Goal #1 - Increase public understanding of the ocean and its relevance to our social and economic well-being and the quality of our lives

Two-Year Targets (2007 - 2008)	Output Metrics		Five-Year Targets (2011)	Output Metrics	Outcome Metrics
Disseminate the Ocean Literacy framework among strategic audiences (e.g., politicians, educational policy makers, informal institutions, professional associations, teachers)	Numbers and positions of individuals who have received a copy of the Ocean Sciences Literacy Framework				
Incorporate the Ocean Literacy Framework explicitly in COSEE programs	Documentation of how the Framework is incorporated into COSEE programs		Incorporate Ocean Literacy concepts into the exhibits and programs at 25 museums, aquariums and science centers nationwide	List of exhibits that include ocean literacy concepts and the location of these exhibits	Scores on an assessment of visitor awareness and knowledge about Ocean Literacy concepts obtained using a sample of individuals that visit museums, aquariums, and science centers
Promote and monitor the inclusion of Ocean Literacy principles into K-12 state standards and assessments	List of standards that include ocean science concepts and identification of the concepts that are included in these standards at the state level		Increase the presence of the Ocean Literacy principles in K-12 State Standards	List of 1) number of states that revise science standards and 2) number of states that incorporate all or a portion of the Ocean Literacy Essential Principles in these revisions in the next five years	Scores on an ocean sciences assessment administered to a sample of 11th grade students and teachers
Promote and monitor the inclusion of Ocean Literacy principles into national K-12 standards and assessments	List of standards that include ocean science concepts and identification of the concepts that are included in these standards at the national level		Increase the presence of the Ocean Literacy Principles in National Science Education Standards (NSES)	List of standards that include ocean science concepts and identification of the concepts that are included in these standards at the national level	Scores on an ocean sciences assessment administered to a sample of 11th grade students and teachers
Create a set of coordinated Ocean Literacy messages for media outlets	Documentation of the development of an offical COSEE ocean literacy "message"		Work with a minimum of five media outlets at each of 10 COSEE centers to convey nationally coordinated Ocean Literacy messages, via television news and weather programs, radio broadcasts, video games, etc.	List of mass media outlets and programming schedules for each Center; measures of frequency and quality (local versus national coverage) of ocean-literacy related stories published by media outlets	Scores on an assessment of public awareness and knowledge about Ocean Literacy concepts obtained using a sample of individuals targeted by the mass media outlets

Goal #2 - Better integrate the ocean research and science education enterprises

Two-Year Targets (2007 - 2008)	Output Metrics	Five-Year Targets (2011)	Output Metrics	Outcome Metrics
Understand the types of ocean science research and education collaborations by categorizing the types of collaborations	List of types of ocean science and research collaborations			
Develop guidelines on effective practices for stimulating and sustaining scientist-educator collaborations	List of guidelines on effective practices for stimulating and sustaining scientist-educator collaborations			
Determine COSEE program participants' peceptions of the quality and impact of educator-scientist collaborations	Scores on a self assessment rubric for assessing the quality and impact of scientist-educator collaborations	Determine impacts from scientist–educator collaborations	Results from a new national survey of effectivenes of scientist-educator partnerships	Narratives and statistics describing the impact of scientist-educator collaborations
		Develop criteria for achieving "high quality" collaborations and apply these to COSEE activities and programs	Documentation that COSEE sites considered and applied collaboration criteria to their activities and programs	Numbers of high quality collaborations achieved by each COSEE site
		Promote the development of incentives, opportunities, and support for ocean scientists to participate in scientist-educator collaborations	Listing and evaluation of COSEE activities designed to stimulate discussion among and action by scientists to improve their home institutions' rewards and recognition for involvement in education and outreach	Documentation of new rewards and recognition of involvement at the home institutions of scientists participating in COSEE-sponsored collaborative activities
		Promote the development of incentives, opportunities, and support for educators to participate in scientist-educator collaborations	Listing and evaluation of COSEE activities designed to stimulate discussion among and action by educators to improve their institutions' rewards and recognition for involvement with ocean scientists	Documentation of new rewards and recognition of involvement at the home institutions of educators participating in COSEE-sponsored collaborative activities
		Implement a criterion for new COSEE RFPs to apply criteria for high quality programs/activities	Documentation that criteria are being added and applied	
		Conduct one national and three regional "Integration of Ocean Research and Education" (IORE) workshops and reach 50% of COSEE Pis, as well as additional Network members and others	Numbers of national and regional workshops conducted with numbers and types of participants at each workshop	
		Annually expand by 10% the number of scientists informed about the benefits of building "high quality" collaborations with educators	Numbers of scientists contacted with collaboration information; ratings obtained from an assessment of knowledge about collaborations from a sample of scientists surveyed	
		Annually expand by 20% the number of educators informed about the benefits of building "high quality" collaborations with scientists	Numbers of educators contacted with collaboration information; ratings obtained from an assessment of knowledge about collaborations from a sample of educators surveyed	

Goal #3 - Increase and diversify the ocean workforce

Two-Year Targets (2007 - 2008)	Output Metrics		Five-Year Targets (2011)	Output Metrics	Outcome Metrics
Gather and synthesize the best information available to define and describe ocean-related jobs, their relationship to the ocean economy and present and future workforce trends (emphasis is placed on ocean science and technology occupations)	Synthesis report of "current knowledge" on ocean-related occupations and trends		Identify gaps between what ocean-related employers want/need in their employees contrasted with current training practices and align ocean-related STEM education with employer needs	An educational competencies model (that includes the definition of essential workplace knowledge and skills) validated by employers, evidence of the alignment of educational materials with identified needs, and assessments of students' performance	Employer satisfaction ratings of workforce candidates and employees from a survey of employers
Identify barriers to participation in ocean related occupations	An ocean workforce workgroup report of evidence/identification of barriers to widespread participation in ocean science and technology education and careers		Develop and implement strategies for recruiting diverse workers into the STEM pipeline	Descriptions of recruitment and retention strategies developed with business diversity experts and documentation of the implementation of these strategies	Changes in the numbers of individuals recruited into ocean related careers
Gather and sythesize what information is known about how to increase and diversify the STEM workforce	List of types of successful STEM and diversity programs and products; list of guidelines on effective practices for STEM/diversity products/programs; criteria for rating the quality and impact of STEM products/programs		Identify gaps in the educational system where specific ocean workforce needs are not adequately addressed and develop a plan to specifically address existing gaps	A report identifying gaps within the educational system and a plan to address those gaps	
			Develop activities/programs to address the barriers and gaps identified in two-year targets	Dissemination of the best information available on present and future ocean workforce trends to COSEE PI and stakeholders.	Documentation of the alignment of educational activities with workforce need
			Form partnerships between COSEE and the Department of Labor and three or more professional societies	Partnerships formed between COSEE and the Department of Labor and three or more professional societies	
			Develop programs in ISEs that target underrepresented/underserved audiences and improve awareness of ocean related careers	Statistical indices of the recognition of new ocean occupations calculated from survey responses of a sample of middle and high school college students	

Goal #4 – Increase the access to, and participation in, ocean sciences and ocean sciences education by underrepresented and underserved populations

Two-Year Targets (2007 - 2008)	Output Metrics	Five-Year Targets	Output Metrics	Outcome Metrics
Develop partnerships with diversity-focused organizations that have a diverse membership and/or programs that reach a diverse audience	Documentation of partnerships	Use partnerships with diversity focused organizations and most effective practices to develop inclusive and collaborative programs for formal and informal audiences	A report that includes (1) underserved/underrepresented population recruitment strategies and (2) specific activities and outcomes from COSEE partnerships with diversity-focused organizations.	Rubric-defined ratings that demonstrate that sensitivity and appropriateness of COSEE programs for cultural and ethnic groups
Create a national COSEE committee on equitable access responsible for responding to questions and needs of COSEE sites and collaborating with other federal/state diversity initiatives	Documentation of a national COSEE committee on equitable access established by 2007 (including members from diverse populations) and of recommendations/communication strategies disseminated to the COSEE network by 2008	Develop an internal professional development program for all COSEE staff on diversity issues and the development of culturally sensitive programs and products	Documentation of internal professional development activities.	
Identify and disseminate generalizable recruitment/engagement strategies that target underserved and underrepresented populations and adapt/apply these based on local or regional opportunities (act nationally, work locally)	Documentation of recruitment/engagement strategies and dissemination techniques	Sponsor a forum (during NOAA or other conferences) on COSEE and its efforts to develop culturally inclusive programs and products	Documentation of forum outputs	
		Support underserved/underrepresented individuals to present COSEE programs at Research Science (example: AGU) and Education (example: NMEA) focused conferences		Percentage increase of presenters from underserved/underrepresented at conferences
		Increase the number of COSEE Network members who are from underserved/underrepresented groups to reflect U.S. demographics	Criteria and a rubric to assess sensitivity in COSEE products and an evaluation of the effectiveness of the rubric in creating inclusive programs	Longitudinal statistics showing the change in the diversity of COSEE Network members

Goal #5 - Improve the quality of K-12 ocean sciences teaching

Two-Year Targets (2007 - 2008)	Output Metrics		Five-Year Targets	Output Metrics	Outcome Metrics
Establish school district partnerships in each COSEE region	Descriptions of district partnerships in each COSEE region		Engage K-12 science teachers in COSEE target regions to integrate ocean sciences topics and effective science pedagogy (includng skills, application and follow up) in their courses	Numbers of K-12 science teachers who integrate ocean sciences topics in their courses	Scores on an ocean sciences assessment administered to a sample of K-12 students in COSEE regions
Engage ten higher education institutions in offering teaching pre-service (methods) courses focused on ocean/earth systems science	Lists of institutions teaching these curricula, numbers of courses taught, and student enrollment data		Create ocean sciences curricula and higher education programs (e.g. certificate programs, degree programs) focused on pre-service teaching in ten institutions affiliated with the COSEE Network	Documentation of curricula and programs; documentation of higher education institutions adopting these programs	Responses of prospective science teachers on a teaching methods survey
			Work with formal and informal partners to disseminate effective practices into schools, teacher training institutions, and informal education enterprises	Evaluation of the quality/dissemination of teacher lesson plans, curriculum supplements, etc., developed by/with COSEE	Rubric-defined ratings of the COSEE Network's formal and informal dissemination of learning/teaching practices to others