

Northern Gulf Institute

Implementation Plan

Version 2007.09.28



NGI
NORTHERN GULF INSTITUTE

Northern Gulf Institute Implementation Plan

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Northern Gulf Institute - Implementation Plan

1. INTRODUCTION

The Northern Gulf Institute (NGI) Implementation Plan (IP) outlines the institute's overall implementation framework, management approach, organization and functions, policies and procedures. The NGI's first year research themes and project profiles are integrated into this document to serve as guiding examples of proposal, project, and performance reporting formats. The IP has been developed within the framework of the Memorandum of Agreement between Mississippi State University (MSU) and the National Oceanic and Atmospheric Administration (NOAA). Although the primary audience for this IP is NOAA and the NGI consortium, the adopted IP will be made available to all interested parties through posting on the NGI web site at www.NorthernGulfInstitute.org.

1.1. Background & Authority

In its April 26, 2006 Announcement of Federal Funding Opportunity, OAR-CIPO-2006-2000641, NOAA's Office of Oceanic and Atmospheric Research (OAR) identified the priority need to integrate research and technology to more effectively address the regional research and management needs of the Northern Gulf of Mexico. NOAA evaluated and awarded the NGI to the team led by Mississippi State University on October 1, 2006 for a five year term in its Cooperative Institute Program. This partnership furthers regional and national interests in the Northern Gulf of Mexico, and through the NGI, develops a sustained, high quality research, technology, educational, and transition-to-use program.

The NGI is a partnership of five complementary academic institutions and NOAA. The collaboration is led by Mississippi State University (MSU), partnering with the University of Southern Mississippi (USM), Louisiana State University (LSU), Florida State University (FSU) and the Dauphin Island Sea Lab (DISL). The policies and procedures of this initial IP are consistent with and expand upon the Memorandum of Agreement between MSU and NOAA, the NOAA notice of award to MSU of October 1, 2006, NOAA's review of MSU administrative and grants processes (MSU, September 7, 2006), and the NOAA Cooperative Institute Interim Handbook (NOAA, OAR, Version 01, December 5, 2005). The NGI's Executive Office is located in Starkville, MS. A Program Office is located at Stennis Space Center, MS facilitating a link with NOAA's NGI Science Advisor and many resident federal agencies. The academic facilities of the five NGI collaborating institutions host the research, technology, education, and transition-to-use program activities.

The NGI defines the Northern Gulf of Mexico region as the upland and watershed, coastal zone, and coastal ocean areas from the Sabine River, LA in the west to the Suwannee River, FL in the east. The Northern Gulf is a rich and interdependent natural environment of great complexity and is important to the region and the nation. The riverine-dominated Northern Gulf ecosystems are under pressure from increasing population and coastal development, impacts from severe storms

and climate variability, inland watershed and coastal wetlands degradation, and many other factors. NGI has chosen an approach to Northern Gulf Region issues, problems and opportunities that is closely aligned with NOAA's strategic and research priorities and its user-community. This approach is science driven, regionally focused, and coordinated with other Gulf of Mexico Basin activities, and seeks whenever appropriate to promote the application of its results to support decision makers and policy development.

1.2. Distinctive NGI Challenges

The NGI is committed to developing relevant, high quality research, technology and education. There is more to a successful NGI, however, than supporting pure research projects. Distinctive challenges confront a successful response to regional needs and requirements, challenges that are addressed more specifically in this IP as a result of six months of initial program implementation. NGI has several distinctive challenges as it enters its first year of collaboration, challenges that are expected to continue to guide NGI throughout its first five year award period. These key challenges include:

- 1.2.1.** Build an effective research and technical coordination and collaboration *program* (based on defined regional priorities) among five academic institutions, NOAA (both national and regional), other government agencies, non-governmental organizations, and the recovering communities of the Northern Gulf. A vital element of NGI is *institution- and community-building* through collaboration and effectively coordinating its institutional efforts and results with local-to-national organizations. A significant challenge to program building is to develop and deliver *regional* solutions—to harness effectively the confluence of geographic, ecological, social-demographic, weather, climate and other attributes that characterize the Northern Gulf.
- 1.2.2.** Focus outreach, research, development, training and education on filling gaps or reducing limitations in Northern Gulf *awareness, interest, understanding, acceptance and assimilation* of scientific and technical results. A successful NGI program will contribute to each level of regional need from improved awareness of problems, needs and solutions through expanding interest in tackling ecosystem-based issues, to improved lay and scientific understanding of the Northern Gulf.
- 1.2.3.** Promote and expand scientific, technical and systems *integration* as a guiding principle for the NGI, i.e., integration of upland, waterway, coastal and coastal ocean processes, integration of scientific and technical disciplines and institutions, integration of physical and biological sciences and social science data, and harvesting value from integrating NOAA and NGI strengths and resources.
- 1.2.4.** Develop an agency-wide collaboration with NOAA. Provide *access* for NOAA and NOAA-led projects to the academic and technology assets of NGI through a NGI Executive Office, a Stennis Space Center NGI Program Office, and to and through all NGI member institutions. At the same time, provide *opportunities* for undergraduate, graduate, visiting scholar and Intergovernmental Personnel Act postings at all collaborating NGI institutions and locations.

- 1.2.5.** Sustain a commitment to *continuous adaptation and improvement* based upon rigorous project and program monitoring and evaluation, internal and external reporting and reviews and, whenever possible, the transition of NGI results to decision support uses. For NGI, evaluation is a continuing priority promoted by leadership attention, integration of evaluation into project management, and adequate investment of evaluation resources.
- 1.2.6.** Leverage NOAA support of NGI by fostering collaboration within and among NGI institutions, with NOAA Line and Research Offices, with other government organizations, and the private sector—by seeking outside NGI funding and resource sharing. Successful leverage will, among other benefits, support NOAA’s recent emphasis on fostering regional collaboration activities (see, e.g., www.ppi.noaa.gov/regional_collaboration).

2. VISION

NGI will be a regional leader providing integrative research and education to improve the resiliency and conservation of the Northern Gulf of Mexico.

3. MISSION

NGI conducts high-impact research and education programs in the Northern Gulf of Mexico region focused on integration - integration of the land-coast-ocean-atmosphere continuum; integration of research to operations; and integration of individual organizational strengths into a holistic program. The program shall measurably contribute to the recovery and future health, safety, resilience and productivity of the region, through sustained research in a geospatial and ecosystem context.

4. GOALS

The NGI goal is to develop, operate, and maintain an increasingly integrated research and transition *program*, the results of which fill priority gaps or reduce limitations in current Northern Gulf of Mexico awareness, understanding and decision support—especially at the intersection of upland-watershed systems and coastal waters, habitats, resources and hazards, integrating the interaction and impacts of people and communities. The NGI thus contributes to NOAA’s priority interest (Announcement) in Ecosystem Management, Geospatial Data Integration and Visualization, Coastal Hazards, and Climate Effects on Regional Ecosystems research themes.

5. NGI IMPLEMENTATION FRAMEWORK

The NGI implementation framework presented here builds upon the proposal submitted by the NGI consortium to NOAA on May 23, 2006, a number of interactions with NOAA and resulting clarifications after selection, the NOAA October 1, 2006 award, the preparation and review of a Memorandum of Agreement (MOA) between MSU and NOAA, and reference to NOAA’s Cooperative Institute Interim Handbook. The NGI implementation framework presents policy,

program and procedural guidance to the NGI and communications with NOAA's CI Program and participating NOAA offices, and to the various review, advisory and working-level entities affiliated with NGI.

5.1. Research Themes

NGI's Research Themes follow and amplify the four themes presented in the NOAA Announcement of Opportunity. As NGI moves ahead on implementation it is important to reiterate and present several additional thematic guideposts. First, an ecosystem-based approach to research and transition will pervade the NGI program. Second, geospatial technology and applications are important "glue" that connects the four NGI Themes and NGI's wider regional communities. Consistent with the ecosystem-based foundation of the program, geospatial research and products are guided by ecosystem principles, definitions and approaches. Third, climate effects are studied primarily from a regional perspective and in conjunction with ecosystem-based theory, observations and monitoring schemes. Both climate effects and hazard/resilience issues will incorporate social and economic elements and research endeavors.

The following NGI Themes and samples of theme priorities are drawn from the NGI proposal and are presented as a backdrop to project implementation requirements.

5.1.1. Ecosystem-based Management

- *...enhance understanding of the interconnections between the marine ecosystem and the adjacent watersheds (Announcement of Opportunity)*
- *... establish nutrient criteria for coastal waters, tools to better understand the relationship between watershed land uses and the resulting nutrient loading problem in coastal waters (Gulf of Mexico Alliance)*
- *Identify gaps in habitat information, including as a first step high resolution bathymetry, data sharing, regional habitat strategies (Gulf of Mexico Alliance)*
- *Examine the role of humans as an integral part of an ecosystem (NOAA 2006-2011 Strategic Plan)*

5.1.2. Geospatial Data/Information and Visualization in Environmental Science

- *Focus on data integration techniques and geospatial technologies, decision support tools that enable improved regional ecosystem policy, management and forecasting (Announcement of Opportunity)*

5.1.3. Climate Change and Climate Variability Effects on Regional Ecosystems

- *Focus climate change and climate variability effects upon marine ecosystems and the socio-economic well being of the region and adjacent watersheds (Announcement of Opportunity)*
- *Take advantage of remote sensing technologies such as aerial photography, LIDAR, tide and water level gages, and land elevation benchmark stations [to] assist the Gulf*

Coast states to scientifically address their wetland restoration efforts (Alliance White Paper).

5.1.4. Coastal Hazards and Resiliency

- *Research in this Theme encompasses the physical and biological systems as well as, the socio-economic dimensions associated with coastal hazards (Announcement of Opportunity)*
- *...initiate collaborative efforts...to address eutrophication, elevated bacteria levels, harmful algal blooms, hypoxia, and toxic contamination of fish and wildlife. (Gulf of Mexico Alliance)*
- *Emphasize coastal hazards impacts on coastal habitats of the Northern Gulf of Mexico based on weather, water quality, and impacts on human health and recreational uses of the coastal environment (Gulf of Mexico Alliance)*

5.2. Integration of Research

Table 5.2 arrays the first year (FY 2006) NGI projects against the Research Themes adopted by the NGI and introduced above. This tabulation is a first step toward moving from a collection of research projects to a more integrated program of projects. Appendix A provides other tabulations of projects by NOAA Goals and by NOAA Line Offices.

The next task for NGI in this arena, the results of which were presented at the 2007 Annual NGI Conference will be to:

- Develop a common, expanded Project Profile.
- Analyze each project to determine whether or not it supports more than one Theme (i.e., is a “cross-cutting” project)
- Determine the extent to which projects sponsored by one NGI entity may align themselves with projects sponsored by another (i.e., whether more formal joint project implementation linkages should be considered by the NGI Fellows)
- Assess the “regional picture” created by the first year NGI program—and create a GIS expression of the initial regional effort at NGI; create a GIS linkage between NGI and NOAA’s Gulf Coast Services Center and the National Coastal Data Development Center.

5.3. NGI Project Profile Template

The most immediate and critical Year 1 implementation step is to bring all NGI projects within a common format or “template” and to add as much necessary “baseline” information as possible to each project—creating a Project Profile. The Project Profile template sets forth an ambitious but necessary set of elements that provide a foundation for upcoming NOAA and Advisory Council project reporting, evaluation, and research plan and budget support documents.

	NGI First Year Research Efforts	NGI Research Themes			
		Ecosystem Mgt	Geospatial Data & Vis	Climate Impacts	Coastal Hazards
MSU	06-MSU-01 Develop Foundation for Analysis of Natural & Human-Induced Disturbances to Coastal Economies	X			X
	06-MSU -02 Assessing the Impact of Ordinances, Outreach and Enforcement on the Resiliency of Gulf Coastal Watersheds	X			X
	06-MSU-03 Watershed Modeling Improvements to Enhance Coastal Ecosystems	X			X
	06-MSU-04 Spatial Technology and High Performance Computing for Improving Prediction of Surface Water Quality	X	X		
	06-MSU-05 Modeling Mobile Bay Sediments and Pollutants with New Technologies	X	X		X
	06-MSU-06 Visualization Techniques for Improving Public Understanding of Catastrophic Events		X		X
	06-MSU-07 An Information Semantic Approach for Resource and Knowledge Discovery in an Integrated Ocean Observing System	X	X	X	X
	06-MSU-08 NGI Outreach Efforts	X	X	X	X
	06-MSU-09 Improving Hurricane Intensity and Landfall Estimation with Refined Modeling				X
USM	06-USM-01 Microbial Source Tracking and its Application to the Northern Gulf of Mexico	X			X
	06-USM-02 Utility of Ionosphere and Troposphere Models for Extending the Range of High-Accuracy GPS	X	X		X
	06-USM-03 Monitoring and assessment of Coastal and Marine Ecosystems in the Northern Gulf	X			X
	06-USM-04 Interaction between off-shore circulation and Nearshore Processes During Extreme Weather Events	X			X
	06-USM-05 Satellite & In Situ Optical Assessment of Algal Bloom Events in the Northern Gulf of Mexico	X			X
	06-USM-06 Coordination and Education Support for USM Northern Gulf Institute Activities	X	X	X	X
	06-USM-07 Quantifying Ecosystem Services of Different Coastal Habitat Types	X			X
	06-USM-08 Macrofaunal Indicators of Hypoxia	X			X
LSU	06-LSU-01 DELTA Ecosystem Forecasting System	X			X
	06-LSU-02 Public Health and Stressors	X			X
	06-LSU-03 Trophic Linkages and Biomass Production in Estuarine Ecosystems	X			X
	06-LSU-04 Investigating Material Exchange Between the Marsh and Channel Along an Estuarine Gradient	X			X
FSU	06-FSU-01 Oceanographic Modeling	X		X	X
DISL	06-DISL-02 Habitat Restoration Research at DISL	X			X
	06-DISL-01 Marine Education and Outreach at DISL	X			X

Table 5.2 NGI Projects and Research Themes

Project Profile Template

NGI Number and Project Theme:

Project Title:

Key Scientific Question(s)/Technical Issue(s):

Project Sponsor(s): (NMFS, NRL, FSU, DISL, and etc., plus any involved non-sponsor project partners)

Project Duration: (not to exceed 3 years, i.e., so as to be substantially complete by the start of Renewal Review that begins in mid- to late-Calendar Year 2009).

Project Baselines:

- Contributions to Specific NOAA Goals/Objectives:
- Problems and Priorities, i.e., how is the project tied to regional issues and priorities, identify priority stakeholders, e.g., Gulf Alliance, specific user groups, etc.:
- Gaps (describe how the project will narrow gaps in regional knowledge, data, model performance, geographic coverage, etc.):

Project Abstract: (Two-Three paragraphs)

Expected Project Contributions to:

- Regional Awareness:
- Regional Interest:
- Regional Understanding:
- Regional Acceptance:
- Transition to Decision Support:
- Other Metrics Specific to this Project:

Contributions to Other CI Performance Measures

- Publications: peer reviewed, non-peer reviewed
- Conference papers
- Contributions to NOAA Career Track
- Student support
- Project Outreach Activities
- Demonstration of Collaboration with NGI Partner Institutions or NOAA

5.4. Specific On-Going NGI Science & Technology Support

The earlier two sub-sections provide detail of NGI responsibilities for developing Project Profiles, supporting the NGI Milestone Calendar, and moving NGI to full implementation. This sub-section adds detail to on-going NGI responsibilities for NGI Year 1 and subsequent years.

5.4.1. Science and Technology Support—MSU Executive Office

- Executive Office leadership and interaction with NOAA, the High Performance Computing Collaboratory, other MSU facilities, the NGI website and Portal Newsletter, assembly, editing and printing of NGI reports
- Science and technology assessments (with NGI Fellows/NOAA CIs or Regional Affiliates) and technology evaluation and support

- Coordination with other Cooperative Institutes, including the Annual Directors Meeting and site visits (learn from and contributing to the overall CI enterprise)
- Overall responsibility for NGI research coordination and performance reporting
- Grants management, financial management, and regional integration

5.4.2. Science and Technology Support—NGI Stennis Program Office

- Point of contact for NGI PIs and projects
- Program Office-NOAA Science Advisor interaction; support for the Advisory Council
- Coordination of Annual NGI Conference; quarterly Council of Fellows Meetings
- Stennis-based institutional and program coordination
- Regional outreach, education and training
- Host undergraduate, graduate and visiting NGI scientists
- Introduction of students to NOAA career tracks

5.4.3. Science and Technology Support—Fellow Institutions

- Overall academic and program direction and review through the Council of Fellows
- Program planning, management and conference involvement
- Project planning, profile development and refinement, and project management
- Project monitoring, evaluation and reporting
- Project and program integration
- Regional stakeholder interaction and outreach
- Extramural NGI leverage opportunities

5.5. Success Criteria

Demonstrable progress meeting these seven “distinctive challenges” is especially important to the success of NGI over the first three years, and for charting a solid pathway to a sustained future. As such, the success criteria implicit in the challenges described above are set forth for further emphasis:

- 5.5.1.** Measure progress from an assembly of projects to a coherent, cross-theme program of projects.
- 5.5.2.** Effectively engage regional problems and serve regional scientific, technical and management interests.
- 5.5.3.** Show specific evidence in each NGI Theme of changes in stakeholder awareness, interest and understanding, and/or stakeholder acceptance and assimilation of results.
- 5.5.4.** Increase understanding of the necessary integration among and between upland, coastal zone and coastal waters, and create improved geospatial tools to support ecosystem-based integration.

- 5.5.5.** Demonstrate new and effective access to NGI by NOAA and visa versa, the benefits of student/researcher involvement in the program to the regional community and career opportunities with NOAA.
- 5.5.6** Establish, maintain and use the results of evaluation to strengthen the NGI program and contribute to NOAA's overall performance and impact measurement objectives.
- 5.5.7** Attract outside financial, technical and intellectual resources to the NGI, beginning in Year 2 of NGI implementation.

6. MILESTONES

Milestones are provided in calendar form and with listed priorities for the first year and subsequent years.

6.1. Milestone Calendar.

A quick look at the Annual Milestone Calendar (Figure 6.1) below orients the reader to a complex annual planning, project/program development, evaluation, reporting, and review/renewal process. One can readily see that the Milestone Calendar follows the federal fiscal year beginning in October and ending in September. Only four months out of twelve—January, March, July and September—are without milestone deliverables.

6.2. General Overview of Milestones.

Several additional comments help to set the scene for a more detailed tasking discussion to follow:

- 6.2.1.** MSU through its Executive Office, its Stennis Program Office and its Principal Investigators (PIs), is involved in a continuous process of policy, planning, budgeting, grants administration, evaluation, research, development and outreach support.
- 6.2.2.** NGI Council of Fellows meets in person or via teleconference once each Quarter to collaborate on key calendar milestones: (I) the Annual Performance Report (November); (II) Draft Research Plan and Budget Estimate (February); (III) the Annual Workshop at which time the NGI shows its wares to NOAA and the Northern Gulf community and finalizes the following year Annual Research Plan and Budget request (May); and (IV) finalizing the next Fiscal Year's plan, program, budget and performance metrics/progress reports (August).
- 6.2.3.** NOAA efforts in support of the NGI, led by its Science Advisor and the CI Program Manager in Silver Spring, and the NOAA members of the Advisory Council provide the necessary guidance to NGI, and enable the NOAA managers to both track and respond to NGI milestone deliverables. A NOAA-led Executive Council conducts program oversight and communicates NOAA policy guidance to NGI.

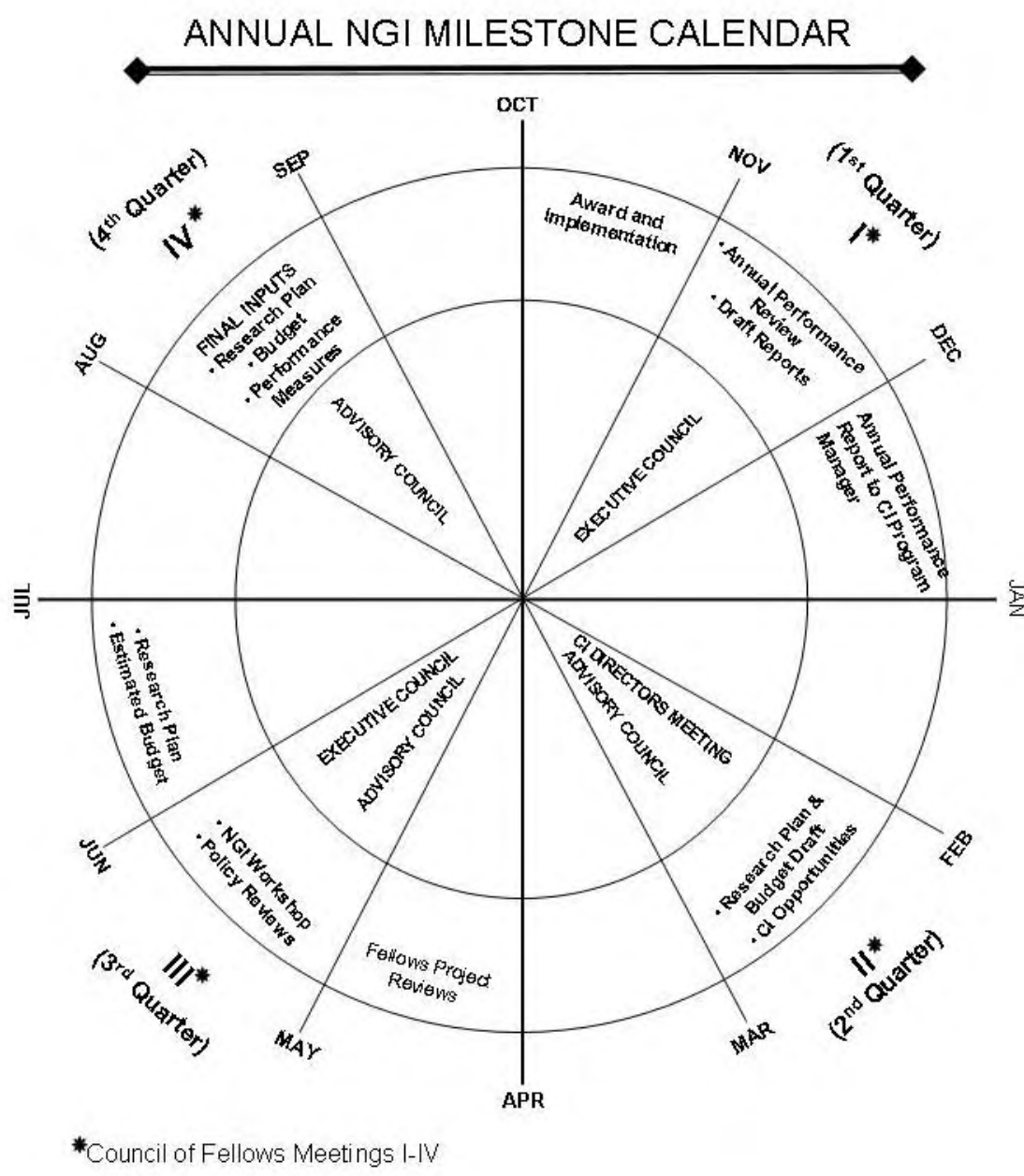


Figure 6.1 : Annual NGI Milestone Calendar

6.3. Priority Milestones

6.3.1. The first milestone is to establish a framework for consistency in project selection, reporting and routine administration, and to achieve full NGI implementation status by the end of June 2007.

The Project Profile task described above and the following additional tasks are designed to bring NGI as quickly as possible into a full implementation mode, and to fulfill all of

its program responsibilities according to a defined schedule by Year 2. In order to accomplish this, the following steps and milestones are necessary.

March, 2007. NOAA and MSU complete a start-up phase that includes a final NGI budget number for Year 2 (thus allowing a final allocation proposals for NOAA and Fellow review), execution of the Memorandum of Agreement (MOA) (thus establishing a robust legal framework for this IP and future years), NOAA review and agreement in principle with this IP, and progress is initiated on NGI performance baselines and measures.

April, 2007. Following the Template at section 5.3.above, NOAA (for its 10 NOAA-led projects) and the Council of Fellows (and their PIs) complete Project Profiles for all Year 1 NGI research projects. Distribute the Year 1 NGI Project Profiles to the NOAA CI Program Manager and NOAA NGI Science Advisor.

May, 2007. Outline a “Draft NGI Research Plan” that combines NGI Year 1 and Year 2 (FY 2006 and 2007) continuing and newly proposed Project Profiles, allocates uncommitted FY 2007 resources to defined projects and among the collaborators, and proposes the major elements of a full Research Plan and estimated budget for FY 2008. This Draft is circulated among the Fellows, to the NOAA Science Advisor, and the CI Program Manager.

May, 2007. Use the Annual Conference as a venue to discuss the Draft NGI Research Plan, resource allocation issues, FY 2008 options and potential changes, budget issues and other matters: among the Fellows, with the CI Program Manager, and the Executive Council or Advisory Council as appropriate.

June, 2007. Complete the NGI Research Plan that dovetails First Year to Second Year activities and provides justification for its budget request to NOAA. Deliver the Research Plan and estimated budget to the CI Program Manager and Grants on Line. Full NGI implementation status will be achieved at this milestone.

6.3.2. The second milestone is to meet and exceed NOAA expectations for early project and program quality and integration, regional support, and performance evaluation for the subsequent years.

August, 2007. MSU shall prepare and circulate to the Council of Fellows for their review a Working Paper that proposes a detailed NGI approach to the Year 2 Implementation Plan, including special attention to assessing the six “Distinctive NGI Challenges” (see above, section 1.2) for the NGI in view of First Year experience, Second Year Research Plan and other relevant factors. This Working Paper will be the focus of the Fellows August 2007 meeting.

September, 2007. After consultation with NOAA, MSU prepares and sends out specific guidance and a format to the Fellows and NOAA-led PIs for the first NGI Annual Performance Report. Guidance will also be provided by MSU for the Council of Fellows

Meeting in November 2007 that will be devoted to evaluation and mid-course issues and corrections.

6.3.3. Subsequent Years. For years that begin after September 2007, activities should follow the cycle depicted in Figure 6.1. above, NGI Annual Milestone Calendar, and aim to accomplish all of the tasks outlined in sections 5.4, 7 and 8.

7. ORGANIZATION AND MANAGEMENT

A demanding management process began with the response to the Announcement, has continued during a prolonged start-up phase, and must continue throughout the life of the Institute. The NGI is organized to meet NOAA and Cooperative Institute policy, legal, program and reporting requirements.

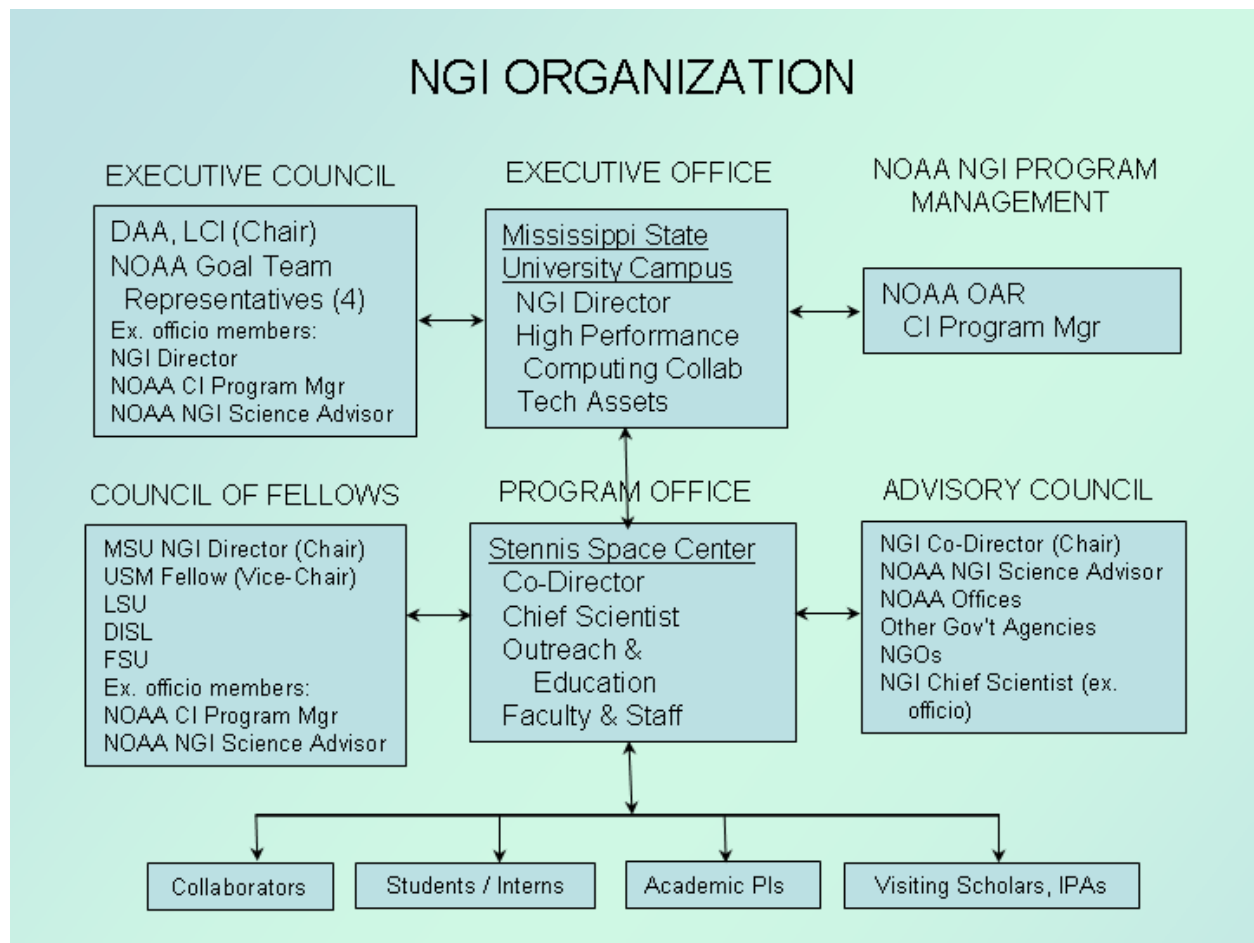


Figure 7.1 : NGI Organization

NGI organization also accounts for a two node executive and program management approach, efficient collaboration of five academic institution members, and developing a regional

community of interest. The NGI management process is broken down into task elements with lead responsibilities assigned to each task area. At the same time, tasks need to be understood in the context of other work that precedes them and those that follow.

7.1. NGI Organization. Figure 7.1 sets forth the NGI Organization. The top row reflects the oversight role of MSU and location of the Director of NGI who reports directly to the MSU Vice President for Research. Located in the High Performance Computing Collaboratory, the NGI MSU Office is led by a tenured faculty Director among whose responsibilities are to serve as primary liaison to NOAA's Executive Council, and as the principal point of contact for the Cooperative Institute Program Manager.

An NGI Program Office is located at the Stennis Space Center, MS and is led by the NGI Co-Director and supported by the MSU team at Stennis, including research and outreach faculty and a Chief Scientist. The NGI Program Office is responsible for maintaining regular interaction with the Council of Fellows, the lead academic body for the NGI, and the Advisory Council and the NOAA NGI Science Advisor. The NGI Program Office has prime responsibility for the day-to-day management of the Institute, with particular reference to Stennis-based and regional coordination, meetings of the Council of Fellows, the Annual Conference and NGI students, contractors and visiting scholars on-site at Stennis.

7.2. NGI Key Functions.

Figure 7.2 combines the organizational arrangements just discussed with the key functions of the Institute. The roles of each functional unit are described here.

7.2.1. Role of the Executive Council: The Executive Council is made up of five Senior NOAA officials, representing the four NOAA Goal Teams, and is chaired by the Deputy Assistant Administrator for Laboratories and Cooperative Institutes. The NOAA Science Advisor, the NGI Director, and the NOAA Cooperative Institutes Program Manager will serve as ex officio members of the Executive Council.

The Executive Council is primarily responsible for broad policy and program direction for the NGI. It will meet at least once yearly to review NGI programs and progress, and to transmit NOAA strategic plans and priorities to the NGI management in order to ensure program alignment with these priorities. In turn, the Executive Council will provide information regarding the NGI successes to the NOAA Administrator to justify inclusion of NGI funding in the NOAA core budget. This NGI is wholly committed to transparency, accountability, governance control, and effective integration through the Executive Council.

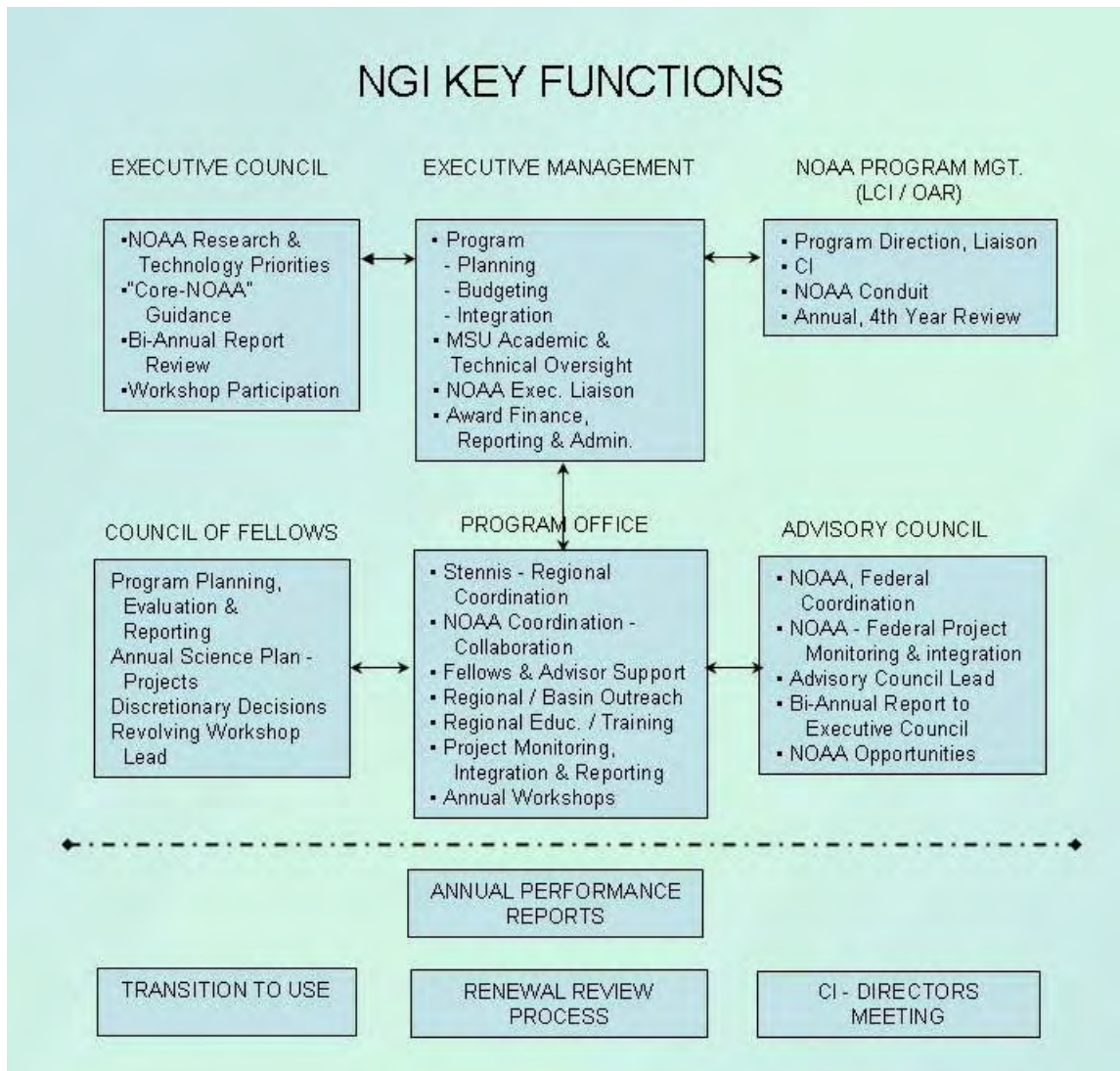


Figure 7.2 : Key NGI Functions

7.2.2. Role of the Council of Fellows: The Council of Fellows is composed of senior scientific/technical representatives from each NGI member academic institution, as well as the NOAA NGI Science Advisor, and the NOAA CI Program Manager. The Council is chaired by the NGI Director, and the vice chair is the USM representative. The Council of Fellows is responsible for development of the IP and its biannual review by the Advisory Council. It will conduct an Annual Program Assessment and Report to NOAA, and oversees the Annual NGI Work Plan. It will receive overarching guidance from the Executive Council, and will build the Annual Work Plan based on needs assessments and recommendations from the Advisory Council. This group will also be responsible for ensuring that the highest quality research is conducted, both through stringent project review prior to implementation and through monitoring progress of these projects once initiated.

7.2.2. Role of the Advisory Council: The Advisory Council serves as the principal interface to the regional stakeholder community of the NGI. It has broad representation from the entities listed in the organizational chart, and meets regularly to identify and prioritize research and educational needs in the Northern Gulf region. The Advisory Council will also provide input on the current research and education/outreach programs of the NGI. The Advisory Council provides a bi-annual report to the NGI Director and Executive Council on its findings and recommendations.

NGI will support the formation and efforts of workgroups around each of the major themes of the NGI. The responsibility of these workgroups will be to develop research approaches that focus on the integration philosophy of the NGI in all aspects of the programs developed. These workgroups may hold workshops and meetings to foster a collaborative atmosphere across institutions, and will be used to generate innovative approaches to research and education by bringing together the often disparate viewpoints of the various disciplines involved.

7.2.4. NOAA Leadership: NOAA administration is responsible for ensuring that agency priorities are effectively represented to the NGI, through the NGI Director. Through the Executive Council, NOAA will transmit these priorities, and will provide programmatic review annually. In addition, NOAA is responsible for integrating the NGI budget into the overall NOAA budget through effective advocacy based upon the merits of the program to the Executive Branch.

7.2.5. Academic Collaborators: The five collaborating academic institutions are responsible for providing primary input into and periodically reviewing and revising as necessary the Implementation Plan for the NGI. The Implementation Plan is the primary reference for the “Annual Work Plan” required by NOAA. Each collaborating institution will develop priority research areas that capitalize on the strengths of each university, promote a strong integrative and collaborative effort between institutions, NOAA line offices and NOAA scientists and ensure that the highest standards of quality in research are maintained.

7.2.6. NOAA Collaborators: NOAA line units (e.g. NCDDC, NDBC, GCSC) are encouraged to provide input on programmatic directions and collaborative activities. Through the NGI Advisory Council, NOAA units will provide critical input into the prioritization of research requirements and thrusts for the NGI, review of research projects developed, and assessment of the research outcomes of these projects. In addition, since a portion of the funds associated with the NGI may be made available to NOAA units through an internal competition, and collaboration with the NGI is an important criterion for selection, the NOAA units receiving these funds are responsible for effective collaboration with the NGI research program through utilization of these funds.

7.2.7. Other Collaborators: A number of other federal agencies, (e.g. EPA, NASA, USACOE, DOT, USGS, USDA, NERR, NRL, MMS), state agencies (e.g.

Departments of Marine Resources, Departments of Environmental Quality) and non-governmental organizations (e.g. Gulf of Mexico Alliance, Coastal States Organization, The Nature Conservancy) will play a substantial role in the activities of the NGI. This involvement will come from at least two paths: leveraged research activities and stakeholder requirements. Collaborators and stakeholders are responsible for providing input into the development of the NGI research program via participation in the Advisory Council. In addition, both the NGI leadership and the collaborating entities are expected to seek out opportunities to leverage resources in joint efforts, thus maximizing the benefits derived from those funded projects.

7.3. Financial Management

The principles and criteria underlying financial management for the NGI include:

- Establish and maintain a solid research and technology program by providing, to the extent that NOAA funding (and outside leverage) allows, an annual “baseline” allocation of funds.
- Allocate resources equitably among the member institutions, recognizing differing roles and responsibilities as established in the NGI proposal and Implementation Plan. Executive and program management activities for this complex, regional undertaking will require approximately 10 percent of the available annual funds allocation.
- Invest in a regional infrastructure, promoting cross-institutional and NOAA collaboration through Fellows consultation and allocating some NGI funds specifically to support this objective.
- Focus on research-to-operations as a guiding principle for project development and execution.
- Embed a strong element of outreach in all funded activities
- Directly link to the regional community through advisory and collaborative activities.
- Demonstrate institutional value and performance compared to NOAA investment – relevance, quality, and delivery.
- Be flexible and adapt, making the NGI responsive to needs as they are identified.
- Leverage resources through other agencies and other NOAA funding sources.

As a result of these considerations, the following framework for NGI resource allocation and discretionary funding is planned (subject to modification as circumstances require.)

The NGI must provide a variety of resources for effective operation of the Institute. A portion of NGI funds will be dedicated to science, technology, and administrative support, as is the case in most leading Cooperative Institute practice (e.g., CIRES, 2001, 2006). Research and outreach projects will be funded through two complementary mechanisms in the NGI: base funding allocated to each university but awarded after individual proposal submissions and internal and external peer review, and limited funds for an internal competition based on short-term, high priority needs identified by the Advisory Council, or to promote the regional, integrative and multi-institution goals of the NGI. Collaboration with NOAA scientists is strongly encouraged, and will be a requirement except in instances where strong need is identified and collaborating NOAA scientists are not available.

7.3.1. Science, Technology and Administrative Support

NGI's distinctive challenges (section 1.2.) , its multi-institutional makeup, its regional emphasis, its emphasis on transition to use, and its broad thematic charter distinguish it from most traditional Cooperative Institutes. As a result of these and other distinguishing characteristics, NGI "administration" must extend far beyond traditional grants management and annual reports. As the title of this sub-section implies, the executive and program management aspects of NGI support involve active management of the science activities between and among perhaps twenty entities, management of the technology opportunities at and around the Stennis Space Center, and such unusual challenges as creating new performance measures (e.g., social benefit metrics) for its multi-party program. As a result, even though the NGI is in its start-up phase, it defines its "Task 1" responsibilities broadly and structures them following CIRES leadership in this area.

7.3.2. Base Funding Allocation

Each university is allocated a portion of the NGI funds as a base from which to develop projects that reflect special capabilities of each institution. Initial Year 1 (FY 2006) levels of funding are on the order of \$2M to MSU, \$700K to USM, and \$500K each to LSU, FSU, and DISL. The Council of Fellows provides review of these projects, to ensure 1) high quality research; 2) regional priorities as expressed through NOAA's Program and Executive Council and the Advisory Council; 3) the leverage of existing university programs; and 4) integration of the land-coast-ocean-atmosphere continuum concept. Project funding is limited to three years, is subject to annual internal review, and may be revised or terminated for substandard-performance.

7.3.3. Collaborative Project Incentives

Funding permitting, resources are set aside each year that can be used to address short-term, high priority needs as identified by the Executive Council, Advisory Council, or Council of Fellows. Based on the nature of the project and need, directed projects or an internal competition will be conducted for these funds each year to encourage the development of innovative research from the at-large scientific community within the member institutions. In most instances collaboration with NOAA scientists is a requirement for utilization of these funds.

7.3.4. Fellowships, Visiting Scholars, Internships, Intergovernmental Personnel Act Sponsorship

The NGI will establish a mechanism to award postdoctoral and doctoral student fellowships associated with the various NGI projects. The postdoctoral fellowships will be awarded for a period of two years and will allow a Postdoctoral Fellow to work in association with one of the NGI projects under the direction of the principal investigator (PI) of that particular project. The doctoral student fellowships will be awarded for a period of two years with the possibility for renewal for an additional year. The Doctoral

Student Fellow will work on dissertation research that contributes directly one of the NGI projects under the direction of the PI for that particular project.

These fellowships will be awarded competitively from a pool of applicants responding to an announcement of opportunity. Prospective fellows for both the postdoctoral and doctoral student fellowships will submit an application to a Fellowship Review Committee composed of PIs from a representative number of projects that include representation from each of the NGI partners. That committee will review all applications and recommend the fellowship finalists to the oversight body for the CI who will give final approval to the finalists and award the fellowships. Fellowship funds will be transferred to the partner institution for the PI that will supervise the Fellow and the funds will be administered by the project PI. This process will be inclusive of all partners in the NGI and that the individual PI of the project with which the Fellow will be associated has direct control over the fellowship funds. Fellowships be awarded through an open and inclusive process where applicants from anywhere may apply and be considered in an open, fair and competitive process.

7.3.5. Funding Leverage

Each member institution will make every effort to 1) leverage NOAA funding to the fullest extent possible, and 2) readily and accurately identify leveraging when it occurs, so that the NGI can report leveraging as it occurs. Review criteria for proposal selection will include leveraging opportunity identified so that all PIs recognize the value leveraging funds bring to their projects, and the overall NGI program. Leveraging can occur through multiple sources – other federal agencies, other NOAA programs, state agencies, industry, and non-governmental organizations.

8. REVIEWS AND REPORTING

Reviews and reporting mission and requirements take several forms. Formal reporting of NGI project and program performance follows a specific plan. Less formal activities and accomplishments are reported to the public through various web-based, scientific venues and mass media venues.

8.1. Merit Review and Renewal. The NGI IP operation specifically supports a stringent, top level NOAA review that begins just over two years downstream from the beginning of this Implementation Plan. “**Figure 8.1: Merit Review and Renewal Calendar**” offers a preview of the merit review and renewal tasks that begin in Year 3 (three) of the program and that will overlay NGI’s continuing research and technology activities in Calendar Year 2009.

Figure 8.1 outlines the process and milestones for the merit review and renewal activities that will largely determine whether or not NOAA supports a second five-year award to NGI. Given that this rigorous review begins a little more than two and a half years from the inception of the NGI, it is important that all those involved with NGI understand and acknowledge the importance of this NGI requirement. Figure 8.1 also underscores how important it is to quickly

move NGI to full implementation status, and to turn leadership attention to setting performance baselines, reporting, metrics, and other precursors to a successful renewal campaign.

NGI 5 Year Merit Review Schedule

Task Step	Date for NGI review	Months til end of 5-year CI Agreement	Task Description, per CI Handbook
1	Oct 2008	36	Line Office (LO) identifies NOAA review coordinator and coordinates with the CI to schedule the review.
2	Oct 2008	36	LO Assistant Administrator sends review request to Science Advisory Board (SAB) chairperson.
3	Jan 2009	32	LO coordinates with CI to obtain suggested reviewers, and checks with reviewers for availability.
4	Feb 2009	31	LO identifies administrative reviewers, including at least one representative from the Grants Management Division (GMD).
5	Mar 2009	30	LO coordinates with the NOAA SAB for approval of science reviewers.
6	May 2009	28	SAB sends formal invitation letter to science and administrative reviewers.
7	June 2009	27	Responsibilities sent to the reviewers. This should include the following: 1) A brief summary of the NOAA review process; 2) CVs of the review team; 3) The expected time commitment of the reviewers; 4) Panel expectations (Why are they there?) 5) A summary of the three tier rating system; 6) A description of the format for the final report.
8	June 2009	27	LO coordinates with CI to identify review attendees, including the CI's University/Institution's Office of Sponsored Research, the CI Administrative Staff/Representatives, and others at the invitation of the Director of the CI.
9	June 2009	27	CI begins preparation of a briefing book organized around the review guidelines and science and administrative review questions. Three-ring notebooks are suggested, and the following material should be included: Review Agenda One-page synopsis of the CI List of Research Themes (note if there will be additions for next award) MOU/MOA

Task Step	Date for NCI review	Months til end of 5-year CI Agreement	Task Description, per CI Handbook
			<p>Five Year Plan (Original CI proposal with performance measures)</p> <p>CI budget information (synopsis of research by themes)</p> <p>Annual Report/Latest Report</p> <p>List of Executive Board Members</p> <p>List of Board of Fellows</p> <p>Organization Chart of the CI</p> <p>Web page URL/other locations for information on CI</p> <p>Technical reviewer's vitae</p> <p>Other information the CI feels will be useful</p>
10	July 2009	26	LO and CI finalize review agenda. The agenda should include time for the following: 1) The review teams (science and administrative) to meet privately before the review sessions; 2) Formal presentations by CI director and staff; 3) Short science presentations: 4) A poster session if desired; 5) Time for the reviews team to meet privately after the formal review activities; 6) A debriefing and preliminary feedback session with the review teams and selected CI representatives.
11	July 2009	26	LO begins preparation of travel orders for LO staff and review teams.
12	Sept 2009	24.5	CI completes briefing book and sends copies directly to the review panel and the LO review coordinator.
13	Oct 2009	24	Science and Administrative reviews occur.
14	Dec 2009	22	Science and Administrative review teams complete preliminary review reports that include overall rating (e.g., Outstanding, Satisfactory, Unsatisfactory).
15	Dec 2009	22	LO submits preliminary reports to CI to check for accuracy. Any corrections are forwarded back to the LO.
16	Jan 2010	21	LO submits the recommended corrections to reviewers for review and final approval.
17	Feb 2010	20	LO submits final report to SAB and schedules presentation by the review chair at the next SAB meeting. CI Director and LO CI Program Manager and other representatives should attend the presentation.
18	June 2010	16	SAB presentation.
19	July 2010	15	SAB submits report to Under Secretary and LO AA.
20	July 2010	15	LO makes recommendation for renewal, conditional renewal or termination to the RC through the NOAA CI committee based upon SAB response.

Task Step	Date for NGI review	Months til end of 5-year CI Agreement	Task Description, per CI Handbook
21	Aug 2010	14	LO communicates renewal recommendation to CI.
22	Sept 2010	13	LO sends response to the review to the SAB.
23	Oct 2010	12	LO transmits review reports to the CI and its parent institution. The LO works with the CI and GMD to address recommendations and process the renewal if appropriate.

Figure 8.1 : NGI 5 Year Merit Review Schedule

8.2. CI Handbook Guidelines for Review and Renewal. – Section 5 of the draft CI Handbook provides guidance that should be anticipated by the NGI early in its implementation since the process is both demanding and arrives early in the implementation rollout.

The review preparation schedule begins 36 months prior to the end of the five year agreement period. Table 1 at page 34 of the Handbook outlines the preparations required for the process. Lead responsibilities for the early preparations fall upon NOAA’s “Line Office”, in NGI’s case, OAR. It should be noted in this regard that NOAA is chronically short handed and will appreciate NGI’s active support throughout this process.

8.2.1. Twenty-seven months prior to the end of the initial award, NGI begins preparation of a briefing book “organized around the review guidelines (ultimately coming from NOAA’s Science Advisory Board) involving science and NGI support functions.

8.2.2. Twenty-four months prior, science and “administrative” reviews take place and over a two month period reports and review ratings are formulated by NOAA Review Teams.

8.2.3. NOAA submits its preliminary reports to NGI about 22 months prior to the end of the award period for its review and response; a final NOAA report and rating goes forward to the Science Advisory Board and renewal recommendations are forwarded to NGI fourteen months prior to the close of the period.

8.3. Annual Report and Reviews / Building Blocks – The compilation of the NGI Annual Report provides the framework for regular evaluation of research, transition and administration. The annual report, an explicit deliverable under NOAA Award OAR-CIPO-2006-2000641, shall reflect the efforts of all NGI participants. Delivery of the Annual Report to the CI program manager is made in December of each year. Working back from that date provides the following annual report review and preparation dates, with council members and principal investigators responsible for providing properly formatted deliverables on a timely basis to ensure sufficient time for preparation and delivery of reports.

With reference to Figure 8.1 above, the review and reporting cycle includes:

June – Annual Research Plan Drafted

August – Research Plan and Budget finalized

October – Projects awarded for Next Year

November – Annual Performance Review (tied to performance metrics)

December – Annual Performance Report due to CI Program Office.

The annual report will serve as the building blocks for the subsequent years research and collaboration and infrastructure development. It will also support the larger 5 year institution review.

8.4. Transition and Outreach Reporting

Advances in research, knowledge, and technology are reported to the public in coordination with and in a complimentary manner to build awareness and stewardship throughout the Northern Gulf region. Standard and innovative venues are used to reach underserved citizenry.

9. CHANGING

Any member of the Council of Fellows can propose an amendment to this plan. The proposed change will be submitted in writing to the full Council. The final form will be voted on at the next meeting (telephonic or in person) of the Council. A majority vote (at least 3 of the members) is required to amend the plan.

10. REFERENCES

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- Cortinas, John V., "Guidance for OAR Cooperative Institute Annual Reports," Memorandum, June 26, 2006.
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Appendices



NGI
NORTHERN GULF INSTITUTE

Appendix A: NGI Projects by NOAA Line Offices

	Proposed First Year Research Efforts	NOAA Line Offices				
		NESD S	NMFS	NOS	NWS	OAR
MSU	Visualization Technologies for Improving Public Understanding of Catastrophic Events			X	X	X
	Valuing Catastrophic Natural Events & Develop Policies to Minimize Damages in Coastal Communities		X	X		X
	Improving Hurricane Intensity & Landfall Estimation with Refined Modeling	X		X	X	X
	NGM CI Outreach Efforts			X	X	
	Watershed Modeling Improvements to Enhance Coastal Ecosystems	X	X	X	X	X
	Spatial Technology & HPC for Improving Prediction of Surface Water Quality		X	X	X	X
	Semantics Driven Framework for Resource & Knowledge Discovery in IOOS		X	X		X
	Modeling Mobile Bay Sediments & Pollutants with New Technologies		X	X		
	Impacts of Ordinances, Outreach & Enforcement on the Resiliency of Coastal Watersheds			X		
USM	Monitoring & Assessment of Coastal & Marine Ecosystems in the Northern Gulf		X	X		X
	Ecosystem-Based Fisheries Management		X	X		
	Applications of Circulation Modeling & Observations for Ecosystem Management			X	X	X
	Molecular Source Tracking of Microbial Contamination		X	X		
	Remote Sensing & Optical Detection of HABs	X	X	X		X
	Assessment of Localized Hypoxia in Shelf Waters		X	X		X
	Improvements to Coastal Mapping Methodologies & Databases			X		X
LSU	Coastal Ecosystem Forecasting & Risk Management: <i>Integrated Modeling - Observation Module</i>	X	X	X	X	X
	Coastal Ecosystem Forecasting & Risk Management: <i>Geophysical Module</i>	X		X	X	X
	Coastal Ecosystem Forecasting & Risk Management: <i>Biogeochemistry Module</i>	X		X		X
	Coastal Ecosystem Forecasting & Risk Management: <i>Primary Productivity Module</i>		X	X		
	Coastal Ecosystem Forecasting & Risk Management: <i>Secondary Productivity and Food Webs Module</i>		X	X		
	Coastal Ecosystem Forecasting & Risk Management: <i>Oceans & Public Health Module</i>		X	X		
FSU	Monitoring & assessment of coastal & Marine Ecosystems in the Northeastern Gulf		X	X		X
	Circulation Modeling & Observations for Ecosystem Management	X	X	X		X
	Atmospheric Modeling			X	X	X
DISL	Oyster Reef & Estuarine Landscape Restoration		X	X		X
	K-12 Education		X	X		

Appendix B: NGI Projects by NOAA Goals

	NGI First Year Research Efforts	NOAA Themes			
		Climate	Ecosystem	Weather & Water	Commerce & Transport
MSU	06-MSU-01 Develop Foundation for Analysis of Natural & Human-Induced Disturbances to Coastal Economies		X	X	
	06-MSU -02 Assessing the Impact		X	X	
	06-MSU-03 Watershed Modelling		X	X	
	06-MSU-04 Spatial Technology		X	X	
	06-MSU-05 Modeling Mobile Bay		X	X	X
	06-MSU-06 Visualization			X	
	06-MSU-07 An Information Semantic	X	X	X	X
	06-MSU-08 NGI Outreach	X	X	X	X
	06-MSU-09 Improving Hurricane			X	
USM	06-USM-01 Microbial Source Tracking		X	X	
	06-USM-02 Utility of Ionosphere . . .	X	X	X	X
	06-USM-03 Monitoirng and assessment		X	X	
	06-USM-04 Interaction between off-shore circulation		X	X	
	06-USM-05 Satellite & In Situ Optical Assessment of Algal Bloom		X	X	
	06-USM-06 Coordination of USM NGI	X	X	X	X
	06-USM-07 Quantifying Ecosystem Services		X	X	
	06-USM-08 Macrofaunal Indicators of Hypoxia		X	X	
LSU	06-LSU-01 Delta Ecosystem		X	X	
	06-LSU-02 Public Health and Stressors		X	X	
	06-LSU-03 Trophic Linkages		X	X	
	06-LSU-04 Investigating material exchange		X	X	
FSU	06-FSU-01 Oceanographic Modeling	X	X	X	
DISL	06-DISL-02 Habitat Restoration Research at DISL		X	X	
	06-DISL-01 Marine Education and Outreach at DISL		X	X	