FURTHER RESOLVED the use of amplified noise is authorized on Palm Blvd in the race area between the hours of 7:30 a.m. and 11:00 a.m. on Saturday, October 5, 2024; and,

BE IT FURTHER RESOLVED that possession and consumption of alcoholic liquors or alcoholic beverages other than beer and/or wine beverages within the event area is prohibited; and,

BE IT FURTHER RESOLVED that outdoor possession and consumption of beer and wine beverages only, all outdoor musical performances and use of sound-amplifying devices shall end by 10:00 a.m. due to the proximity of the event to residential properties; and,

BE IT FURTHER RESOLVED that all vendors be restricted to stationary location; and,

BE IT FURTHER RESOLVED that only pedestrian traffic will be allowed in the area. All other traffic including, but not limited to, Automobiles, trucks, motorcycles, mopeds, bicycles, skateboards, golf carts, LSVs, except police and fire LSVs, is prohibited; and,

BE IT FURTHER RESOLVED that during the designated times the closed portion of Municipal Parking Lot A along Pavilion Ave is deemed to be the site of a public event at which only beer and wine beverages may be consumed and the prohibition against possession or consumption of alcoholic beverages set forth in Section 7-2-1 shall not apply as to the possession and consumption of beer and/or wine beverages only.

Mayor

ATTEST:

City Clerk



Resolution No.: R-2024-06

***Authorizing Consumption of beer and wine only, amplified noise and street closure at
The LOWVELO Bike Ride on November 2, 2024***

WHEREAS, the MUSC Hollings Cancer Center LOWVELO is hosting the 2024 LOWVELO Bike Ride on Saturday, November 2, 2024 on Ocean Blvd from Pavilion Dr to 14th Ave and inside of Municipal Lot B; and,

WHEREAS, the MUSC Hollings Cancer Center LOWVELO is requesting permission for the temporary closing and use of Municipal Lot B for set up, the kick-off, clean up, staging of the event and the post ride celebration event from 9:00 am on Tuesday, October 29, 2024 through 10:00 pm on Monday, November 4, 2024 and the temporary closing of Ocean Blvd (southbound traffic lane) from 14th Ave to Pavilion Dr for set up, bike riding portions of the event and clean up from 7:00 am on Thursday, October 31, 2024 through 11:59 pm on Saturday, November 2, 2024; for participants to consume beer and wine beverages in Municipal Lot B only between 8:30 a.m. to 6:00 p.m. on Saturday, November 2, 2024; and for the use of amplified noise throughout the event on Saturday, November 2, 2024 between 8:30 a.m. to 6:00 p.m.; and,

WHEREAS, it has been determined that such an event would be in the public interest;

NOW, THEREFORE, BE IT RESOLVED by the Mayor and Council This _____ day of _____, 2024, that possession and consumption of beer and wine beverages only and the use of amplified noise is authorized in the event space in Municipal Lot B on Saturday, November 2, 2024, between 8:30 a.m. and 6:00 p.m.; and,

BE IT FURTHER RESOLVED that the closure of the southbound lane of traffic on Ocean Blvd between 14th Ave and Pavilion Dr is authorized between the hours of 7:00 a.m. on Thursday, October 31, 2024 and 11:59 p.m. on Saturday, November 2, 2024; and,

BE IT FURTHER RESOLVED that the closure of Municipal Lot B is authorized between the hours of 9:00 a.m. on Tuesday, October 29, 2024 and 10:00 p.m. on Monday, November 4, 2024; and,

BE IT FURTHER RESOLVED that possession and consumption of alcoholic liquors or alcoholic Beverages other than beer and/or wine beverages within the event area is prohibited; and,

BE IT FURTHER RESOLVED that outdoor possession and consumption of beer and wine beverages only, all outdoor musical performances and use of sound-amplifying devices shall end by 6:00 p.m. due to the proximity of the event to residential properties; and,

BE IT FURTHER RESOLVED that all vendors be restricted to stationary location; and,

BE IT FURTHER RESOLVED that only pedestrian traffic will be allowed in the area. All other traffic including, but not limited to, Automobiles, trucks, motorcycles, mopeds, bicycles, skateboards, golf carts, LSVs, except police and fire vehicles, is prohibited; and,

BE IT FURTHER RESOLVED that during the designated times the closed portion of Municipal Lot B is deemed to be the site of a public event at which only beer and wine beverages may be consumed and the prohibition against possession or consumption of alcoholic beverages set forth in Section 7-2-1 shall not apply as to the possession and consumption of beer and/or wine beverages only.

Mayor

ATTEST:

City Clerk



Resolution No.: R-2024-06

***Authorizing Consumption of beer and wine only and amplified music at
The Holiday Street Festival on December 7, 2024***

WHEREAS, the City of Isle of Palms Recreation Department is hosting the 2024 Holiday Street Festival on Saturday, December 7, 2024 on Ocean Blvd between 10th Ave and Pavilion Dr and in Municipal Lot A; and,

WHEREAS, the City of Isle of Palms Recreation Department is requesting permission for the temporary closing and use of Municipal Lot A from 6:00 p.m. on December 6, 2024 through 10:00 pm on December 7, 2024 for carnival equipment setup and the temporary closing and use of Ocean Blvd between 10th Ave and Pavilion Dr on December 7, 2024 from 6:00 am and 10:00 p.m. for set up, clean up, and staging of the event to be held on Saturday December 7, 2024 from 2:00 p.m. to 7:00 p.m.; for patrons to consume beer and wine beverages only at the event during the hours of 2:00 p.m. to 7:00 p.m.; and for crowd control; and,

WHEREAS, it has been determined that such an event would be in the public interest;

NOW, THEREFORE, BE IT RESOLVED by the Mayor and Council This _____ day of _____, 2024, that possession and consumption of beer and wine beverages only and the use of amplified noise is authorized on Ocean Blvd between 10th Ave and Pavilion Dr and in Municipal Lot A between the hours of 2:00 p.m. and 7:00 p.m. on Saturday, December 7, 2024; and,

BE IT FURTHER RESOLVED the closure of Ocean Blvd between 10th Ave and Pavilion Dr between the hours of 6:00 a.m. and 7:00 p.m. on Saturday, December 7, 2024 and the closure of Municipal Lot A between 6:00 p.m. on December 6, 2024 through 10:00 p.m. on Saturday, December 7, 2024; and,

BE IT FURTHER RESOLVED that possession and consumption of alcoholic liquors or alcoholic Beverages other than beer and/or wine beverages within the event area is prohibited; and,

BE IT FURTHER RESOLVED that outdoor possession and consumption of beer and wine beverages only, all outdoor musical performances and use of sound-amplifying devices shall end by 7:00 p.m. due to the proximity of the event to residential properties; and,

BE IT FURTHER RESOLVED that all vendors be restricted to stationary location; and,

BE IT FURTHER RESOLVED that only pedestrian traffic will be allowed in the area. All other traffic including, but not limited to, Automobiles, trucks, motorcycles, mopeds, bicycles, skateboards, golf carts, LSVs, except police and fire LSVs, is prohibited; and,

BE IT FURTHER RESOLVED that during the designated times the closed portion of Ocean Blvd is deemed to be the site of a public festival at which only beer and wine beverages may be consumed and the prohibition against possession or consumption of alcoholic beverages set forth in Section 7-2-1 shall not apply as to the possession and consumption of beer and/or wine beverages only.

Mayor

ATTEST:

City Clerk