

ORIGINAL  
CLERK 963

**Robert O. Oakes, Jr.**  
Mayor

**Doug Remaley**  
Mayor Pro Tem

**Cliff Ogburn**  
Town Manager



**Town of Nags Head**  
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**Anna D. Sadler**  
Commissioner

**M. Renée Cahoon**  
Commissioner

**Susie Walters**  
Commissioner

NORTH CAROLINA  
DARE COUNTY

SERVICE CONTRACT  
PURCHASE ORDER # 12-02900

**THIS CONTRACT IS NOT VALID WITHOUT THE REQUIRED ACCOMPANYING/  
CORRESPONDING PURCHASE ORDER**

PK  
(CONTRACTOR initials)

THIS CONTRACT is made and entered into this the 25<sup>th</sup> day of April 2012, by and between the TOWN OF NAGS HEAD, a public body corporate of the State of North Carolina, (hereinafter referred to as "the TOWN") party of the first part and Coastal Science & Engineering, Inc. (CSE), (hereinafter referred to as "CONTRACTOR"), party of the second part.

1. SERVICES TO BE PROVIDED AND AGREED CHARGES

The services and/or material to be furnished under this contract (hereinafter referred to collectively as "SERVICES") and agreed charges are as follows:

**To furnish professional engineering and geological services as described in the document entitled "Exhibit A; THE PROPOSAL FOR PROFESSIONAL SERVICES; 2012-2016 (Five Years) Post-Project Monitoring and Maintenance Services of the Nags Head, North Carolina, Beach Nourishment Project", dated 12 April 2012 (copy attached and incorporated herein). Also incorporated as part of this contract is the CONTRACTOR's "Agreement between Client and Engineer for Professional Services [2387]", dated 20 April 2012 (copy attached).**

**Contractor acknowledges that the itemized services and associated fees proposed herein are to be performed by CSE at the sole discretion and direction of the Town on an as-required basis and consequently that performance of the full scope of services proposed by CSE is not guaranteed. The Town is only obligated for payment of services rendered by CSE on this basis.**

**Total not-to-exceed contract price is \$430,320.00 (four hundred thirty thousand three hundred twenty dollars and no cents). Price is in accordance with attached PROPOSAL and includes a \$12,000.00 allowance for orthophotography work tentatively scheduled for Year 3.**

2. DESCRIPTION OF PROJECT

Work under this contract consists of professional engineering and geological services necessary for implementation of post-project monitoring and maintenance in connection with the Beach Monitoring & Maintenance Plan (adopted by the Town on 25 August 2011). The purpose of which is to track the physical condition of the beach after nourishment, quantify sand volume changes, and determine whether the project qualifies for emergency re-nourishment following declared disasters. Work is also intended to identify erosion hot spots and recommend small-scale maintenance re-nourishment, placement of sand fencing, and/or sand scraping so as to increase the life of the project.

3. TERM OF CONTRACT

The term of this CONTRACT for SERVICES is from April 23, 2012 to December 31<sup>st</sup>, 2016. Either party may nonetheless cancel this contract on thirty (30) days written notice to the other party by certified mail or personal delivery. This contract is subject to the availability of funds to purchase the specified SERVICES and may be terminated at any time if such funds become unavailable.

Notwithstanding provisions of this Section 3 to the contrary, the following shall survive the termination of this CONTRACT: any provision in Section 1 regarding liquidated damages; the provisions of Section 6 regarding indemnity; and the provisions of Section 9.

4. PAYMENT TO CONTRACTOR

The TOWN agrees to pay at the rates specified for SERVICES satisfactorily performed in accordance with this contract. Unless otherwise specified, the CONTRACTOR shall submit an itemized invoice to the TOWN by the end of the month during which SERVICES are performed. Payment will be processed promptly upon receipt and approval by the TOWN of the invoice.

5. INDEPENDENT CONTRACTOR

Both the TOWN and the CONTRACTOR agree that the CONTRACTOR shall act as an independent contractor and shall not represent itself as an agent or employee of the TOWN for any purpose in the performance of the CONTRACTOR'S duties under this contract. Accordingly, the CONTRACTOR shall be responsible for payment of all Federal, State and local taxes arising out of the CONTRACTOR'S activities in accordance with this contract, including by way of illustration by not limitation, Federal and State income tax, Social Security tax, Unemployment Insurance taxes, and any other taxes or business license fees as required.

In performing the SERVICES, the CONTRACTOR is acting as an independent contractor and shall perform SERVICES in accordance with currently approved methods and practice in the CONTRACTOR'S professional capacity and in accordance with the standards of applicable professional organizations and licensing agencies.

6. INSURANCE AND INDEMNITY

The CONTRACTOR shall indemnify and save harmless the TOWN, its agents and employees from and against all actions, liability, claims, suits, damages, cost or expenses of any kind which may be brought or made against the TOWN or which the TOWN must pay and incur by reason of or in any manner resulting from injury, loss or damage to persons or property resulting from negligent performance of or failure to perform any of its obligations under the terms of this CONTRACT.

The CONTRACTOR shall be fully responsible to the TOWN for the acts and omissions of its sub-contractors and of persons either directly or indirectly employed by it, as the CONTRACTOR is for the acts and omissions of persons directly employed by it.

In addition, the CONTRACTOR shall comply with the North Carolina Worker's Compensation Act and shall provide for the payment of workers' compensation to its employees in the manner and to the extent required by such Act. In the event the CONTRACTOR is excluded from the requirements of such Act and does not voluntarily carry workers' compensation coverage, the CONTRACTOR shall carry or cause its employees to carry adequate medical/accident insurance to cover any injuries sustained by its employees or agents during the performance of SERVICES.

The CONTRACTOR agrees to furnish the TOWN proof of compliance with said Act or adequate medical/accident insurance coverage upon request.

The CONTRACTOR upon request by the TOWN shall furnish a Certificate of Insurance from an insurance company, licensed to do business in the State of North Carolina and acceptable to the TOWN verifying the existence of any insurance coverage required by the TOWN. The Certificate will provide for sixty (60) days advance notice in the event of termination or cancellation of coverage.

7. HEALTH AND SAFETY

The CONTRACTOR shall be responsible for initiating, maintaining and supervising all safety precautions and programs in connection with the work. The CONTRACTOR shall take all necessary precautions for the safety of, and shall provide the necessary protection to prevent damage, injury or loss to all employees from the work and other persons who may be affected thereby.

8. NON-DISCRIMINATION IN EMPLOYMENT

The CONTRACTOR shall not discriminate against any employee or applicant for employment because of age, sex, race, creed, or national origin. The CONTRACTOR shall take affirmative action to ensure that applicants are employed and that employees are treated during employment without regard to their age, sex, race, creed, or national origin. In the event the CONTRACTOR is determined by the final order of an appropriate agency or court to be in violation of any non-discrimination provision of federal, state or local law or this provision, this Contract may be cancelled, terminated or suspended in whole or in part by the TOWN, and the CONTRACTOR may be declared ineligible for further contracts.

9. GOVERNING LAW

This contract shall be governed by and in accordance with the laws of the State of North Carolina. All actions relating in any way to this contract shall be brought in the General Court of Justice of the State of North Carolina or in the Federal District Court for the Eastern District of North Carolina, and the parties hereby submit to venue in and the personal jurisdiction of the said Courts.

10. OTHER PROVISIONS

This Contract is subject to such additional provisions as are set forth in any addendum executed separately by each party and attached hereto.

11. CONTRACT DOCUMENTS/AMENDMENTS

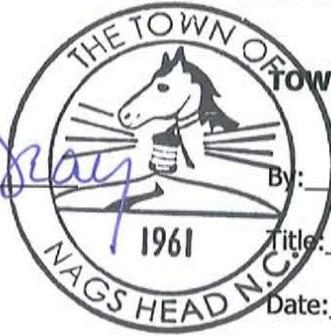
This document together with the purchase order and any attached exhibits constitutes the entire Contract between the said two parties and may only be modified by a written mutual agreement signed by the parties and attached hereto.

12. SIGNATURES

Both the TOWN and the CONTRACTOR agree to the above contract.

Witnessed or Attested By:

Michelle H. Gray



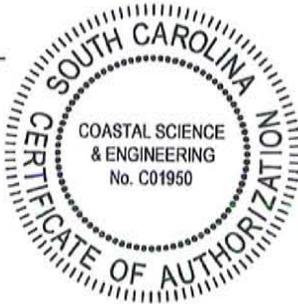
TOWN OF NAGS HEAD

By: C. G. G. G.

Title: TOWN MANAGER

Date: 4/30/12

Maughlin



CONTRACTOR

By: Justin W. Kamm

Title: President

Date: 25 April 2012

"This instrument has been preaudited in the manner required by the Local Government Budget and Fiscal Control Act."

D. G. G. G. 4/30/12  
Finance Officer

APPROVED AS TO FORM AND LEGAL SUFFICIENCY.

John M. [Signature]  
TOWN ATTORNEY



**AGREEMENT BETWEEN CLIENT AND ENGINEER  
FOR PROFESSIONAL SERVICES [2387]**

Project Name: *2012-2016 (Five Years) Post-Project Monitoring and Maintenance Services of the Nags Head, North Carolina, Beach Nourishment Project*

CSE Project No. 2387

THIS AGREEMENT is made on the 12th day of April, 2012, by and between Town of Nags Head, hereinafter called CLIENT, and Coastal Science & Engineering (CSE), hereinafter called ENGINEER.

The CLIENT and ENGINEER, for mutual consideration hereinafter set forth, agree as set forth below and as set forth in the attached standard provisions:

1.0 ENGINEER'S SERVICES: ENGINEER shall perform professional services in connection with the Project as set forth below and contained in this Agreement:

*Services provided shall be as described in the Proposal for Professional Services, Scope of Services – attached as Exhibit A, dated 12 April 2012 and made a part of this Agreement herein.*

2.0 TERM OF CONTRACT

2.1 ENGINEER shall start performing services according to the schedule outlined on page 8 of The Proposal or not later than five (5) days after receipt of CLIENT'S authorization to proceed, which shall not be given later than 30 days after the date of this Agreement.

2.2 The term of this Agreement is from proposed starting date as detailed in The Proposal subject to CLIENT's authorization to proceed through 31 December 2016.

2.3 Either party may nevertheless cancel this contract on 30 days written notice to the other party by certified mail or personal delivery. This contract is subject to the availability of funds to purchase specified ENGINEER'S SERVICES and may be terminated at any time if such funds become unavailable. If this contract is terminated, the ENGINEER shall be paid for services performed to the termination notice date including Reimbursable Expenses due.

3.0 ENGINEER COMPENSATION:

In accordance with this Agreement, the ENGINEER shall provide professional services for which the CLIENT shall compensate ENGINEER as follows:

*Fees shall be in accordance with Exhibit A, The Proposal – Proposed Budget and Fee Schedule (pages 10-11) dated 12 April 2012.*



Notwithstanding anything to the contrary, ENGINEER's in-house expenses (such as miscellaneous copying, long-distance telephone/facsimile, microcomputer, word-processing equipment, normal postage) will be invoiced to CLIENT at cost not to exceed 5 percent of the total invoiced ENGINEER labor.

OTHER:

3.1 Payments will be made to the ENGINEER on a monthly basis upon presentation of an approved invoice.

4.0 SPECIAL PROVISIONS:

4.1 The Agreement shall be governed by the laws of the State of North Carolina.

4.2 During the term of this Agreement, ENGINEER agrees to provide evidence of workmen's compensation insurance coverage where applicable and comprehensive general liability insurance coverage.

4.3 During the term of this Agreement, ENGINEER agrees to provide evidence of professional liability insurance with a limit of at least \$250,000 for each claim and an annual aggregate of at least \$1,000,000.

4.4 ENGINEER is not responsible for the identifying, discovering, removal and/or treatment (remediation) of any hazardous waste, known or unknown at the site, nor for the consequences of any hazardous waste materials of any kind at the site, including, but not limited to asbestos and PCBs, as well as materials not yet known as hazardous.

4.5 Any notices required to be given under this Agreement may be given by enclosing the same in a sealed envelope, postage prepaid, addressed to the CLIENT at Town of Nags Head, PO Box 99, Nags Head, NC 27959, and to the ENGINEER at PO Box 8056, Columbia, SC 29202-8056 and by depositing same with the U.S. Postal Service. When so given, such notice shall be given from the time of mailing the same.



IN WITNESS THEREOF, the parties hereto have executed this Agreement as of the day and year first written above.

ENGINEER:

Coastal Science & Engineering Inc  
PO Box 8056 Columbia SC 29202-8056

DATE: April 20, 2012

BY:

TITLE:

*Jimmy W. Kane*

President

WITNESS:

*Diana R. Sangster*

ATTEST

TOWN OF NAGS HEAD

\_\_\_\_\_  
Clerk to Board

\_\_\_\_\_  
Town Manager

ATTEST

\_\_\_\_\_  
Secretary

This agreement has been pre-audited in the manner required by the Local Government Budget and Fiscal Control Act.

APPROVED AS TO FORM & LEGALITY

\_\_\_\_\_  
Finance Director

\_\_\_\_\_  
Town Attorney

APPROVED AS TO CONTENT

\_\_\_\_\_  
Department Representative



## STANDARD PROVISIONS

### 1.0 CLIENT 'S RESPONSIBILITY:

The CLIENT shall, unless otherwise provided for in this Agreement, at no cost to the ENGINEER:

- 1.1 Furnish to the ENGINEER all reasonable survey and property description data requested by the ENGINEER for the Project.
- 1.2 Guarantee full and free access for the ENGINEER to enter upon all property for the performance of the ENGINEER'S services.
- 1.3 Furnish to the ENGINEER all existing studies, reports and other available data and services of others pertinent to the Scope of Services, and obtain additional reports and data as required; and ENGINEER shall be entitled to rely on such information and services in performance of services hereunder.
- 1.4 Give prompt written notice to the ENGINEER whenever the CLIENT observes or otherwise becomes aware of any defect in the Project or other event which may substantially affect the ENGINEER'S performance of services under this Agreement.

### 2.0 PAYMENTS TO THE ENGINEER:

- 2.1 Progress payments shall be made in proportion to the services rendered and as indicated within this Agreement and shall be due and owing upon the ENGINEER'S submittal of any invoice.
- 2.2 Hourly rates and reimbursable expenses shall be subject to periodic revision. In the event revisions are made during the lifetime of this Agreement, the increased or decreased hourly rates and Reimbursable Expenses shall apply to all remaining compensation for services performed by the ENGINEER where such rates provide the basis for the ENGINEER'S compensation.
- 2.3 Reimbursable expenses are in addition to ENGINEER'S compensation for services performed on an hourly basis and include expenditures made by the ENGINEER, his employees or his consultant(s) in the interest of the project.
- 2.4 If the CLIENT fails to make payments when due or otherwise is in breach of this agreement, the ENGINEER may suspend performance of services upon five (5) calendar days' notice to the CLIENT. The ENGINEER shall have no liability whatsoever to the CLIENT for any costs or damages as a result of such suspension caused by any breach of this Agreement by the CLIENT. Upon payment in full by the CLIENT, the ENGINEER shall resume services under this Agreement, the time schedule and compensation adjusted for the period of suspension plus any other reasonable time and expenses necessary for the ENGINEER to resume performance.



### 3.0 GENERAL PROVISIONS:

- 3.1 The CLIENT acknowledges that all drawings, specifications, computer data, and other work data of the ENGINEER for this Project are instruments of service for this Project only and shall remain the property of the ENGINEER whether the Project is completed or not. Nevertheless, the final Documents prepared under this Agreement shall become the property of the CLIENT upon completion of the services and payment in full of all monies due to the ENGINEER. The CLIENT shall not reuse or make modification to the Documents without the prior written authorization of the ENGINEER. The CLIENT agrees, to the fullest extent permitted by law, to defend, indemnify and hold harmless the ENGINEER, its officers, employees and subconsultants (collectively, ENGINEER) against any damages, liabilities or costs, including reasonable attorneys' fees and defense costs, arising from or allegedly arising from or in any way connected with the unauthorized reuse or modification of the documents by the CLIENT or any person or entity that acquires or obtains the Documents from or through the CLIENT without the written authorization of the ENGINEER.
- 3.2 Neither party to this Agreement shall transfer, sublet or assign any rights under or interest in this Agreement (including but not limited to monies that are due or monies that may be due) without prior written consent of the other party. Unless specifically stated to the contrary in any written consent to an assignment, no assignment will release or discharge the assignor from any duty or responsibility under this Agreement. Nothing contained in this paragraph shall prevent ENGINEER from employing such independent associates and consultants as ENGINEER may deem appropriate to assist in the performance of the services hereunder.
- 3.3 This Agreement represents the entire and integrated agreement between the ENGINEER and CLIENT and supersedes all prior negotiations, representations or agreements, either written or oral. The Agreement may be amended only by written instrument signed by both the CLIENT and the ENGINEER.
- 3.4 Neither party shall hold the other responsible for damages caused by acts of God, strikes, lockouts, accidents, or other events beyond the control of the other or the other's employees and agents.
- 3.5 In the event any provisions of this Agreement are held to be invalid or unenforceable, the remaining provisions shall be valid and binding on the parties. One or more waivers by either party of any provision, term, condition or covenant shall not be construed by the other party as a waiver of a subsequent breach of the same by the other party.
- 3.6 The ENGINEER is not responsible for design and construction review services relating to the Contractor's safety precautions or to means, methods, techniques, sequences or procedures required for the Contractor to perform his work. Omitted services include but are not limited to shoring, scaffolding, underpinning, temporary detainment of excavations, and any erection methods and temporary bracing.



Project Manager (Raleigh Bland) commented on the same day that the USACE concurs with this decision and will evaluate the compaction matter next year.

Unless sediment compaction testing effort is waived by respective regulatory and resources agencies prior to March of the next two years (ie – 2013 and 2014), CSE will perform compaction tests along the project area and adjacent unnourished reaches following standard protocols in accordance with the USACE permit requirements. If compaction tests in 2013 and 2014 are waived by regulatory and resource agencies, no work will be performed by CSE under Task 2 and the overall project budget will be reduced by the amounts given for this task in the proposed budget (page 10).

Compaction will be measured using a cone penetrometer and reported in cone penetrometer units (cpu). Measurements will be made at 500-ft intervals along the beach at two measurement stations: seaward edge of the dune line and middle of the dry-sand beach. At each measurement station, readings will be taken at 6 inches, 12 inches, and 18 inches (three replicates each). Approximately 100 transects (200 stations) at 500-ft spacing encompass the nourishment area. Six additional transects (12 stations) will be monitored along adjacent, unnourished sections of beach to provide a comparison with nourished areas. A total of ~1,900 readings will be attempted during each annual survey. [Note: In some cases, sediments may be too dense to allow readings at the deeper depths.] Measurements will be made in 2013 and 2014 in March prior to the start of turtle nesting season.

Compaction data will be compiled in spreadsheets, analyzed using standard statistics and compared against native compaction. CSE will provide recommendations for tilling if a majority of readings in the nourishment area exceed 500 cpu (standard threshold for tilling) or exceed the native beach compaction, whichever is higher. A data report will be submitted annually to USACE, USFWS, and NCWRC as required by the USACE project permit.

***Task 3) Bi-annual Sediment Collection and Testing – 2013 and 2015 — Per Beach  
Monitoring & Maintenance Plan Dated 25 August 2011 – Attachment 4, Item 3***

CSE will collect representative sediment samples from the project area and immediately adjacent unnourished sections of Nags Head and Bodie Island for purposes of documenting changes in sediment texture. A minimum of 14 transects (~5,000-ft spacing) with five (5) samples per transect will be collected bi-annually (in Years 2 and 4) between the toe of the dune and the low-tide wading zone. [Note: The Monitoring & Maintenance Plan calls for annual



sampling, but we assume that samples collected in connection with the environmental monitoring in Years 1 and 3 will be sufficient as a substitute.]

Samples will be split for granulometric and shell analysis and will be tested in the lab using standard ASTM procedures. Grain-size distribution will be based on 0.25 phi intervals (21 sieves in the sand-size range). Additional coarse sieves will be used for samples which indicate significant concentrations of coarse-shell or gravel material. Fines will be reported as a percentage of the total based on the quantity passing the #230 sieve (ie – <0.0625 mm diameter). The results will be composited by reach and will be compared with preproject and construction data by means of tables and graphs. Results of individual grain-size distributions will be reported using the method of moments as well as traditional graphic methods for calculating mean grain size and related sorting and skewness statistics.

#### ***Task 4) Annual Monitoring Report Preparation and Submission***

CSE proposes to prepare annual reports which will summarize the results of Tasks 1–3. The reports will address conditions in the nourishment project area between the foredune and inshore zone, and along adjacent unnourished areas. Monitoring data will be presented along with updated sand volume changes (nourishment volumes remaining) and a description of the overall performance of the project.

CSE will track the spread of nourishment sand in the longshore and cross-shore directions by comparing profile changes over time. Rates of change will be computed for representative reaches so as to identify developing favorable or unfavorable trends.

Each report will discuss beach erosion/accretion trends and rates along Nags Head and will include a summary of findings and recommendations for general maintenance. In addition to documenting the volume of sand remaining in the nourishment project area, each report will serve as a baseline condition for documentation of storm erosion losses (in the event of a major storm).

During Year 1, a brief interim report will be submitted soon after the first semi-annual monitoring survey in June 2012. The full report covering both 2012 surveys will be submitted in early 2013 following completion of the November 2012 condition survey.

CSE will complete an overflight of the project at least once per year for purposes of obtaining oblique aerial photography. Representative images will be included in each monitoring report



along with pre- and post-construction images to illustrate the general condition of the beach, or to highlight developing erosion trends such as localized project hot spots.

*[Note: CSE's overflight photos will be used to document the general conditions of the shoreline each year. CSE herein includes an allowance of \$12,000 in the proposed budget for one time orthophotography during the five-year monitoring period covered in the present proposal. Orthophotography is a spacially rectified image representing the earth's surface in the area of coverage. It can be imported and utilized in the creation of a Geographic Information System (GIS) and defined coordinate system. The most recent orthophotography for Nags Head was obtained on 8 November 2010 through Independent Mapping Consultants (Charlotte, NC) for a price of \$11,235.]*

Each annual report will be completed and submitted within 120 days after completion of all field data collection for the survey year. Task 4 provides professional time for liaison with Town of Nags Head officials and annual presentation of results to the Town Board (if requested). The annual report will include an executive summary written in an accessible style for the lay audience. In addition, CSE principals will prepare memoranda and presentation graphics for use by Town officials to help illustrate the beach changes and overall performance of the project.

## **SUMMARY**

In summary, this proposal and accompanying service agreement between the Town of Nags Head and CSE covers certain semi-annual and annual surveys over a five-year period (2012–2016) for purposes of monitoring the performance of the 2011 beach nourishment project. Five (5) annual reports will be submitted covering the results of each survey. The reports will include:

- Data collection methodology.
- Survey control information.
- Plotted profiles (including comparative profiles for selected dates).
- Profile volume analyses for representative lenses (contour intervals).
- Net volume changes by profile and reach.
- Calculation of nourishment volumes remaining in the project area.
- Results of sediment analyses and comparisons with earlier data.



- General notes on the beach condition and identification of developing trends associated with inlet shoal-bypassing event(s).
- Recommendations for dune enhancement and general beach maintenance.

The scope of services (Tasks 1–4) is per the Beach Monitoring & Maintenance Plan of 25 August 2011, which is a prerequisite for FEMA post-disaster beach restoration funds, and Special Condition #28 of the federal permit. CSE acknowledges that the scope of services proposed herein are to be performed at the discretion of the Town on an as-required basis, and believes that they are for the best interest of the Town.

All data will be carefully checked for QA/QC following industry standard protocols and will be made available to the Town for independent review and analysis by third-party observers if requested. The data will be archived with historical data and will be placed in a format accessible to the USACE, NCDENR, and FEMA for purposes of applying for emergency beach restoration funds in the event of a declared storm emergency.

**ESTIMATED SCHEDULE OF SERVICES**

Year 1	Mar 2012	Task 2	First annual sediment compaction tests and report <i>(completed under a separate agreement with the Town)</i>
	May–Jun 2012	Task 1a	Mobilization and first semi-annual beach monitoring
	Jul–Aug 2012	Task 1a	Interim memorandum report on the beach condition
	Nov 2012	Task 1a	Second semi-annual beach monitoring
	Feb–Mar 2013	Task 4	First annual monitoring report complete (covering 2012 semi-annual surveys)
Year 2	Mar 2013	Task 2	Second annual sediment compaction tests and report
	June 2013	Task 1b	Second annual beach monitoring
	June 2013	Tasks 3	First bi-annual sediment collection
	Sep–Oct 2013	Task 4	Second annual monitoring report complete (following annual survey)
Year 3	Mar 2014	Task 2	Third annual sediment compaction tests and report
	Jun 2014	Task 1b	Third annual beach monitoring
	Sep–Oct 2014	Task 4	Third annual monitoring report complete (following annual survey)
Year 4	June 2015	Task 1b	Fourth annual beach monitoring
	June 2015	Tasks 3	Second bi-annual sediment collection
	Sep–Oct 2015	Task 4	Fourth annual monitoring report complete (following annual survey)
Year 5	June 2016	Task 1b	Fifth annual beach monitoring
	Sep–Oct 2016	Task 4	Fifth annual monitoring report complete (following annual survey)



## SERVICES NOT INCLUDED

The present proposal does not include services associated with post-storm surveys or liaison and coordination with the Town and FEMA following a declared emergency. Such services will be provided upon request by the Town at the earliest possible time and upon approval of a separate amendment proposal, scope of services, and budget.

Other data collection and analysis services that CSE can provide, but that are not covered in the present scope of work, include the following.

- *Multi-beam bathymetry and LIDAR imagery for more comprehensive coverage of beach topography.* These services would add substantial costs to the monitoring which CSE does not believe are justified at present. Profiles at 500-ft spacing along straight beaches away from tidal inlets (presented in this proposal) are consistent with planning and monitoring studies by USACE and others, and provide sufficient detail for volumetric change analysis used by FEMA.
- *Post-project shoreline change modeling utilizing GENESIS or similar shoreline evolution models.* Such models require extensive wave data for implementation. The field measurements proposed herein will provide direct measures of project performance. Such data, if combined with wave data, can be used by others in future planning studies and academic research.
- *Sediment tracer studies and specialized analyses of longshore transport after nourishment.* The fate of nourishment sand can be inferred from volume changes upcoast and downcoast of the project area. Should the Town desire a more comprehensive analysis of longshore and cross-shore sediment transport, shoaling impacts at Oregon Inlet and modifications to the longshore transport regime following nourishment (including impacts of borrow areas on longshore transport), CSE can provide a proposal for these services.
- *Sediment sampling and testing* at the NCCRC standard of 13 samples per transect between the foredune and (~)-20-ft depth contour.
- *Periodic resurvey of the offshore borrow areas* to determine rates of infilling.

## PROJECT MANAGEMENT

The proposed scope of services will be performed under the supervision of Dr. HL Kaczowski (PE – NC #37281), who has served as project engineer. Dr. Kaczowski is a professional coastal engineer with 15 years of experience, including extensive work in shoreline change simulations, development of sediment budgets, and hydrodynamic modeling. Project manager for the proposed work will be Steven B Traynum (MS), coastal scientist, who has served as



assistant project engineer on the Nags Head nourishment project. Mr. Traynum has analyzed all historical survey data for Nags Head and has prepared data management programs in MATLAB for efficient handling of large databases. Dr. Kaczowski and Mr. Traynum will provide close liaison with Town officials during the period of monitoring under this proposal. Both Kaczowski and Traynum are principals in the firm. They will be assisted by CSE staff, including Trey Hair (CADD–graphics), Philip McKee (field data collection), and Diana Sangster (report production)— all of whom have served in key roles during the Nags Head beach nourishment project.

**PROPOSED BUDGET – FIVE (5) YEARS**

		<b>Fee Totals</b>				
<b>Task</b>	<b>Description</b>	<b>Year 1</b>	<b>Year 2</b>	<b>Year 3</b>	<b>Year 4</b>	<b>Year 5</b>
1a	Semi-Annual Beach Condition Surveys (2)	\$35,600				
1b	Annual Beach Condition Surveys (4)		\$21,880	\$21,880	\$21,880	\$21,880
2	Annual Sediment Compaction Tests (3)		\$3,860	\$3,860		
3	Bi-Annual Sediment Collection & Testing (2)		\$2,940		\$2,940	
4	Annual Monitoring Reports & Presentation (5)	\$28,840	\$28,840	\$28,840	\$28,840	\$28,840
	<b>Total Fees</b>	<b>\$64,440</b>	<b>\$57,520</b>	<b>\$54,580</b>	<b>\$53,660</b>	<b>\$50,720</b>
		<b>Five-Year Fee Total</b>				<b>\$280,920</b>
		<b>Reimbursable Totals</b>				
<b>Task</b>	<b>Description</b>	<b>Year 1</b>	<b>Year 2</b>	<b>Year 3</b>	<b>Year 4</b>	<b>Year 5</b>
1a	Semi-Annual Beach Condition Surveys (2)	\$31,910				
1b	Annual Beach Condition Surveys (4)		\$18,100	\$18,100	\$18,100	\$18,100
2	Annual Sediment Compaction Tests (3)		\$970	\$970		
3	Bi-Annual Sediment Collection & Testing (2)		\$4,650		\$4,650	
4	Annual Monitoring Reports & Presentation (5)	\$4,370	\$4,370	\$4,370	\$4,370	\$4,370
	<b>Total Reimbursables</b>	<b>\$36,280</b>	<b>\$28,090</b>	<b>\$23,440</b>	<b>\$27,120</b>	<b>\$22,470</b>
		<b>Five-Year Reimbursable Total</b>				<b>\$137,400</b>
	<b>Yearly Totals (Fees + Reimbursables)</b>	<b>\$100,720</b>	<b>\$85,610</b>	<b>78,020</b>	<b>\$80,780</b>	<b>\$73,190</b>
	Allowance for Orthophotography			\$12,000		
	<b>Five Year Project Total (excluding allowances)</b>					<b>\$418,320</b>



**FEE SCHEDULE** [Effective through 31 December 2012]

The fee for our 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 Coastal Science & Engineering 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 (5%) 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 \$500/day, RTK-GPS rental at \$400/day, fuel and dockage at cost, sediment testing at \$60/sample, and field supplies at cost. An allowance of \$12,000 per overflight is included to cover aerial orthophotos of the project area (care of Independent Mapping Consultants Inc, Charlotte, NC) one time during the course of the monitoring.

The proposed budget provides for five (5) years of monitoring (2012 through 2016) as outlined under Tasks 1 through 4 (inclusive). Year 1 (2012) will involve two semi-annual surveys (June and November) with one interim report and one annual report. Year 2 through Year 5 will involve one survey per year (June 2013, June 2014, June 2015, and June 2016) and one annual report each year. Beach compaction testing is required under the permits for three years (2012–2014).

<b>Personnel:</b>	<b>Staff Category</b>	<b>Hourly Rate</b>
	Principal	125.00
	Coastal Engineer/Project Manager	95.00
	Sr Technical Associate/Coastal Scientist	75.00
	Technical Staff (CAD)	65.00
	Tech–Field Assistants/Editorial–Admin	55.00

**Billing Schedule:** CSE will invoice monthly for services performed the prior month with itemization of direct expenses. CSE reserves the right to transfer funds between tasks so as to accomplish the work in an expeditious manner, provided total cost of services does not exceed the indicated budget.



**TOWN OF NAGS HEAD  
BOC ACTIONS  
March 21, 2012**

- 1.** Call to order - Mayor Oakes called the meeting to order at 7:00 p.m.
- 2.** Adoption of agenda – The Board passed a motion to adopt the agenda as presented.
- 3.** Audience Response - No one spoke during Audience Response.
- 4.** Beach Nourishment Monitoring/Maintenance Plan – The Board passed a motion to authorize the Town Manager to hire CS&E as the Town’s post nourishment monitoring and maintenance contractor and to exempt the project from the competitive selection process for the following reasons:
  - a) CS&E has intimate knowledge and familiarity with the Beach Nourishment Project (CS&E is the firm of record for design, permitting, and construction management for the project).
  - b) Based upon their previous participation in the project, CS&E possesses all pertinent background data with respect to pre and post project beach and near-shore physical profiles, off-shore borrow area, sediment and benthic data. A different firm could acquire this info from CS&E to evaluate and incorporate into their work scope, but that would take additional work to do so.
  - c) CS&E has demonstrated that they possess the ability and equipment to perform, coordinate and manage in-house and/or sub-contracted services for land surveying, bathymetric, geological, biological and scientific services specific and unique for coastal NC beach nourishment work.
  - d) CS&E has a demonstrated record, specific to this project, in dealing with all pertinent local/state/federal regulatory agencies.
- 5.** Gov-Ed Grants – The Board passed a motion to authorize staff to apply for the non-matching Government Access Channels Committee grants for the upgraded Board Room Sound System and for the joint documentary with UNC-CSI on the USS Huron.
- 6.** Town Attorney – Town Attorney Leidy requested a Closed Session to discuss Sansotta and Cherry, Inc. litigation and to consider the acquisition of real property.
- 7.** Town Manager – Town Manager Ogburn congratulated Outer Banks Hospital on its 10-year anniversary.
- 8.** Town Manager – Town Manager Ogburn provided an update on the Town’s ocean outfall extension project – the project is complete and cleanup is continuing – delineators from the surf to the dune identifying the exposed bolts will be done prior to Memorial Day.
- 9.** Town Manager – Beach Nourishment Project update indicates that the beach looks great and continues to build up; a meeting will take place between staff and CAMA tomorrow to discuss sand clean up on beach accesses.
- 10.** Town Manager - Town Manager Ogburn congratulated Captain Phillip Wolfe on his promotion.
- 11.** Mayor Pro Tem Remaley - Mayor Pro Tem Remaley confirmed attendance by several of the Board members at the Outer Banks Hospital reception to be held at Jennette’s Pier on Friday, March 23<sup>rd</sup>.

**12.** Comr. Walters – District signage - It was Board consensus that staff:

- Allocate the funds for the signage, i.e., move funds to Planning or Public Works departments
- Prioritize the district signage, i.e., Gallery Row (get with businesses), Bonnett Street, SNH
- Confirm location for each sign with NCDOT; at entrance to district is preferred
- Look into long-term maintenance/irrigation of plantings surrounding the signs
- Order signs one at a time after any concerns have been resolved

**13.** Comr. Walters – Colony Ridge improvements – Town Manager Ogburn reported that Town building inspectors met with the Colony Ridge parent company and discussed the following improvements to the facility: A new roof, wallpaper removal, replace sheetrock in resident rooms and bathrooms; Paint and install wall protection and refinish wardrobes - this will be done in the corridors also. Convert some of the semi-private rooms to make more private rooms available; The existing dining room will become the new rehabilitation gym; The lounge and therapy rooms will be opened up to make a new living/dining area; Redo the existing courtyard; The existing drive-thru canopy will be closed-in for additional administrative areas and a new lobby; A new drive-thru will be added for transport and arrival out of the weather; Construct an awning from the 500 Hall to this new area for transport of residents and for the convenience of staff. The parking lot will be resurfaced and restriped and dumpster pads will be enclosed and gated out of sight; The present storage/maintenance shop will be demolished.

Town Manager Ogburn is to verify that improvements are to be completed within 18 months – per the contract.

**14.** Comr. Cahoon - Comr. Cahoon encouraged everyone to support the Manteo High School theater program and attend its West Side Story production which takes place the next two (2) weekends.

**15.** Comr. Sadler - Comr. Sadler attended a DCTB meeting last week and it appears that the Town will receive its requested funds for 2012 fireworks; she also pointed out that it was reported that statistics show that one person out of nine in the nation are employed in the tourist industry.

**16.** Comr. Sadler – Comr. Sadler thanked Town Police, Fire, and Public Works departments for their help during and after yesterday's St. Patrick's Day Parade. She was surprised there weren't more incidents with the amount of traffic and people present.

**17.** Comr. Sadler - Comr. Sadler said that since the National Park Service is not planning on opening the beach access at the end of South Nags Head, she is concerned at not having an access for vehicles during beach driving season past the Juncos Street access in South Nags Head. Board members concurred with Town Manager Ogburn contacting the National Park Service and asking if they will allow the Town to maintain that southernmost access – it would also take some pressure off the beach itself.

**18.** Mayor Oakes - Mayor Oakes thanked Mike Kelly for the St. Patrick's Day Parade and he appreciated the Taste of the Beach which also took place this past weekend - he noted that Comr. Sadler served as a judge. Mayor Oakes stated that it was a great weekend with a lot of visitors in Town.

**19.** Closed Session – The Board passed a motion to enter Closed Session to receive advice from counsel on the Cherry, Inc. and Sansotta litigation and to discuss the following real property: Fin & Feather Motel site on the Causeway, Dowdy's Amusement Park on US 158, Dowdy's Race Track on the Beach Road, and the Gilliam Wood properties between the highways at milepost 13 - The time was 8:04 p.m.

**20.** Open Session - The Board re-entered Open Session at 8:56 p.m. Attorney Leidy reported that during Closed Session the Board did discuss the two litigation matters listed as well as the potential acquisition of property and gave instruction to the Town Manager - no other action was taken.

**21.** Adjournment - The Board passed a motion to adjourn at 8:58 p.m.

PUBLIC WORKS % KAREN HEAGY  
 TOWN OF NAGS HEAD  
 2200 LARK AVE  
 NAGS HEAD, NC 27959

12-02900

ORDER DATE: 05/01/12  
 REQUISITION NO: R1200802  
 DELIVERY DATE:  
 STATE CONTRACT:  
 F.O.B. TERMS: Destination

VENDOR #: COAST100

COASTAL SCIENCE & ENGINEERING  
 PO BOX 8056  
 COLUMBIA, SC 29202-8056

Phone: (803)799-8949 Fax: (803)799-9481

QTY/UNIT	DESCRIPTION	ACCOUNT NO.	UNIT PRICE	TOTAL COST
1.00	2012 yr 1 fees & reimbursables	C-42-385-0-5780-01 CAPITAL MONITORING	100,720.0000	100,720.00
1.00	2013 yr 2 fees & reimbursables	C-42-385-0-5780-01 CAPITAL MONITORING	85,610.0000	85,610.00
..00	2014 yr 3 fees & reimbursables	C-42-385-0-5780-01 CAPITAL MONITORING	78,020.0000	78,020.00
1.00	2015 yr 4 fees & reimbursables	C-42-385-0-5780-01 CAPITAL MONITORING	80,780.0000	80,780.00
1.00	2016 yr 5 fees & reimbursables	C-42-385-0-5780-01 CAPITAL MONITORING	73,190.0000	73,190.00
1.00	yr 3 ortho allowance if needed ALLOWANCE FOR ORTHOPHOTOGRAPHY IN YEAR THREE IF NEEDED	C-42-385-0-5780-01 CAPITAL MONITORING	12,000.0000	12,000.00
			TOTAL	430,320.00

Please contact the Town of Nags Head if the prices indicated are not correct. The Town of Nags Head will not be responsible for incorrect pricing after the Purchase Order is received by vendor for processing.