ANNOUNCEMENT OF FEDERAL FUNDING OPPORTUNITY

EXECUTIVE SUMMARY

Federal Agency Name(s): Office of the Under Secretary (USEC), National Oceanic and Atmospheric Administration (NOAA), Department of Commerce

Funding Opportunity Title: Environmental Literacy Grants for Formal K-12 Education

Announcement Type: Initial

Funding Opportunity Number: NOAA-SEC-OED-2011-2002608

Catalog of Federal Domestic Assistance (CFDA) Number: 11.008, NOAA Mission-Related Education Awards

Dates: The **deadline for pre-proposals** is **5:00 PM EDT September 8, 2010**. The **deadline for full applications** is **5:00 PM EST** on **January 12, 2011**. Applications submitted through Grants.gov are automatically date/time stamped when they are validated and submitted to the Agency. Applicants are advised to provide hard copy applications to an expedited shipping service by the deadline and to retain proof of this submission. **PLEASE NOTE:** When submitting through Grants.gov, you will receive 2 emails. An initial email will be sent to confirm your attempt to submit a proposal. This is NOT a confirmation of acceptance of your application. It may take Grants.gov up to 48 hours to validate or reject the application and send you a second email. Please keep this in mind in developing your submission timeline.

An informational teleconference/webinar with the program officers will occur on July 28, 2010, 3:00 to 5:00 PM EDT. Interested applicants should register by contacting oed.grants@noaa.gov and include in the Subject line of the email: "Interested in FFO Teleconference - Need Details" and provide the interested parties' name, institution and telephone number in the body of the email. Whenever possible, people from the same institution should try to call in through the same phone line.

Funding Opportunity Description: The goal of this funding opportunity is to support K-12 education projects that advance inquiry-based Earth System Science learning and stewardship directly tied to the school curriculum, with a particular interest in increasing climate literacy. To address this goal, this solicitation will support service-learning and professional development projects related to NOAA's mission in the areas of ocean, coastal, Great Lakes, weather and climate sciences and stewardship. A successful project will catalyze change in K-12 education at the state, regional and national level through development of new programs and/or revision of existing programs to improve the environmental literacy of K-12 teachers and their students. A successful project will also leverage NOAA assets, although use of non-NOAA assets is also encouraged. The target audiences for this funding opportunity are K-12 students, pre- and in-

service teachers, and providers of pre-service teacher education and in-service teacher professional development. There is a special interest in projects that address reaching groups traditionally underserved and/or underrepresented in Earth System science. One group that has been identified as underserved is elementary level teachers and students.

This funding opportunity has two priorities, which are equal in their importance for funding. Priority 1 is for innovative proof-of-concept projects that are one to two years in duration, for a total minimum request of $200,000 and a total maximum request of $500,000. Priority 2 is for full-scale implementation of educational projects that are three to five years in duration, for a total minimum request of $500,001 and a total maximum request of $1,500,000. This FFO meets NOAA's Mission Support goal to provide critical support for NOAA's mission. It is anticipated that awards under this announcement will be made by June 30, 2011 and that projects funded under this announcement will have a start date no earlier than July 1, 2011. **Note:** a PDF version of this announcement is available at http://www.oesd.noaa.gov/funding_opps.html.

FULL ANNOUNCEMENT TEXT

I. Funding Opportunity Description

A. Program Objective

1. Overview:

The National Oceanic and Atmospheric Administration's (NOAA) Environmental Literacy Grants program provides support to improve environmental literacy among our Nation's citizens and to promote a diverse workforce in ocean, coastal, Great Lakes, weather, and climate sciences, with the goal of encouraging stewardship and increasing informed decision making for the Nation. The program supports Science, Technology, Engineering, and Mathematics (STEM) education, through a focus on Earth Systems Science and Environmental Education. Improving the public's environmental literacy, its understanding of how our Nation's natural resources are managed, and its understanding of the importance of these resources is critical to meeting the Agency's stewardship mission. To address this mission and to create a pipeline to meet future workforce needs, NOAA engages in and supports formal, informal, and nonformal education activities at local, state, regional, and national levels. NOAA has a particular interest in reaching communities that are underrepresented and underserved in STEM fields.

This solicitation of the Environmental Literacy Grants Program supports Goals 1 and 2 of NOAA's 2009-2029 Education Strategic Plan (http://www.education.noaa.gov/plan), with a specific focus on:

- **Outcome 1.2:** Educators understand and use environmental literacy principles.
- **Outcome 1.3:** Educators, students, and/or the public collect and use ocean, coastal, Great Lakes, weather, and climate data in inquiry and evidence-based activities.
- **Outcome 2.1:** A diverse and qualified pool of applicants, particularly from underrepresented groups, pursues student and professional opportunities for career development in NOAA mission-critical disciplines.

This funding opportunity also supports the President's Educate to Innovate campaign (http://www.whitehouse.gov/issues/education/educate-innovate), the President's Strategy for American Innovation (http://www.whitehouse.gov/assets/documents/SEPT_20__Innovation_Whitepaper_FINAL.pdf), and the Serve America Act (http://frwebgate.access.gpo.gov/cgi-bin/getdoc.cgi?dbname=110_cong_bills&docid=f:s3487is.txt.pdf).

The goal of this funding opportunity is to support K-12 education projects that advance inquiry-based Earth System Science learning and stewardship directly tied to the school curriculum, with particular interest in increasing climate literacy. To address this goal, this solicitation will support service-learning and professional development projects related to NOAA's mission in the areas of ocean, coastal, Great Lakes, weather and climate sciences and stewardship.

A successful project will catalyze change in K-12 education through development of new programs and/or revision of existing programs to increase the environmental literacy of K-12 teachers and their students. A successful project will also leverage NOAA assets (see section I.A.8), although use of non-NOAA assets is encouraged. (**Please note:** although NOAA programs and offices can receive a small portion of funds associated with a project, the principal benefit of the project cannot be to support NOAA.)

The target audiences for this funding opportunity are K-12 students, pre- and in-service teachers, and providers of pre-service teacher education and in-service teacher professional development. There is a special interest in projects that address reaching groups traditionally underserved and/or underrepresented in Earth System science (see Section I.A.2). One group that has been identified as underserved is elementary level teachers and students (Center on Education Policy, 2007). Therefore, there is a special interest in projects that address the STEM needs in elementary-level education.

2: Description of Required Activities:

All projects must focus on at least one of the following formal K-12 education activities:

- Service-learning projects for K-12 students that promote environmental literacy and stewardship related to the ocean, coasts, Great Lakes, weather and/or climate.
- Professional development for pre-service teachers, for in-service teachers, or to enhance the capacity of professional development providers to improve participants' pedagogical content knowledge of Earth System Science. Professional development projects should also lead to an increased stewardship ethic.

Service-learning projects:

Service-learning is a priority of President Obama's Administration and is called out in its Race to the Top campaign as one of the "enrichment activities that contributes to a well-rounded education." Research cited by the Corporation for National and Community Service shows that student attendance, classroom engagement, and academic achievement

are improved when students participate in high-quality service learning programs (http://www.nationalservice.gov/pdf/factsheet_lsa.pdf). All service-learning projects for students (funded through this solicitation) should be action-oriented and clearly integrated into the curriculum such that they reinforce learning taking place in the classroom. These projects could also include professional development for educators that focuses on service-learning implementation and design. Partnerships with and among service-learning organizations are encouraged. Projects should incorporate best practices in service-learning (e.g., Eyler and Giles, *Where's the Learning in Service-Learning?*, 1999; The National Youth Leadership Council, *K-12 Service-Learning Standards for Quality Practice*, 2008). Among these best practices, service learning experiences should:

- Be used intentionally as an instructional strategy to meet learning goals and/or content standards.
- Be positive, meaningful, and real to the students.
- Promote skills associated with teamwork, community involvement, and citizenship.
- Address complex problems in complex settings.
- Have sufficient duration and intensity to meet needs and outcomes.
- Promote problem-solving and critical thinking by requiring students to gain knowledge of the specific context of their service-learning activity and community challenges.
- Promote deeper learning through immediate and uncontrived results.
- Prompt deep thinking and analysis about oneself and one's relationship to society.
- Generate emotional consequences, challenge views, and support social, emotional, and cognitive learning and development.

Additional information about service-learning can be found at:
http://www.servicelearning.org/;
http://www.newhorizons.org/strategies/service_learning/front_service.htm;
http://www.service-learningpartnership.org/site/PageServer?pagename=SL_index.

Professional development projects:

A guiding principle of President Obama's plan for education is that "Teachers are the single most important resource to a child's learning." The President plans to "invest in innovative strategies to help teachers to improve student outcomes" (http://www.whitehouse.gov/issues/education). Professional development projects proposed

for this funding opportunity should focus on improving student-learning and include job-embedded components that provide practical application and implementation of the strategies and content learned. Projects focusing on pre-service education of teachers should include active support from colleges of education or other entities that provide pre-service teacher education. Projects focusing on in-service teacher professional development should include active support from state departments of education and/or school district administration, as appropriate. Online teacher professional development should make use of a hybrid model incorporating distance learning with face-to-face components. Programming should be designed carefully to have impact beyond the individual participants and the students they themselves teach. All professional development projects should incorporate best practices for in-service and pre-service educator professional development (e.g., National Research Council, *Taking Science to School: Learning and Teaching Science in Grades K-8*, 2007; National Research Council, *Ready, Set, Science*, 2008; Wei, *et. al.*, *Professional Learning in the Learning Profession: A Status Report on Teacher Development in the United States and Abroad*, 2009). Among these best practices, professional development for teachers should:

- Be sustained over substantial contact hours and spread over a period of months to several years.
- Be intensive and include application of knowledge to teacher planning and instruction.
- Provide adequate time during the school day and throughout the year for intensive work and regular reflection on practice.
- Address concrete and everyday challenges of teaching and learning for a specific subject.
- Focus on improving student learning in a specific content area that is grounded in the curriculum taught.
- Focus on strengths and needs of learners in the subject matter and on the evidence about what works, drawn from research and clinical experience.
- Build strong working relationships among teachers, emphasizing collective participation of groups of teachers, which includes opportunities for teachers from the same school, department, or grade level.
- Include school-based and job-embedded support for teachers to evaluate student work, design and refine of study units, and observe and reflect on colleagues' lessons.
- Provide teachers with a coherent view of the instructional system (e.g., connections between content and performance standards, instructional material and state

assessments, school and district goals, and the development of a professional community).

- Require active support of school and district leaders.

For this Federal Funding Opportunity there is special interest in projects that specifically address reaching groups traditionally underrepresented in STEM fields, particularly those fields critical to NOAA's mission and Earth System Science. The National Research Council (2009) notes several challenges to reaching these underrepresented groups including: (1) inadequate science education in the majority of elementary schools, especially those serving low-income and rural areas; and (2) female students often do not identify with science or science careers. In addition, the rate of participation among populations of color in the atmospheric and oceanic sciences is lower than in many other sciences (National Research Council, 2010). The President's Race to the Top campaign aims to reinvigorate STEM teaching in classrooms and to support advanced learning in these subjects, especially for women, girls, and other underrepresented groups. To engage underrepresented and underserved groups, projects should incorporate what is known about best practices for broadening participation in STEM fields (e.g., BEST 2004; Levine, et al. 2009). A listing of groups traditionally underrepresented in STEM fields can be found in the 2010 NSF Science and Engineering Indicators Report at http://www.nsf.gov/statistics/seind10/pdf/c03.pdf.

For this solicitation, there is also particular interest in projects that address elementary school populations. Research shows that children in early grades are capable of surprisingly sophisticated scientific thinking (National Research Council, 2007). Given their reasoning abilities and understanding of knowledge, children can engage in and benefit from instruction that incorporates relatively complex scientific practices from the beginning of their schooling. Student interest in STEM fields can begin in childhood and be cultivated through effective educational opportunities along the STEM career path (Tai, et al., 2006). Unfortunately, mounting evidence shows a reduction in time spent on science education in elementary school since the passage of No Child Left Behind (Center on Education Policy, 2007; Dorph, et al., 2007; Griffith and Scharmann, 2008; National Research Council, 2010). This problem is particularly acute for Title I schools, in which at least 40% of the student body comes from low-income families (National Research Council, 2010). To address this issue, we encourage projects that incorporate Earth Systems Science and stewardship into elementary school programs, particularly in low-income areas. Projects that integrate science learning with reading and math instruction are also of interest.

All projects, regardless of whether they involve service learning and/or professional development, should include realistic and relevant inquiry-based learning experiences. Successful projects will not merely increase knowledge of scientific phenomena, but also will provide opportunities for the application of that knowledge to environmental issues relevant to the target audience. Projects should be designed to generate and sustain a

network of participants that allows for rapid, but sustainable program growth during and/or beyond the project period. This includes involving school district administrators in service-learning and/or in in-service teacher professional development to help enhance the adoption and sustainability of the projects. Electronic copies of all materials and/or products must be provided to the NOAA Outreach Office for distribution to NOAA's education networks. All projects should employ the relevant strategies and address at least one of the goals articulated in the NOAA Education Plan (www.oesd.noaa.gov/NOAA_Ed_Plan.pdf). For additional characteristics of a successful project, please see section I.A.4.

Applications that propose the expansion or enhancement of an existing project through activities described in the above paragraphs are eligible. However, the applicant must explicitly demonstrate the significant accomplishments of the previous award and how the project is significantly improved over, and builds off of, the previous award. Applicants are also encouraged to leverage the work of projects previously funded by NOAA's Environmental Literacy Grants program. A list of previously funded projects is available at http://www.oesd.noaa.gov/elg/elg_projects.html.

Applications primarily seeking to develop new instructional materials or curricula for K-12 education are not sought in this solicitation. However projects that include development of instructional materials/curricula (tied to Ocean Literacy, Atmospheric Science Literacy, and/or Climate Literacy frameworks) as a part of a PD or service-learning project will be considered. Projects involving the development of new, or modification of existing, curricula and related instructional materials should be able to demonstrate how they will address the relevant state and national standards (including the American Association for the Advancement of Science Benchmarks for Science, http://www.project2061.org/publications/bsl/), support state or national education assessments, and be disseminated at the state or multi-state level.

3. Other Funding Opportunities

Please be aware that there are other funding opportunities that may be a more appropriate source of support for your project. NOAA's Office of Education offers the Environmental Literacy Grant (ELG) program annually. Activities for this current solicitation should be designed to address a particular audience in K-12 formal education. NOAA is also supportive of formal K-12 science education projects that complement informal/nonformal education. However, projects funded through this opportunity shall focus on activities that are linked to school curricula or K-12 teacher professional development and/or pre-service teacher education. Projects with activities focusing primarily on informal/nonformal education will not be considered for this funding opportunity. The next ELG funding announcement will include support for informal/nonformal science education projects and should be issued in approximately June 2011, with awards resulting from that announcement funded in FY2012.

NOAA also offers K-12 education-related granting opportunities through the Bay Watershed Education and Training (B-WET) program, which provides funding to six specific regions: California, Chesapeake Bay, Gulf of Mexico, Hawaii, New England, and Pacific Northwest. The B-WET funding opportunities emphasize outdoor experiential environmental education focused on watersheds and highlighting specific regional priorities. Any applications focusing on B-WET program goals in these regions will not be considered for this Federal Funding Opportunity and should be submitted in response to the relevant regional federal funding opportunity (announcement dates vary by region). Please refer to the B-WET website (http://www.oesd.noaa.gov/BWET/) for further information.

In conjunction with this funding opportunity, the National Science Foundation (NSF) and National Aeronautics and Space Administration (NASA) also offer funding for projects focusing on climate change education. Please see NSF's current solicitation: (http://www.nsf.gov/pubs/2010/nsf10542/nsf10542.pdf) and NASA's solicitation: (http://nspires.nasaprs.com/, under Global Climate Change Education). It is recommended that you review these other solicitations and select the funding source that is most appropriate for your project type.

4. Characteristics of a Successful Project

Successful projects under this funding opportunity will exhibit as many of the following characteristics as are relevant:

- Increase participant awareness, understanding, and appreciation of the interconnectedness of people and the environment, especially with reference to climate change.
- Assist participants in increasing their stewardship behaviors.
- Align activities to the principles in:
    - "Climate Literacy: The Essential Principles of Climate Science" (http://www.noaa.gov/climateliteracy.html).
    - "Ocean Literacy: Essential Principles of Ocean Sciences" (http://www.coexploration.org/oceanliteracy/documents/OceanLitConcepts_10.11.05.pdf).
    - "Essential Principles and Fundamental Concepts for Atmospheric Science Literacy" (http://eo.ucar.edu/asl/pdfs/ASLbrochureFINAL.pdf)
    - Relevant strand maps in the American Association for the Advancement of Science Atlas of Science Literacy

(http://www.project2061.org/publications/atlas/).

- Base project's approach on established best practices (see Section I.A.2).
- Be based on a needs assessment and have clearly stated outcomes and objectives that are measurable and appropriate to the target audience(s) (see Project Evaluation below for further guidance).
- Use problem-based learning methods (see definition in Section I.A.8).
- Engage members of populations traditionally underrepresented and underserved in STEM fields, especially elementary education populations, and provide appropriate contexts for their learning and strategies to support their participation. A listing of groups traditionally underrepresented in STEM fields can be found in the 2010 NSF Science and Engineering Indicators Report at http://www.nsf.gov/statistics/seind10/pdf/c03.pdf.
- Involve collaborations/partnerships with other institutions/organizations and/or networks of institutions/organizations. Partnerships with science institutions that will be able to provide scientific knowledge and expertise to inform the development of program content are strongly encouraged. Additionally, partnerships with NOAA programs and personnel to ensure that NOAA assets are leveraged in the execution of project activities are also strongly encouraged whenever possible. (**Please note:** although NOAA programs and offices can receive a small portion of funds associated with a project, the principal benefit of the project cannot be to support NOAA.)
- Incorporate the highest quality scientific research, data, and models related to ocean, coastal, Great Lakes, weather, and climate sciences, from any source and incorporate NOAA products wherever possible, including use of NOAA's Science On a Sphere and other spherical display systems.
- Incorporate findings from these recent major reports on climate change and stewardship: *Global Climate Change: Impacts in the United States*, http://www.globalchange.gov/publications/reports/scientific-assessments/us-impacts and *Increasing Capacity for Stewardship of Oceans and Coasts: A Priority for the 21st Century*, http://www.nap.edu/catalog.php?record_id=12043.
- Deliver cutting-edge scientific content and data directly to the target audiences.
- Involve school district administrations substantially.
- Be willing to share information on project impacts and design with NOAA and the broader STEM and environmental education communities.

– Be designed for sustainability beyond the project period, if applying to Priority 2.

5. Target Audiences:

– Student audiences: K-12 students, especially those from underserved and underrepresented groups in Earth Sciences (see definition in Section I.A.8). Home-school students are also an eligible student audience.

– Professional audiences: K-12 formal education professionals, pre-service K-12 teachers, and providers of professional development for K-12 teachers.

6. Project Evaluation:

Project activities should be evaluated for their effectiveness in meeting the proposed project goals and objectives as well as the goal of this funding program, which is to advance inquiry-based Earth System Science learning and stewardship directly tied to the school curriculum. Projects should be based on an existing front-end evaluation/needs assessment. Plans for formative and summative project evaluations should be included and be well constructed and use best practices for evaluating these types of projects. Discussion of the needs assessment and formative and summative evaluations should be included in both the project description and budget sections. Lastly, potential impact of the project beyond the award period should also be described.

Project evaluation should be handled by external professional evaluators or by internal staff who have significant experience with evaluation and are not otherwise substantively involved with the project. Project evaluation should include assessment of changes in the target audiences' attitudes, knowledge, awareness, and/or behaviors as a result of the activities undertaken.

To further inform the broad field of K-12 science education about what was learned from the project, principal investigators should consider sharing evaluation results and project impacts through presentations and peer-reviewed publications of relevant professional organizations (e.g., Association for Science Teacher Education, North American Association for Environmental Education, National Association of Research in Science Teaching, National Marine Educators Association, and National Science Teachers Association) and summative evaluation reports shall be provided to NOAA. Principal Investigators may be asked to participate in a program-wide evaluation at some point during the project implementation.

7. Award Dates and Mission Goal:

It is anticipated that awards under this announcement will be made by June 30, 2011

and that projects funded under this announcement will have a start date no earlier than July 1, 2011. This FFO meets NOAA's Mission Support goal to provide critical support for NOAA's Mission (http://www.ppi.noaa.gov/PPI_Capabilities/Documents/Strategic_Plans/FY09-14_NOAA_Strategic_Plan.pdf).

8. Definitions:

Earth System Science: an integrated approach to the study of the Earth that stresses investigations of the interactions among the Earth's components in order to explain Earth dynamics, evolution, and global change. (Source: NASA's Earth Observatory Glossary, http://earthobservatory.nasa.gov/Library/glossary.php3?mode=alpha&seg=e.)

Environmental literacy: a fundamental understanding of the systems of the natural world, the relationships and interactions between the living and non-living environment, and the ability to understand and utilize scientific evidence to make informed decisions regarding environmental problems (Source: *NOAA Education Strategic Plan 2009-2029*, available at: http://www.education.noaa.gov/plan).

Environmental stewardship: an ethic whereby citizens value and participate in the careful and responsible management of air, land, water, and biodiversity to ensure healthy ecosystems for present and future generations of all life on Earth. Stewardship of the environment can include conservation, protection, regeneration, and restoration of natural ecosystems and incorporates the use of sustainable practices for human actions that impact these resources (Source: *NOAA Education Strategic Plan 2009-2029*, available at: http://www.education.noaa.gov/plan).

Inquiry: a multifaceted activity that involves making observations; posing questions; examining books and other sources of information to see what is already known; planning investigations; reviewing what is already known in light of experimental evidence; using tools to gather, analyze, and interpret data; proposing answers, explanations, and predictions; and communicating the results. Inquiry requires identification of assumptions, use of critical and logical thinking, and consideration of alternative explanations. Students will engage in selected aspects of inquiry as they learn the scientific way of knowing the natural world, but they also should develop the capacity to conduct complete inquiries (Source: National Research Council, 1996).

NOAA assets: tangible resources that the Agency makes available to support work done through the Environmental Literacy Grants program. NOAA can provide unique resources in ocean, coastal, Great Lakes, weather and climate sciences such as data sets, subject matter experts, facilities, and managed natural resource areas. Information about NOAA's assets can be found at: http://www.oesd.noaa.gov/elg/NOAA_assets.html. A summary of NOAA

programs and activities sorted by the state or territory in which they are based or focused is available at: http://www.legislative.noaa.gov/NIYS0107/noaainyourstate.html.

Outcomes: the changes that show movement toward achieving ultimate goals and objectives - e.g., the number of persons who, as a result of their participation in a project, demonstrate changes in: awareness and knowledge of specific concepts and/or issues; interest in and/or attitudes toward certain issues, careers, or courses of action; and behavior or skills. Outcomes may be changes that occur in the short term (e.g. knowledge, attitudes, skills and aspirations); medium term (e.g. practices and behaviors); or long term (e.g., social, economic, and environmental conditions). (Source: adapted from the Framework for Evaluating Impacts of Informal Science Education Projects Report from a National Science Foundation Workshop (p.35, http://insci.org/resources/Eval_Framework.pdf).)

Outputs: the immediate results of an action (e.g., services, events, and products) that document the extent of implementation of a particular activity. They are typically expressed numerically - e.g., the number of students involved in a service-learning project or the number of professional development workshops held, etc. (Source: adapted from the Framework for Evaluating Impacts of Informal Science Education Projects Report from a National Science Foundation Workshop (p.35, http://insci.org/resources/Eval_Framework.pdf).)

Pedagogical Content Knowledge: the knowledge of how to teach particular subject matter, requiring combined mastery of the fundamental concepts of the discipline with knowledge of students and learning. Teachers use their knowledge of preconceptions and misconceptions that students have of STEM subjects in conjunction with instructional strategies or representations for teaching STEM subjects. (Source: National Research Council, *Taking Science to School: Learning and Teaching Science in Grades K-8*, 2007.)

Problem-based learning: an instructional method that encourages learners to apply critical thinking, problem-solving skills, and content knowledge to real-world problems and issues. Instruction is more student-centered and less teacher-directed than in traditional classrooms. Students assume considerable responsibility for their own learning by locating much of the information they need to solve the problems at hand. Learning is active rather than passive, integrated rather than fragmented, cumulative rather than isolated, and connected rather than disjointed. Problem-based learning is likely to include discussion, reflection, research, projects, and presentations. The instructor plays several roles, including lecturer, facilitator, foil, coach, and assessor. These roles entail offering guidance, instruction, and resources to help students acquire content knowledge and problem-solving skills. Evaluation is authentic, performance based, and ongoing. (Source: Levin, *Energizing Teacher Education and Professional Development with Problem-Based Learning*, 2001.)

Service-learning: a method of instruction in which students learn and use school-based

academic learning goals and develop civic responsibility through active participation in thoughtfully organized service that is conducted in, coordinated with, and meets the needs of a community. Service learning projects emphasize both the service and the learning. By applying classroom content to community settings, service-learning is a way to provide more authenticity and purpose for classroom learning (adapted from The National and Community Service Act of 1990 (42 U.S. Code 12511)).

9. References Cited:

BEST (Building Engineering and Science Talent). 2004. *The Talent Imperative: Diversifying America's Science and Engineering Workforce*. San Diego, CA: BEST.

Center on Education Policy. 2007. *Choices, Changes, and Challenges: Curriculum and Instruction in the NCLB Era*. Washington, DC: Author.

Dorph, R., Goldstein, D., Lee, S., Lepori, K., Schneider, S. and Venkatesan, S. 2007. *The Status of Science Education in the Bay Area: Research Brief.* Berkeley, CA: Lawrence Hall of Science, University of California.

Eyler, J., and Giles, D.E., Jr. 1999. *Where's the Learning in Service-Learning?* San Francisco, CA: Jossey-Bass.

Griffith, G., and Scharmann, L. 2008. *Initial impacts of No Child Left Behind on elementary science education.* Journal of Elementary Science Education, 20(3): 35-48.

Levin, B.B. (Editor). 2001. *Energizing Teacher Education and Professional Development with Problem-Based Learning*. Alexandria, VA: Association for Supervision and Curriculum Development.

Levine, R., Gonzalez, R., and Martinez-Sussmann, S. 2009. *Learning Diversity in Earth System Science*. Paper prepared for the National Research Council 2010 report. Available at: http://www7.nationalacademies.org/bose/NOAA%20Diversity.pdf.

National Research Council. 1996. *National Science Education Standards*. Washington, DC: National Academies Press.

National Research Council. 2007. *Taking Science to School.* Committee on Science Learning, Kindergarten Through Eighth Grade. Washington, DC: National Academies Press.

National Research Council. 2008. *Ready, Set, Science!: Putting Research to Work in K-8 Science Classrooms*. Washington, DC: National Academies Press.

National Research Council. 2009. *Learning Science in Informal Environments*.

Washington, DC: National Academies Press.

National Research Council. 2010. *NOAA's Education Program: Review and Critique.* Washington, DC: National Academies Press.

National Youth Leadership Council. 2008. *K-12 Service-Learning Standards for Quality Practice*. Saint Paul, MN: Author.

Tai, R.H., Liu, C.Q., Maltese, A.V., and Fan, X. 2006. *Planning early careers in science*. Science, 312: 1143-1144.

Wei, R.C., Darling-Hammond, L., Andree, A., Richardson, N., and Orphanos, S. 2009. *Professional Learning in the Learning Profession: A Status Report on Teacher Development in the United States and Abroad*. Dallas, TX: National Staff Development Council.

B. Program Priorities

Applications may incorporate service learning and/or professional development activities and should be implemented at the state, regional, or national level. This funding opportunity has two sizes of awards called "priorities", numbered without regard to importance for funding.

Priority 1 awards are intended to provide innovative, catalytic start-up or proof-of-concept funding that will enable projects to reach a level of maturity that, if shown to be effective, will allow them to compete for longer-term funding from other sources or future Environmental Literacy Grants, or become self-sustaining. They include planning activities, pilot studies, and feasibility studies, or, in general, work that is on a path toward a major project but that needs to address critical issues or decisions before major projects can be formulated. Examples include: a focused planning effort which produces a large complex collaboration (especially where the collaborators may be from different professional communities), front-end evaluation of a specific audience where there is a significant gap in the literature, and demonstration of a new use of technology in K-12 education.

Priority 2 awards are intended to support full-scale implementation of educational projects, where there has been a needs assessment and a pilot test or other demonstration of feasibility for the implementation of the idea. Partnerships among multiple organizations or networks of organizations are typically a component of full-scale implementation. These types of projects may expand an existing program into new regions or adapt it in order to broaden participation of new audiences.

C. Program Authority

Authority for this program is provided by the following 33 USC 893a(a), the America

COMPETES Act.

II. Award Information

A. Funding Availability

NOAA anticipates the availability of approximately $8,000,000 of total Federal financial assistance in FY2011 for this solicitation. Approximately 5 to 10 awards total among both priorities in the form of grants or cooperative agreements will be made.

For Priority 1, the total Federal amount that may be requested from NOAA shall not exceed $500,000 for all years including direct and indirect costs. The minimum Federal amount that must be requested from NOAA for all years for the direct and indirect costs for this priority is $200,000. Applications requesting Federal support from NOAA of less than $200,000 or more than $500,000 total for all years will not be considered for funding.

For Priority 2, the total Federal amount that may be requested from NOAA shall not exceed $1,500,000 for all years including direct and indirect costs. The minimum Federal amount that must be requested from NOAA for all years for the direct and indirect costs for this priority is $500,001. Applications requesting Federal support from NOAA of more than $1,500,000 or less than $500,001 total for all years will not be considered for funding.

The amount of funding available through this announcement will be dependent upon final FY11 appropriations. Publication of this notice does not oblige DOC/NOAA to award any specific project or to obligate any available funds.

If an applicant incurs any costs prior to receiving an award agreement from an authorized NOAA Grants Officer, the applicant would do so solely at one's own risk of such costs not being included under the award. The exact amount of funds that may be awarded will be determined in pre-award negotiations between the applicant and NOAA representatives.

B. Project/Award Period

Applications to priority 1 (proof-of-concept projects) must cover a project period of one to two years to be eligible for merit review. Applications to priority 2 (full-scale implementation projects) must cover a project period of three to five years to be eligible for merit review. Start dates can be as early as July 1, 2011. Applications must include a project description and a budget for the entire award period. Applicants selected to receive funding may be asked to modify the project start date.

C. Type of Funding Instrument

Applications selected for funding will be funded through a grant or cooperative agreement under the terms of this notice. Applications funded through cooperative agreements will include substantial involvement of the Federal government which may include, but is not limited to, liaison activities between the grantee and NOAA personnel who are contributing data or expertise to the project.

III. Eligibility Information

A. Eligible Applicants

Eligible applicants are institutions of higher education, other nonprofits, K-12 public and independent schools and school systems, and state, local and Indian tribal governments in the United States. U.S. federal agencies, for-profit organizations, foreign organizations and foreign government agencies are not eligible to apply as the lead institution. The following types of organizations may be partners on an application submitted by an eligible applicant: NOAA programs and offices, other Federal Agencies, Federally Funded Research and Development Centers, for-profit companies, non-U.S. organizations and institutions. NOAA will consider applications that request a portion of the funding be used to support these types of partners. **Please note:** although NOAA programs and offices can receive a small portion of funds associated with a project, the principal benefit of the project cannot be to support NOAA.

Home-school organizations are eligible to apply. However, individuals are not eligible to apply.

The Department of Commerce/National Oceanic and Atmospheric Administration (DOC/NOAA) is strongly committed to increasing the participation of Minority Serving Institutions (MSIs), i.e., Historically Black Colleges and Universities, Hispanic-serving institutions, Tribal colleges and universities, Alaskan Native and Native Hawaiian institutions, and institutions that work in underserved communities. Applications are encouraged that involve any of the above types of institutions.

An individual may apply only once as principal investigator (PI) through this funding opportunity. However institutions may submit more than one application and individuals may serve as co-PIs or key personnel on more than one application.

B. Cost Sharing or Matching Requirement

There is no cost share requirement.

C. Other Criteria that Affect Eligibility

Applications with budgets in which the total Federal amount requested from NOAA for all years of the project is more than $1,500,000 or less than $200,000 for the direct and indirect costs of the proposed project will not be considered for merit review.

- Pre-proposals are required and must be submitted on time.
- Full applications that were not authorized for submission will not be merit reviewed.
- Applications received after the deadline will not be merit reviewed. See additional details in Section IV. C.
- Pre-proposals and full applications that are lacking any of the required elements or do not follow the form prescribed in IV.B will not be merit reviewed.

IV. Application and Submission Information

A. Address to Request Application Package

Pre-proposal and full application packages are available through Grants.gov (http://www.grants.gov). If an applicant does not have Internet access, please contact one of the Program Officers, Carrie McDougall, Sarah Schoedinger, or John McLaughlin, for information on how to submit a pre-proposal and a full application. See Section VII. Agency Contacts for the Program Officers' contact information.

Grants.gov requires applicants to register with the system prior to submitting an application. This registration process can take several weeks and involves multiple steps. In order to allow sufficient time for this process, you should register as soon as you decide you intend to apply, even if you are not yet ready to submit your application. Also, even if an applicant has registered with Grants.gov previously, the applicant's password may have expired or their central contractor registration may need to be renewed prior to submitting to Grants.gov. Grants.gov will not accept submissions if the applicant has not been authorized or if credentials are incorrect. Authorizations and credential corrections can take several days to establish. Please plan your time accordingly to avoid late submissions. For further information please visit the Central Contractor Registration website (http://www.ccr.gov/).

If submitting a collaborative project (see section IV.B.1 and IV.B.2. below) each submitting institution must be registered in Grants.gov. If an applicant has problems downloading the application forms from Grants.gov, contact Grants.gov Customer Support at 1-800-518-4726 or support@grants.gov.

B. Content and Form of Application

Applicants must submit pre-proposals for review to prevent the expenditure of effort on full applications that are not likely to be successful. All applicants will receive a response to their pre-proposal via email from oed.grants@noaa.gov or letter indicating whether they are authorized to submit a full application. Only those who receive authorization from NOAA are eligible to submit a full application. The provisions for pre-proposal and full application preparation are mandatory. Applications that deviate from the prescribed format (refer to IV.B.1, Required Elements for Pre-proposals and IV.B.2, Required Elements of Full Applications) will not be reviewed.

If an applicant does not have Internet access or if technical issues prohibit submission through Grants.gov, hard copy pre-proposals or full applications will be accepted. Hard copy pre-proposals and full applications must be submitted with completed forms containing the original signature of the submitting institution's authorized representative and an electronic copy of the entire application on CD, including scanned signed forms. If the applicant has completed the entire pre-proposal or application in Grants.gov but is unable to submit it via Grants.gov, then this pre-proposal/application package should be provided via CD along with printed and signed versions of the required forms. The authorized representative should sign and date these forms over the printed signature that will appear in the signature box.

See the Office of Education's frequently asked questions site: http://www.oesd.noaa.gov/elg/elg_faqs.html for additional guidance during the preparation of pre-proposals and full applications.

1. Required Elements for Pre-proposals

FORM: The page margin on standard letter-size paper must be one inch (2.5 cm) at the top, bottom, left, and right. All pages should be numbered. The typeface must be standard 11-point size or larger and must be clear and easily legible.

If multiple institutions are partnering on a project, there are two options for how to apply for this funding opportunity. The partnering institutions may submit a single application wherein one applicant is the lead institution and other project partners are funded through sub-awards. Alternatively, applicants may choose a collaborative submission where each project partner submits a separate application on behalf of their institution, and funding is provided separately by NOAA to each collaborative partner. **Note** that all applicants must meet the eligibility requirements (see Section III) and the budget limits are the same regardless of whether a single application or a collaborative application is submitted. In other words, the combined budgets of a collaborative submission from 2 or more instititutions must meet the budget minimums and maximums described in section II.A, but each collaborative institution?s budget may be below the minimum. (For instance, in a

collaborative submission for a Priority 1 project, the total requested amount for support of the project must be between $200,000 and $500,000, but the the individual applicants? budget requests to NOAA may be less than $200,000.) Collaborative submissions will be reviewed as one single project.

For collaborative submissions of pre-proposals, the project description, budget and biographical information should be should be written collaboratively by the partners but submitted by only one collaborating institution along with the appropriate title page and SF424 from the submitting institution. The identity of this institution should be agreed upon by all project partners and must be indicated on Page 1 of the collaborative title page. Please use the collaborative title page template from this URL: http://www.oesd.noaa.gov/elg/funding_templates.html. The PI listed on the title page should be the one affiliated with the submitting institution; individuals from partner institutions may be listed as co-PIs.

CONTENT:

Each pre-proposal must contain the following five elements:

i. SF-424, Application for Federal Assistance. Hard copy submissions must have the original ink signature (blue ink is recommended).

ii. Title Page, The title page identifies the funding opportunity to which you are applying, the project's title, the Principal Investigator's (PI) and co-PI's names, affiliations, complete mailing addresses, email addresses, telephone numbers and fax numbers. There should be an executive summary of the project that does not exceed 150 words. The proposed start and end dates for the project and requested budget must also be included on the title page. For collaborative projects, please use the collaborative title page template. Title page templates are available at http://www.oesd.noaa.gov/elg/funding_templates.html.

iii. Three-page project description. This description must state the project's title and Principal Investigator's name; explain how the project will address NOAA's education goals; summarize the project, expected output or product, project goals or impact; and identify the project's partners.

iv. Two-page budget. This document should describe general costs associated with project implementation for each year of the project duration in cost categories consistent with the SF424A (i.e., Personnel, Fringe, Travel, Equipment, Supplies, Contractual, Indirect Costs). For a pre-proposal budget template, visit: http://www.oesd.noaa.gov/funding_templates.html. **Note** that budget details for collaborative submission of a pre-proposal should show the entire project budget, not just the one for the institution designated to submit on behalf of the partners.

v. One-page of biographical information. This page should include brief paragraphs on key personnel including the principle investigator, not to exceed 1 page total.

Failure to submit a pre-proposal by the deadline and/or to comply with the required form and prescribed page limits will result in an applicant being ineligible to submit a full application for this funding opportunity.

2. Required Elements for Full Applications:

FORM: The page margin on standard letter-size paper must be one inch (2.5 cm) at the top, bottom, left, and right. All pages should be numbered. The typeface must be standard 11-point size or larger and must be clear and easily legible. Color or high-resolution graphics, unusually sized materials, or otherwise unusual materials submitted as part of the application are allowed, but should be employed only when necessary for adequate description of the proposed project. All narrative sections of the full application should be single spaced and consist of the sections described in Section IV.B.2. Failure to comply with the required form and within the prescribed page limits will result in the full application not being merit reviewed.

If multiple institutions are partnering on a project, there are two options for how to apply for this funding opportunity. The partnering institutions may submit a single application wherein one applicant is the lead institution and other project partners are funded through sub-awards. Alternatively, applicants may choose a collaborative submission where each project partner submits a separate application on behalf of their institution, and funding is provided separately by NOAA to each collaborative partner. **Note** that all applicants must meet the eligibility requirements (see Section III) and the budget limits are the same regardless of whether a single application or a collaborative application is submitted. In other words, the combined budgets of a collaborative submission from 2 or more institutions must meet the budget minimums and maximums described in section II.A, but each collaborative institution's budget may be below the minimum. (For instance, in a collaborative submission for a Priority 1 project, the total requested amount for support of the project must be between $200,000 and $500,000, but the individual applicants' budget requests to NOAA may be less than $200,000.) Collaborative submissions will be reviewed as one single project.

For collaborative submissions of full applications, each collaborating partner should submit its own Standard Forms, title page, budget table, and budget narrative. However, all other documentation (abstract, project narrative, references, resumes, current and pending support, etc.) should be written collaboratively by the partners and are submitted by only one collaborating institution. The identity of this institution should be agreed upon by all project partners and must be indicated on Page 1 of each title page. Please use the collaborative title page template from this URL: http://www.oesd.noaa.gov/elg/funding_templates.html. The

PI listed on each title page should be the one affiliated with the submitting institution; individuals from partner institutions may be listed as co-PIs.

CONTENT:

Full applications must include the elements (a) through (i) below; element (j) is optional. Failure to provide this information in the required form and within prescribed page limits will result in the full application being excluded from further review.

(a) Required Forms. At the time of full application submission, all applicants anticipating direct funding shall submit the following forms with signatures of the authorized representative of the submitting institution. (**Note:** submission through Grants.gov results in automatic electronic signatures on these forms.):

(i) SF-424, Application for Federal Assistance

(ii) SF-424-A, Budget Information, Non-Construction Programs

(iii) SF-424-B, Assurances, Non-Construction Programs

(iv) CD-511, Certifications Regarding Lobbying

(v) SF-LLL, Disclosure of Lobbying Activities (if applicable, see instructions on form)

Only the versions of these forms available in Grants.gov are acceptable.

(b) Title Page. The title page identifies the funding opportunity to which you are applying, the project's title, the Principal Investigator's (PI) and co-PI's names, affiliations, complete mailing addresses, email addresses, telephone numbers and fax numbers. There should be an executive summary of the project that does not exceed 150 words. The proposed start and end dates for the project and requested budget must also be included on the title page. For collaborative projects, please use the collaborative title page template. Title page templates are available at http://www.oesd.noaa.gov/elg/funding_templates.html.

(c) One-page Abstract. Describe the essential elements of the proposed project. Include: (1) the Project Title; and (2) a concise statement of the objectives of the project, description of the project activities, the location of the project, the expected outcome(s) and the rationale for the work proposed. The abstract is used to help compare applications quickly and allows the respondents to summarize these key points in their own words. Project summaries of applications that receive funding may be posted on program-related websites and/or sent to members of Congress. The abstract should appear on a separate page, and not exceed one page in length.

(d) 15-page Project Description. The project description section must not exceed 15 pages and must follow the requirements in IV.B.2, Content and Form of Full Applications. Page limits are inclusive of figures and other visual materials, but exclusive of references, budget information, resumes, milestone charts, proposed work plans, and letters of commitment. Each page of the project description should include page numbers and the PI's name in the header or footer. A template for the project description can be found online at http://www.oesd.noaa.gov/elg/funding_templates.html.

The proposed project must be described completely. The project description should clearly describe the project's goals, implementation and management. It should provide a full justification for the project. This section should also include:

(i) The objective(s), expected outcomes (see definition Section I.A.8), and an explanation for how the activities and expected outcomes support the goal of this funding program described in, and the outcomes of the NOAA Education Strategic Plan referred to, in section I.A;

(ii) Description of the proposed activities. This should include a description of all activities that will be undertaken and products that will be created, including the best practices that will be employed during the project. The description should also provide a justification for the need of those products or activities, as well as a description of the process that will be used to create and evaluate all activities. Applications must clearly demonstrate how the proposed project builds upon prior practice and related work and cite appropriate literature references that support the proposed approach;

(iii) A discussion of the project's target audience(s) that specifically identifies whether the audience(s) is (are) teachers, providers of teacher professional development or pre-service teacher education, K12 students, or some combination of those audience types;

(iv) A discussion of how the proposed project addresses state standards, and/or state or national assessments;

(v) A discussion of how the proposed project reflects or addresses the Atmospheric Science Literacy, Climate Literacy and/or Ocean Literacy and/or Essential Principles and Fundamental Concepts as applicable;

(vi) A discussion of the institution's capability to complete the proposed activities;

(vii) A description of how the project will incorporate NOAA assets into the project activities;

(viii) A description of the project partners' roles and the coordination among project partners; specifically, highlight any partnerships involving NOAA assets

(http://www.oesd.noaa.gov/elg/NOAA_assets.html). (**NOTE:** letters of commitment articulating partners' roles should be submitted as a separate section of the application.);

(ix) A description of how the project activities will be evaluated for their effectiveness in meeting stated project goals and objectives as well as the goal of this funding opportunity, which is to advance inquiry-based Earth System Science learning and stewardship tied to the school curriculum. The description should also discuss who will be carrying out the evaluation. See Section I.A.6 for further guidance on project evaluation;

(x) A description of the capabilities of the personnel that will be involved in the project; and

(xi) A description of how project results will be disseminated beyond the audience immediately involved in the activities of the project. Specifically, PIs should consider presenting evaluation results and project impacts at the annual meetings of relevant professional organizations, such as ASCD (formerly the Association for Supervision and Curriculum Development), Association for Science Teacher Education, North American Association for Environmental Education, National Association of Research in Science Teaching, National Marine Educators Association, and National Science Teachers Association, etc.

(e) References Cited. Reference information is required. Each reference must include the names of all authors in the same sequence in which they appear in the publication, the article title, publication or publication title, volume number, page numbers, and year of publication. While there is no established page limit, this section should include bibliographic citations only and should not be used to provide parenthetical information outside the 15-page project description. If there are no references to cite, this must be clearly indicated under a heading "References Cited".

(f) Proposed Work Plan and Milestone Chart. Describe the involvement of your institution and partners including deliverables. Provide timelines of major tasks and potential outcomes covering the duration of the proposed project, including project evaluation. The tasks should relate to the both the budget and the intended deliverables or milestones. There is no page limit for this element.

(g) Budget. All applications must include a budget section that contains both a detailed table and a narrative, as well as the required official budget form (SF-424A). Both the table and the narrative should use the same categories as shown on the SF-424A form.

The Budget Section should provide enough detail to allow Office of Education staff and the review panel to evaluate the level of effort proposed by investigators and staff on a specific project. When appropriate, the narrative and table must provide details on: personnel salaries and fringe benefits (broken out by percent time and number of months devoted to the

project for each individual to be paid by the project); travel including per person and per trip costs for transportation, lodging and meals; equipment; supplies; contractual costs, such as anticipated sub-awards; and other costs, including printing, publications, evaluations, and communication costs. For projects with durations of three to five years, funding should also be requested to provide for the PI(s) to attend a PI conference once during the life of the award. Funding should also be requested to provide for the PI(s) to attend one or more conferences in which project and evaluation results will be presented. Appropriate conferences include the annual meetings, such as: American Geophysical Union, American Meteorological Society, ASCD (formerly the Association for Supervision and Curriculum Development), Association for Science Teacher Education, North American Association for Environmental Education, National Association of Research in Science Teaching, National Science Teachers Association, National Marine Educators Association, etc.

If appropriate, also include in the budget narrative, a description of any in-kind resources or equipment that will be provided as well as a description of any other funding that is being sought or has been obtained that could be leveraged to complement this project.

If sub-contracts or sub-awards will be made to project partners or others, the same amount of budget detail provided for the lead institution's activities should be provided for all partners and any planned subcontracts associated with the grant. See http://www.oesd.noaa.gov/elg/funding_templates.html for a budget narrative template and model and a budget table model. Documentation regarding indirect-cost-rate agreements must also be included. For additional guidance on providing adequate budget justifications, visit http://www.oesd.noaa.gov/elg/funding_templates.html and click on "NOAA Standard Budget Guidelines".

Although a range of budgets for the project evaluations will be accepted, it is not unreasonable for 10-20% of the budget to be allotted to a comprehensive evaluation of the project. Approximately 5% of the evaluation budget may need to be re-programmed during the award to allow for the grantee to participate in a program-wide evaluation.

There is no page limit for this element (g) Budget.

(h) Brief Resumes. All principal investigators, co-principal investigators, and/or key personnel of project partners must provide summaries of no more than 3 pages per person that include a list of professional and academic credentials and contact information (mailing address, email address, phone, fax). Failure to provide this information in the required format and within the prescribed page limits will result in the application not being reviewed.

(i) Current and Pending Support. Describe all current and pending Federal and non-Federal funding for all principal investigators (PIs) and co-PIs, unless the PI or co-PI are state or federal employees who are not supported by grants. If the PI or co-PI are state or

Federal employees who are not supported by grants, then no current and pending support information needs to be provided, however this fact should be plainly stated. The capability of the applicants (PIs and co-PIs) and their collaborators to complete the proposed work in light of present commitments to other projects must be assessable. Therefore, please list the percentage of time the applicant and collaborators have committed to other Federal or non-Federal grant-funded projects, as compared to the time that will be committed to the project solicited under this notice. If the applicants have no current or pending funding beyond this application, this must be clearly indicated under a heading "Current and Pending Support". A template for summarizing Current and Pending Support can be found online at http://www.oesd.noaa.gov/elg/funding_templates.html.

(j) Letters of commitment or other supplemental materials. If substantive partnerships are described in the project description, letters of commitment should be provided. Letters of commitment are important for demonstrating the commitment of project partners. Letters of commitment should be submitted as separate attachments in Grants.gov, or if after deadline emailed to the Program Officer. Any other supplemental material should also be submitted as separate attachments in Grants.gov.

(k) NEPA Questionnaire. The Office of Education has determined that applicants do not need to provide answers to the NOAA NEPA Questionnaire at this time.

C. Submission Dates and Times

An informational teleconference with the program officers will occur on July 28th 2010, 3:00 to 5:00 PM EDT. Interested applicants should register by contacting oed.grants@noaa.gov, including in the Subject line of the email: "Interested in FFO Teleconference - Need Details". Please provide the interested parties' name, institution and telephone number in the body of the email. Whenever possible, people from the same institution should try to call in through the same phone line.

Pre-proposal Submission Dates and Times:

Pre-proposals are required for all applications and must be received by 5:00 p.m., EDT, September 8, 2010. Late pre-proposals will not be merit reviewed. Pre-proposals should be submitted via Grants.gov. Pre-proposals submitted through Grants.gov will be accompanied by an automated receipt of the date and time of submission. For pre-proposals submitted through Grants.gov, there will be two automated email receipts sent to the application submitter with the date and time of submission (the first email confirms receipt, the second email confirms that there are no errors with your pre-proposal submission and it has been forwarded to NOAA for further processing). If both email confirmation receipts are not provided within two (2) days of pre-proposal submission, contact the Grants.gov Help

Desk and oed.grants@noaa.gov. **PLEASE NOTE:** It may take Grants.gov up to 48 hours to validate or reject the pre-proposal. Please keep this in mind in developing your submission timeline. Applicants are responsible for ensuring that all required elements have been appropriately submitted. Additional instructions for Grants.gov can be found at http://www.oesd.noaa.gov/elg/elg_faqs.html.

Hard copy pre-proposals will be hand stamped with the time and date when received in the Office of Education. (**Note** that late-arriving hard copy pre-proposals provided to a delivery service on or before 5 p.m., EDT September 8, 2010 will be accepted for review if the applicant can document that the pre-proposal was provided to the guaranteed delivery service by the specified closing date and time and if the applications are received in the Office of Education no later than 5 p.m. EDT two business days following the closing date.) **Please note:** hard copy applications submitted via the US Postal Service can take up to 4 weeks to reach this office; therefore applicants are advised to send hard copy applications via expedited shipping methods (e.g., Airborne Express, DHL, Fed Ex, UPS).

If you have submitted a hard-copy application, you must either call Stacey Rudolph at 202-482-3739 or send an email to oed.grants@noaa.gov indicating that you have submitted a hard copy full application within 24 hours after the deadline. The submitter will receive a response from the program office acknowledging receipt of the phone call or email and including an update on the receipt of the application. **If you do not receive this response within 72 hours of the deadline, then call Stacey Rudolph: 202-482-3739 to confirm that your application has been received.**

Pre-proposals are a prerequisite for submission of a full application. Applicants who submit a pre-proposal by 5:00 PM EDT, September 8, 2010 will receive notification authorizing or not authorizing a full application on or about November 19, 2010. **Please contact Stacey Rudolph at Stacey Rudolph: 202-482-3739 or oed.grants@noaa.gov if you have not received this notification by Nov 23, 2010.**

Full Application Submission Dates and Times:

The deadline for full applications is 5:00 p.m., EST on January 12, 2011. Full applications should be submitted via Grants.gov. Late applications will not be merit reviewed. Full applications submitted through Grants.gov will be accompanied by an automated receipt of the date and time of submission. For applications submitted through Grants.gov, there will be two automated email receipts sent to the application submitter with the date and time of submission (the first email confirms receipt, the second email confirms that there are no errors with your application submission and it has been forwarded to NOAA for further processing). If both email confirmation receipts are not provided within two (2) days of application submission, contact the Grants.gov Help Desk and oed.grants@noaa.gov.

PLEASE NOTE: It may take Grants.gov up to 48 hours to validate or reject the application. Please keep this in mind in developing your submission timeline. Applicants are responsible for ensuring that all required elements have been appropriately submitted. Additional instructions for Grants.gov can be found at http://www.oesd.noaa.gov/elg/elg_faqs.html.

Hard copy applications will be hand stamped with time and date when received in the Office of Education. (**Note** that late-arriving hard copy applications provided to a delivery service on or before 5 p.m., EST January 12, 2011 will be accepted for review if the applicant can provide official proof that their application was provided to the guaranteed delivery service by the specified closing date and time and if the application is received in the Office of Education no later than 5 p.m. EST two business days following the closing date.) **Please note:** hard copy applications submitted via the US Postal Service can take up to 4 weeks to reach this office; therefore applicants are advised to send hard copy applications via expedited shipping methods (e.g., Airborne Express, DHL, Fed Ex, UPS).

If you have submitted a hard-copy application, you must either call Stacey Rudolph at 202-482-3739 or send an email to oed.grants@noaa.gov indicating that you have submitted a hard copy full application within 24 hours after the deadline. The submitter will receive a response from the program office acknowledging receipt of the phone call or email and including an update on the receipt of the application. **If you do not receive this response within 72 hours of the deadline, then call Stacey Rudolph: 202-482-3739 to confirm that your application has been received.**

See Section F (below) for additional guidance.

D. Intergovernmental Review

Applications submitted to this funding opportunity are not subject to Executive Order 12372, Intergovernmental Review of Federal Programs.

E. Funding Restrictions

There are no funding restrictions.

F. Other Submission Requirements

Please refer to important information in Submission Dates and Times above to help ensure your letter of intent and application are received on time.

Address to submit pre-proposals and full applications:

Applications must be submitted through Grants.gov APPLY (http://www.grants.gov).

However, if an applicant does not have Internet access or if technical issues prohibit submission through Grants.gov, hard copy pre-proposals or full applications will be accepted. Hard copy pre-proposals and full applications should be delivered to: Stacey Rudolph, Dept. of Commerce, NOAA Office of Education, 1401 Constitution Avenue NW, HCHB 6863, Washington, DC 20230; Telephone: 202-482-3739.

Please note: hard copy applications submitted via the US Postal Service can take up to 4 weeks to reach this office; therefore applicants are advised to send hard copy applications via expedited shipping methods (e.g., Airborne Express, DHL, Fed Ex, UPS) and to retain proof of their submission to the expedited shipping company.

V. Application Review Information

A. Evaluation Criteria

a. Pre-Proposal Evaluation Criteria

(1) Importance and/or relevance and applicability of proposed project to the program goals (50%): This ascertains whether there is intrinsic value in the proposed work and/or relevance to NOAA's Federal, regional, or local activities. The application should describe how well the proposed project addresses NOAA's stated objectives and priorities. Reviewers will evaluate:

- How well the project addresses the goals and objectives of this funding program described in section I.A;
- How well the project is aligned with NOAA's Education Strategic Plan (http://www.education.noaa.gov/plan);
- The extent to which ocean, coastal, Great Lakes, weather and climate science topics and related data or other assets from NOAA are incorporated into the project activities and products;
- For Priority 2 projects, the scale at which the proposed project is likely to have an impact;
- For projects focusing on the atmosphere as a part of the Earth system, the extent to which the project will infuse the "Essential Principles and Fundamental Concepts for Atmospheric Science Literacy" (http://eo.ucar.edu/asl/pdfs/ASLbrochureFINAL.pdf) into the project activities;
- For projects focusing on climate change, the extent to which the project will infuse

"Climate Literacy: the Essential Principles of Climate Science" (http://climate.noaa.gov/climateliteracy) into the project activities;

- For projects focusing on the ocean as a part of the Earth system, the extent to which the project will infuse the "Ocean Literacy: the Essential Principles of Ocean Sciences" (http://www.coexploration.org/oceanliteracy/documents/OceanLitConcepts_10.11.05.pdf) into project activities;
- Whether the project will be aligned with appropriate national, state or local learning standards and/or assessments;
- The extent to which members of traditionally underrepresented groups in Science, Technology, Engineering, and Math (STEM) fields are involved; and
- The extent to which the STEM education needs of elementary teachers and students are addressed.

(2) Technical/scientific merit (25%): This assesses whether the approach is technically sound and/or innovative, if the methods are appropriate, and whether there are clear project goals and objectives.

(3) Overall Qualifications of Applicants (10%): This ascertains whether the applicant possesses the necessary education, experience, training, facilities, and administrative resources to accomplish the project. Reviewers will evaluate:

- The qualifications of the PI to lead the project; and
- The presence of collaboration with other programs, NOAA offices or programs, MSIs, or other educational or research institutions.

(4) Project Costs (15%): The budget is evaluated to determine if it is realistic and commensurate with the project needs and time-frame. Reviewers will evaluate:

- The reasonableness of the project costs given the availability program funds; and
- The adequacy of the proposed resources to accomplish the proposed work within the indicated time-frame.

(5) Outreach and Education (0%): This criterion ascertains whether this project provides a focused and effective education and outreach strategy regarding NOAA's mission to protect the Nation's natural resources. Reviewers will not use this criterion when

evaluating pre-proposals.

b. Full Application Evaluation Criteria

(1) Importance and/or relevance and applicability of proposed project to the program goals (25%): This ascertains whether there is intrinsic value in the proposed work and/or relevance to NOAA's Federal, regional, or local activities. The application should describe how well the proposed project addresses NOAA's stated objectives and priorities. Reviewers will evaluate:

- How well the project addresses the goals and objectives of this funding program described in section I.A;
- How well the project is aligned with NOAA's Education Strategic Plan (http://www.education.noaa.gov/plan);
- The extent to which ocean, coastal, Great Lakes, weather and climate science topics and related data or other assets from NOAA are incorporated into the project activities and products;
- For projects focusing on the atmosphere as a part of the Earth system, the extent to which the project will infuse the "Essential Principles and Fundamental Concepts for Atmospheric Science Literacy" (http://eo.ucar.edu/asl/pdfs/ASLbrochureFINAL.pdf) into the project activities;
- For projects focusing on climate change, the extent to which the project will infuse "Climate Literacy: the Essential Principles of Climate Science" (http://climate.noaa.gov/climateliteracy) into the project activities;
- For projects focusing on the ocean as a part of the Earth system, the extent to which the project will infuse the "Ocean Literacy: the Essential Principles of Ocean Sciences" (http://www.coexploration.org/oceanliteracy/documents/OceanLitConcepts_10.11.05.pdf) into project activities;
- Whether the project will be aligned with appropriate national, state or local learning standards and/or assessments;
- The extent to which members of traditionally underrepresented groups in Science, Technology, Engineering, and Math (STEM) fields are involved; and
- The extent to which the STEM education needs of elementary teachers and students are addressed.

(2) Technical/scientific merit (35%): This assesses whether the approach is technically sound and/or innovative, if the methods are appropriate, and whether there are clear project goals and objectives. Reviewers will evaluate:

- The completeness and adequacy of detail in the project description including clearly stated goals and measurable objectives;
- Whether the project is based upon a needs assessment demonstrating the project activities and/or products to be developed will fill a gap in formal K12 education in the areas of service learning, pre-service teacher education and/or in-service teacher professional development.
- The overall technical feasibility of the project, including whether the proposed approach is educationally and technically sound, is based on best practices, uses appropriate methods and technology(ies) to achieve project outcomes, and is likely to be implemented on the scale described;
- For Priority 1, the scalability of the project;
- For Priority 2, the scale of implementation of the project;
- The likelihood of meeting milestones and achieving anticipated results in the time proposed;
- The appropriateness of the identified target audience(s) and proposed methods to impact the stated audience(s);
- Whether there is a clear delineation of responsibilities of the project's key personnel and whether there are adequate communication mechanisms in place for coordinating among project partners;
- The value and appropriateness of proposed collaborations;
- The extent to which the project leverages other resources or investments (including NOAA assets) to achieve its objectives;
- If the project involves development of a model activity or program, how likely is that model to be adopted by other institutions;
- For Priority 2, likelihood the project can be sustained beyond the duration of the grant;
- The likelihood the impacts of the project on the target audience will be long-lasting; and

- Whether there are appropriate mechanisms to evaluate the success of the project in meeting the anticipated outcomes.

(3) Overall Qualifications of Applicants (15%): This ascertains whether the applicant possesses the necessary education, experience, training, facilities, and administrative resources to accomplish the project. Reviewers will evaluate:

- The qualifications and demonstrated ability within their areas of expertise of the applicants, of key personnel who would receive funds from this program, and of key personnel of the project partners;

- The applicant's previous experience in managing, designing, and implementing this type of educational programs;

- The evaluators' previous experience in managing, designing and implementing evaluations appropriate for the target audiences and proposed activities;

- The likelihood that the participating institution(s) have the appropriate resources to carry out the proposed activities and that applicant(s) have the ability to complete the proposed project successfully, especially technical capabilities;

- The level of collaboration with other programs, NOAA offices or programs, MSIs, or other educational or research institutions; and

- The extent to which all partners are contributing meaningfully to the project, including articulation of activities in letters of commitment.

(4) Project Costs (15%): The budget is evaluated to determine if it is realistic and commensurate with the project needs and time-frame. Reviewers will evaluate:

- The adequacy of the proposed resources to accomplish the proposed work within the indicated time-frame;
- Whether the budget is adequate for the scope of the evaluation planned;
- If there are additional funds that provide additional leverage; and
- The adequacy of detail in the budget narrative to allow an informed determination of how well all costs associated with the project are justified.

(5) Outreach and Education (10%): This criterion ascertains whether this project provides a focused and effective education and outreach strategy regarding NOAA's mission to protect the Nation's natural resources. Reviewers will evaluate:

- How the outcomes and results of the proposed project will be disseminated to audiences beyond those participating directly in the project. These may include publications, conferences, community events, media, etc. associated with professional organizations, such as: American Geophysical Union, American Meteorological Society, ASCD (formerly the Association for Supervision and Curriculum Development), Association for Science Teacher Education, North American Association for Environmental Education, National Association of Research in Science Teaching, National Marine Educators Association, etc.;
- The likelihood that the project will increase awareness and use of NOAA resources among target audiences.

B. Review and Selection Process

Upon receipt of a completed pre-proposal and application by NOAA, an initial administrative review is conducted to determine compliance with requirements and completeness of the pre-proposal and full application. Minimum requirements, among other elements, include all of the following:

- Applicant is eligible to apply;
- Pre-proposal was received on time;
- Applicant was authorized to submit a full application;
- Full application was received on time;
- All required elements of the pre-proposal and full application are present and follow format guidance;
- Requested budget is no less than $200,000 and no more than $1,500,000 for all years of the project; and
- Project duration is 1 to 2 years for Priority 1 projects and 3 to 5 years for Priority 2 projects.

Pre-proposals

All pre-proposals that meet the eligibility and minimum requirements and that are ascertained to be complete will be evaluated and scored by a panel of independent reviewers.

The reviews will be conducted by panel review. Reviewers may be Federal or non-Federal experts, each having expertise in a separate area so that the reviewers as a whole cover the spectrum of project types proposed in the applications received. The reviewers will score each pre-proposal using the evaluation criteria and relative weights provided above. The individual review ratings shall be averaged for each pre-proposal to establish rank order. No consensus advice will be given by the review panel. The Program Officer will neither vote nor score pre-proposals as part of the review process. Decisions on whether to authorize or not authorize a full application will be based on the rank order of the pre-proposals, unless choosing out of rank order is justified by the selection factors below (section V.C). The Office of Education anticipates asking up to 45 applicants per priority to submit full applications. Full applications from applicants who were not asked to submit them will not be reviewed or considered for funding.

Any feedback on pre-proposals will be sent to the party submitting the pre-proposal by November 19, 2010. This notification will be sent via an email from oed.grants@noaa.gov unless the applicant does not have Internet access, in which case a hard copy letter will be mailed. **If you do not hear from the Program office by November 23, 2010, please contact Stacey Rudolph at 202-482-3739 to ascertain the status of your pre-proposal**.

Full Applications

All full applications that meet the eligibility and minimum requirements and that are ascertained to be complete will be evaluated and scored by a panel of independent reviewers. The reviews will be conducted by panel review. Reviewers may be Federal or non-Federal experts, each having expertise in a separate area so that the reviewers as a whole cover the spectrum of applications received. The reviewers will score each application using the evaluation criteria and relative weights provided above. The individual review ratings shall be averaged for each application to establish rank order. No consensus advice will be given by the review panel. The Program Officer will neither vote nor score applications as part of the review process. The Program Officer will make his/her recommendations for funding based on rank order and the selection factors listed in the next paragraph to the Selecting Official, the Director of NOAA Education, for the selection of applications.

C. Selection Factors

The panel review ratings shall provide a rank order to the Selecting Official for final recommendation to the NOAA Grants Officer. The Selecting Official will select applications in the rank order established by each panel unless an application is justified to be selected out of rank order based upon one or more of the following factors:

1. Availability of funding;

2. Balance/distribution of funds:

a. Geographically

b. By type of institutions

c. By type of partners

d. By research areas

e. By project types

3. Whether this project duplicates other projects funded or considered for funding by NOAA or other Federal agencies;

4. Program priorities and policy factors;

5. Applicant's prior award performance;

6. Partnerships and/or participation of targeted groups;

7. Adequacy of information necessary for NOAA staff to make a NEPA determination and draft necessary documentation before recommendations for funding are made to the Grants Officer.

Selected applicants may be asked to modify objectives, project plans, time lines, or budgets, and provide supplemental information required by the agency prior to the award. When a decision has been made (whether an award or declination), anonymous copies of reviews and summaries of review panel deliberations, if any, will be made available to the applicant.

D. Anticipated Announcement and Award Dates

Review of full applications will occur during January through March, 2011. Awards will be made by June 30, 2011. Start dates should be no earlier than July 1, 2011.

VI. Award Administration Information

A. Award Notices

Successful applicants will receive notification (either hard copy or electronically) from OEd that the application has been recommended for funding to the NOAA Grants Management Division by July 1, 2011. This notification is not an authorization to begin performance of the project. Official notification of funding, authorized by a NOAA Grants

Officer, is the authorizing document that allows the project to begin. Notifications will be made by e-mail from Grants Online to the Authorized Representative of the project.

Unsuccessful applicants will be notified that their reviewed application was not recommended for funding (declined) or was not reviewed because it did not meet the minimum requirements prescribed in Sections IV.B and IV.C by July 1, 2011.

B. Administrative and National Policy Requirements

The recipients must comply with Executive Order 12906 regarding any and all geospatial data collected or produced under grants or cooperative agreements. This includes documenting all geospatial data in accordance with the Federal Geographic Data Committee Content Standard for digital geospatial data. The Program uses only the existing NOAA Federal financial assistance awards package requirements per 15 CFR parts 14 and 24.

National Environmental Policy Act (NEPA)

NOAA must analyze the potential environmental impacts, as required by the National Environmental Policy Act (NEPA), for applicant projects or applications which are seeking NOAA Federal funding opportunities. Detailed information on NOAA compliance with NEPA can be found at the following NOAA NEPA website: http://www.nepa.noaa.gov/, including our NOAA Administrative Order 216-6 for NEPA, http://www.nepa.noaa.gov/NAO216_6.pdf, and the Council on Environmental Quality implementation regulations, http://ceq.hss.doe.gov/nepa/regs/ceq/toc_ceq.htm. Consequently, as part of an applicant's package, and under their description of their program activities, applicants are required to provide detailed information on the activities to be conducted, locations, sites, species and habitat to be affected, possible construction activities, and any environmental concerns that may exist (e.g., the use and disposal of hazardous or toxic chemicals, introduction of non-indigenous species, impacts to endangered and threatened species, aquaculture projects, and impacts to coral reef systems). In addition to providing specific information that will serve as the basis for any required impact analyses, applicants may also be requested to assist NOAA in drafting of an environmental assessment, if NOAA determines an assessment is required. Applicants will also be required to cooperate with NOAA in identifying feasible measures to reduce or avoid any identified adverse environmental impacts of their application. The failure to do so shall be grounds for not selecting an application. In some cases if additional information is required after an application is selected, funds can be withheld by the Grants Officer under a special award condition requiring the recipient to submit additional environmental compliance information sufficient to enable NOAA to make an assessment on any impacts that a project may have on the environment.

Prior notice and an opportunity for public comment are not required by the Administrative Procedure Act or any other law for rules concerning public property, loans, grants, benefits, and contracts (5 U.S.C. 553(a)(2)). Because notice and opportunity for comments are not required pursuant to 5 U.S.C. 553 or any other law, the analytical requirements of the Regulatory Flexibility Act (5 U.S.C. 601 et seq.) are inapplicable. Therefore, a regulatory flexibility analysis has not been prepared. It has been determined that this notice does not contain policies with Federalism implications as that term is defined in Executive Order 13132.

Department of Commerce Pre-Award Notification Requirements for Grants and Cooperative Agreements: Administrative and national policy requirements for all Department of Commerce awards are contained in the Department of Commerce Pre- Award Notification Requirements for Grants and Cooperative Agreements contained in the Federal Register notice of February 11, 2008 (73 FR 7696). A copy of the notice may be obtained at http://www.gpoaccess.gov/fr/search.html.

Limitation of Liability

In no event will NOAA or the Department of Commerce be responsible for application preparation costs if these programs fail to receive funding or are cancelled because of other agency priorities. Publication of this announcement does not oblige NOAA to award any specific project or to obligate any available funds. Recipients and sub-recipients are subject to all Federal laws and agency policies, regulations and procedures applicable to Federal financial assistance awards.

Paperwork Reduction Act

This notification involves collection-of-information requirements subject to the Paperwork Reduction Act. The use of Standard Forms 424, 424A, 424B, and SF-LLL and CD-346 has been approved by the Office of Management and Budget (OMB) under control numbers 0348-0043, 0348-0044, 0348-0040 and 0348-0046 and 0605-0001. Notwithstanding any other provision of law, no person is required to respond to, nor shall any person be subject to a penalty for failure to comply with, a collection of information subject to the requirements of the PRA unless that collection of information displays a currently valid OMB control number.

Executive Order 12866

It has been determined that this notice is not significant for purposes of Executive Order 12866.

Executive Order 13132 (Federalism)

It has been determined that this notice does not contain policies with Federalism implications as that term is defined in Executive Order 13132.

C. Reporting

Progress reports are due every six months from the start date of the project. Progress reports should be submitted electronically through the NOAA Grants Online system and are due for all award recipients no later than 30 days after each 6-month project period. A final comprehensive report is due no later than 90 days after the expiration date of an award. Progress reports should detail the accomplishments that have occurred during the reporting period, correspond with the goals and objectives identified in the project narrative and provide specific, project-related information. A suggested template for project reports will be provided to grantees.

Federal Cash Transaction reports, form SF-425, should be submitted electronically through the NOAA Grants Online system and are due semi-annually on October 30th and April 30th for the preceding 6-month period (April 1st to September 30th and October 1st to March 30th) or portion thereof if the project start- or end-date falls in the middle of one of these intervals. Financial reports are due for all award recipients no later than 30 days after each 6-month period. The Final Financial Status report, form SF-425, is a comprehensive financial report that is due no later than 90 days after the expiration date of an award.

VII. Agency Contacts

Please visit the OEd website for further information at http://www.oesd.noaa.gov/funding_opps.html or contact the Program Officers: Carrie McDougall at 202-482-0875; or Sarah Schoedinger at 704-370-3528; or John McLaughlin at 202-482-2893; or by emailing any of them at oed.grants@noaa.gov.

For those applicants without Internet access, hard copies of referenced documents may be requested from NOAA's Office of Education by contacting Stacey Rudolph at 202-482-3739 or sending a letter to: Stacey Rudolph, Dept. of Commerce, NOAA Office of Education, 1401 Constitution Avenue NW, HCHB 6863, Washington, DC 20230; Telephone: 202-482-3739.

VIII. Other Information

None.