



# Ocean Exploration Education Content Review and Development Request for Proposals

2020

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*The National Marine Sanctuary Foundation (Foundation) in cooperation with NOAA’s Office of Oceanic Exploration and Research (OER) is seeking a consultant(s) to update ocean exploration educational products to best meet current educator resource needs.*

*Proposals to complete this statement of work are due by April 17, 2020. Applicants will be notified if they were selected to complete the statement of work by April 29 with work expected to start by May 4.*

## Statement of Work Part A: Overview and Products

### National Marine Sanctuary Foundation Overview

The National Marine Sanctuary Foundation, established in 2000, is the national non-profit partner of the National Marine Sanctuary System. Working in close partnership with the National Oceanic and Atmospheric Administration (NOAA), the trustee of marine sanctuaries and two marine monuments, the Foundation supports scientific research, promotes community stewardship of our environment, and fosters the next generation of ocean guardians. Through our work with national marine sanctuaries and monuments, we protect species, conserve ecosystems and preserve America’s maritime heritage, in part through public outreach and education.

## **Office of Ocean Exploration and Research Overview**

The NOAA Office of Ocean Exploration and Research (OER) is the only federal organization dedicated to ocean exploration. By using unique capabilities in terms of personnel, technology, infrastructure, and exploration missions, OER is reducing unknowns in deep-ocean areas and providing high-value environmental intelligence needed by NOAA and the nation to address both current and emerging science and management needs.

In conjunction with ocean science expeditions, OER is constantly reaching out in new ways to stakeholders to improve the literacy of learners of all ages with respect to ocean issues. We strive to engage educators and students in learning more about ocean exploration and how they can use science, modern technology, and engineering practices associated with exploring the ocean in their classrooms. This requires high-quality, effective information and resource sharing between ocean explorers and America's teachers to provide a variety of learning and teaching tools focused on the science of ocean exploration and discovery.

## **Exploration Education Products Overview**

Since the NOAA ocean exploration program was established in 2002, the office has operated an education program to promote ocean literacy and to provide educators with resources about ocean exploration for use in the classroom. The NOAA Ocean Exploration Act directs NOAA to establish a “coordinated national ocean exploration program” and “seek to facilitate coordination of...outreach and education programs to improve public understanding of ocean and coastal resources.” NOAA Office of Ocean Exploration and Research (OER) strategic plan includes a goal to “encourage the next generation of ocean explorers, scientists, and engineers” through education.

In May 2018, the Education Working Group of the Ocean Exploration Advisory Board released recommendations for updated approaches to achieving education program goals. One of the recommendations of this working group was to improve and enhance access to ocean exploration educational materials. As a result, the Office of Ocean Exploration and Research, Ocean Exploration Trust (OET) and Schmidt Ocean Institute (SOI) aim to reorganize current ocean exploration education content into a cooperative website framework built around science and ocean themes that is easily searchable, addresses key ocean related phenomena and encourages and supports three-dimensional approaches to teaching and learning as described in the *Framework for K-12 Education*.

### *Project objective:*

The objective of this project is to build key education elements by topic to feed a new ocean exploration website using and adapting content currently within the OER Ocean Explorer website and Education Theme pages, and curating education resources from Ocean Exploration Trust and Schmidt Ocean Institute. This work will include expanding, harvesting and restructuring OER content to best meet current needs of classroom educators. The created materials should enable educators to easily access topical resources and activities that support their curriculum requirements and inspire ocean literacy. These resources will be distributed to educators via social media, professional development opportunities, and available free online to all teachers interested in ocean and Great Lakes education.

## Existing Products

- NOAA OER Education [theme pages](#) are designed to provide the best of what the OceanExplorer.NOAA.gov website has to offer for educators on a number of popular ocean science topics. Each theme page provides links to content essays, lessons, multimedia interactive activities, career profiles, and information on associated past expeditions. Content will be available on these subjects through the 2019 OER expedition year upon beginning of this proposed work. Nine theme pages will provide the initial foundation for the work outlined in this RFP, with two additional topics added.
- OER ocean exploration education resources include Expedition Education Modules, lessons and activities, fact sheets and much more. These materials can be found [here](#).
- Ocean Exploration Trust has 31 STEM Learning Modules and 60+ activities, teaching graphics and animations and expedition video playlists within a [Digital Resource Library](#).
- Schmidt Ocean Institute [education materials](#) include an online tour of the SOI R/V *Falkor*, [ship status page with underway data](#), three middle school and high school lesson plans, a scientist Q & A forum, career profiles, information on how we study the ocean and why we sample it, as well as an [image and video gallery](#). Full ROV dives including highlight videos, weekly video updates, and teaching animations are available through the [@SchmidtOcean YouTube page](#).

## Statement of Work Part B: Tasks and Timeline

### Tasks

As noted in Part A above, the National Marine Sanctuary Foundation seeks a consultant or team of consultants to work with project leads at OER and OET and SOI education staff to create the content bones for a fresh ocean exploration education resource website for educators. For this contract, the selected consultant will curate and create education content to build out key ocean science topics for the framework of a website that is easily searchable, addresses ocean related phenomena and encourages and supports three-dimensional approaches to teaching and learning as described in the *Framework for K-12 Education*.

The purpose of the tasks is content-only; the Foundation and OER have graphic design and web development resources available. However, the selected consultant may be asked to work with graphic and web teams to ensure content is presented consistently and appropriately.

### Task 1. Develop the education products/content

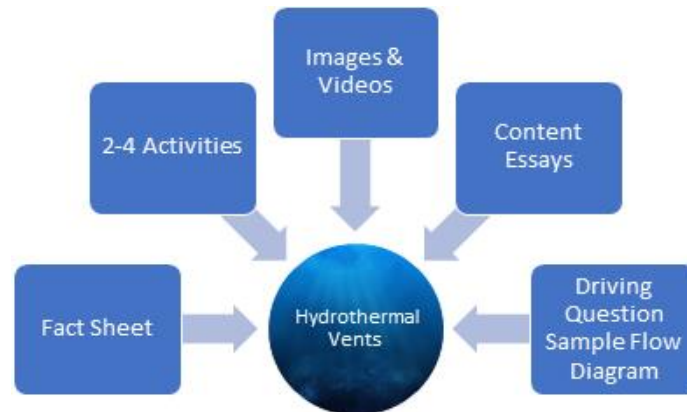
In total, this contract will produce key education resource elements for 11 themes.

Seabed Mapping, Remotely Operated Vehicles, Hydrothermal Vents; Seamounts; Cold Seeps; Deep-sea Corals; Bioluminescence; Archaeology; Deep-sea Canyons; Underwater Volcanoes (to be separated from current OER Vents page); Arctic.

This may develop into further topics for a future Statement of Work (i.e. Water Column (chemical sensors; life in the water column), Pressure, Biodiversity, Adaptations, Brine Pools, etc.).

Subject to consultation with RFP contractor, within this new website, content within these 11 topics will be able to be accessed via multiple search avenues, the broadest being the NGSS topic categories: Physical Sciences, Life Sciences, Earth and Space Sciences, and Engineering Design, along with English and Humanities, Math, and Visual Arts.

Elements for development for each topic are depicted in this sample illustration:



1. Fact Sheet on Topic

- One-page fact sheet for educators on the topic, using and enhancing current content available.

2. Activities (2-4 depending on topic) supporting NGSS 3-dimensional instruction and the Ocean Literacy Essential Principles and Fundamental Concepts. Under the guidance of the OER, OET and SOI education teams:

- Curate activities from older OER lessons and rewrite them with an eye toward 21st century instruction, NGSS and 3-dimensional learning and the Ocean Literacy Principles.
- Harvest OET and SOI activities to include as currently developed.
- Develop new activities if needed.

3. Images and Videos

- Curate the best images and videos from OER, OET and SOI to support classroom education on the topic.

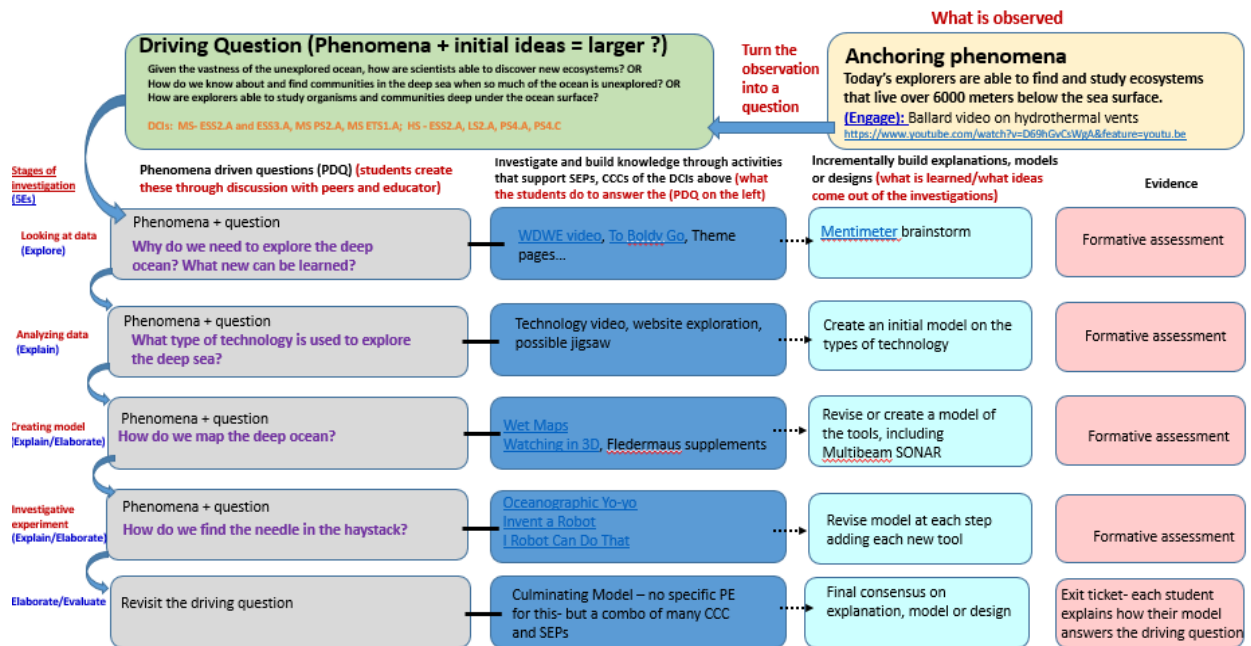
4. Science Essays

- Curate the best science content essays from OER, OET and SOI to support classroom education on the topic.

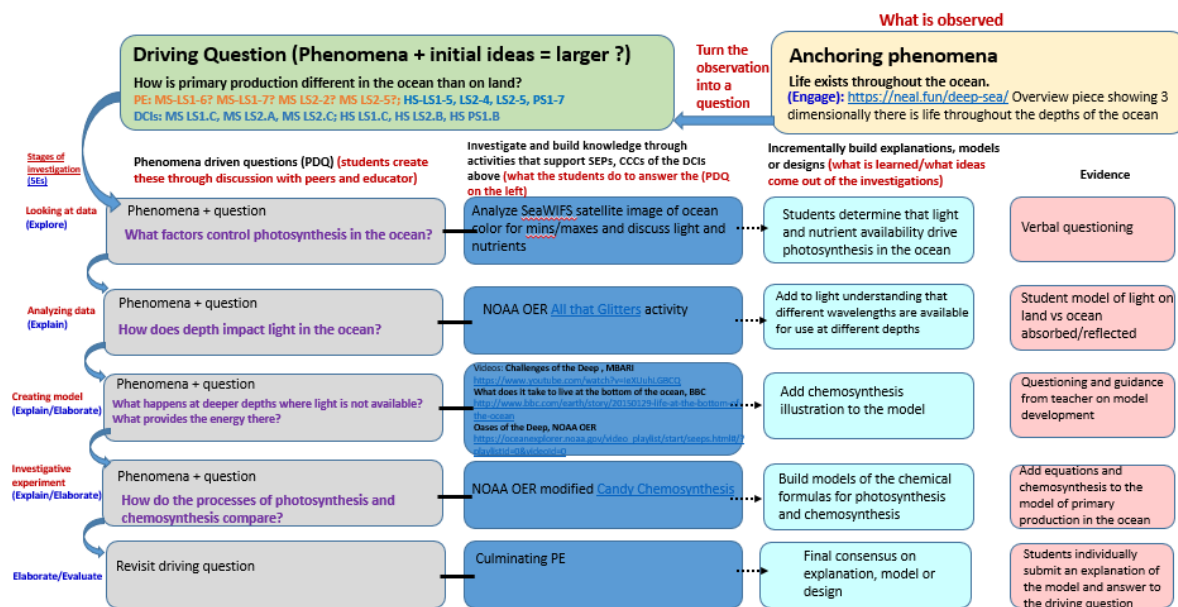
5. Anchoring phenomenon(a) / driving question flow diagram

- Identify anchoring phenomena and associated flow of driving questions on each specific topic and build out flow diagram (samples provided below). These flow diagrams will be provided as resource samples, designed to encourage and support educators to use OE materials and incorporate a more student-led instructional approach.

Draft flow diagram sample currently being tested in 7-hour OER onsite educator professional development workshops, *Exploring the Deep Ocean with NOAA*:



Draft flow diagram for primary production in the ocean to support topical package on cold seeps and hydrothermal vents:



**This RFP will include an explanatory webinar scheduled for April 7 at 4 PM ET. All interested parties are encouraged to attend and ask any necessary clarifying questions at that time. Join Zoom Meeting: <https://zoom.us/j/819953915>; Meeting ID: 819 953 915.**

## **Project Phases and Schedule**

This project is articulated in phases below. Anticipated full project completion date is TBD but expected to be completed in a one-year timeframe. OER staff is located in Silver Spring, MD as well as remotely around the country. OET and SOI staff are located across the country. The consultant will work remotely and communicate with OER, OET, SOI and Foundation staff through video meetings, conference calls, email, and/or online collaborative tools at least bi-weekly or when requested by either party.

Start date: May 4, 2020 (some flexibility)

### Phase 1: Landscape Familiarity:

Within first 2 weeks of award-

- Introductory meeting with OER Education staff re: production and agreement on full SOW.
- Establish familiarity with OER website content, particularly content housed in the Education Theme pages.
- Establish familiarity with OET and SOI education materials.
- Meet with OER Education staff to discuss approach.

### Phase 2: Activity Rework and Design:

Within first month of award-

In cooperation with the OER Education team, select one OER lesson, pull the associated activity and use this activity to provide a sample rework and layout of content designed to support the NGSS and three-dimensional teaching and learning.

### Phase 3: Single Topic Framework Prototype:

Within first two months of award-

Begin building content to feed structure of a new, fluid ocean exploration education resource website by developing the first of 11 content packages in consultation with the OER, OET and SOI education teams.

Topic 1:

- Fact sheet
- Activity curating, redesign and possible development (2-4)
- Image and video curating and selection
- Essay curating and selection
- Identify key phenomenon/a and build an Anchoring Phenomena and Driving Question flow chart on selected topic

Working closely with the OER education team, build out the five elements described on pgs. 4-5, noting that some elements, such as activity redesign and driving question flow chart work may take more time than other elements.

### Phase 4: Build Out Content within Framework for each Topic:

End date negotiable with all work to be completed by June 2021. Proposer should indicate a staged approach with an estimated timeline for development of each topic-

Build out the rest of the content packages. Order of production TBD. Full list of packages:

- Seafloor Mapping
- Remotely Operated Vehicles
- Seamounts
- Cold Seeps
- Deep Sea Corals
- Bioluminescence
- Archaeology
- Underwater Volcanoes
- Deep Sea Canyons
- Arctic

Additionally, this proposal should include travel costs for one potential face to face meeting with OER education team.

### **Budget**

Please submit with your proposal a line item budget with cost per phase, with a price presentation based on a cost-per-deliverable basis. Please use a fully blended rate which includes overhead and travel costs as noted.

### **Application Requirements**

***Proposal Due April 17, 2020 to [rfp@marinesanctuary.org](mailto:rfp@marinesanctuary.org) with the subject Ocean Exploration Education Topical Framework Packages.***

Proposals to meet the statement of work as outlined below should be no longer than four pages. C/V and supplemental materials do not count towards the four-page limit.

Please submit the following:

- CV
- Project Description - no more than 4 pages
  - Explanation of how you would meet the statement of work, including:
    - Brief explanation of you/your organizations experience in formal/informal education and/or marine education
    - Explanation of familiarity or experience creating products which support the Next Generation Science Standards (NGSS), three-dimensional teaching and learning, the 5 Es, the Ocean Literacy Essential Principles and other standards
    - Explanation of knowledge and familiarity with national marine sanctuaries and ocean exploration science content and resources
- Budget (see description above)
- Supplemental Materials
  - Example of other lessons/lesson plans/activities/resources developed by you or your organization
  - Education writing samples
  - Three professional references

## **Project Management**

### Reporting

Consulting team will facilitate bi-weekly virtual check ins with the OER Education Team and periodic consultation with OET and SOI education staff. OER education team members will approve any scope of work changes and adjustments and sign off on deliverables. OER education team will facilitate the adoption plan and maintain resources once the project period is completed.

### Payment

Invoices will be processed through the National Marine Sanctuary Foundation after each phase is complete. Note that the selected contract will be supported through funds from federal award NA19OAR0110405. All funds received by the selected contractor are considered federally sourced funds.

### Terms

All materials, activities and products are considered work-for-hire and will be National Marine Sanctuary Foundation and NOAA Ocean Exploration and Research products shared exclusively with OER and contain Foundation and NOAA OER logos and branding (except for materials from partner organizations, including Ocean Exploration Trust and Schmidt Ocean Institute). All materials will be public domain and cannot be used for commercial purposes.