Climate and Societal Interactions
FY16 Information Sheet

The Climate and Societal Interactions (CSI) Program provides leadership on decision support research, assessments, and climate services development activities to help society adapt to a changing climate. CSI supports both U.S. - and internationally - focused projects to facilitate community building and learning about the challenges and solutions associated with understanding and meeting the climate-related needs of decision makers. The overarching goals of the CSI Program are the following:

1. Support for innovative and broadly applicable and transferable approaches for decision-making, especially for risk characterization in the context of a variable and changing climate;
2. Establishment of a network of regionally scoped, long-term efforts to inform climate risk management and decision making; and
3. Promotion of the transfer of climate knowledge, tools, products, and services within NOAA, across the federal government, nationally, and internationally.

CSI will also ensure alignment with the priorities of a number of interagency efforts such as the: President's Climate Action Plan, National Climate Assessment; Interagency Climate Change Adaptation Task Force; National Integrated Drought Information System Act (P.L. 109-430); National Ocean Council; the National Fish, Wildlife, and Plants Climate Adaptation Strategy; and the Global Framework for Climate Services (GFCS) initiative. For FY2015, the three CSI programs holding competitions under this Federal Funding Opportunity include the Regional Integrated Sciences and Assessments (RISA) program, the Sectoral Applications Research Program, and the Coastal and Ocean Climate Applications (COCA) program.[1]

The following table provides pertinent information about each program and a description of each of the competitions follows.

Competition	Competition Number	Competition Manger	Email@noaa.gov
SARP		Nancy Beller-Simms	Nancy.Beller-simms
SARP - NIDIS		Nancy Beller-Simms	Nancy.Beller-simms
COCA		Adrienne Antoine	Adrienne.Antoine
RISA – Existing Regions		Caitlin Simpson & Sarah Close	Caitlin.Simpson Sarah.Close
RISA- New Regions		Caitlin Simpson & Sarah Close	Caitlin.Simpson Sarah.Close
The number of projects funded and funding amount of all projects are subject to the availability of funding.			

Note that each of these competitions will be holding informational webcasts to discuss the background of these programs and expectations for this competition, as well as to address questions related to the development and submission of letters of intent and proposals.

[1] Refer to program websites for additional information

Please monitor the NOAA Climate Program Office website for times and accessibility information. Potential principal investigators can also contact the competition managers directly if needed.

Sectoral Applications Research Program (SARP) and Coping with Drought in Support of the National Integrated Drought Information System (NIDIS)

SARP addresses the needs of stakeholders within key socioeconomic sectors working to incorporate climate variability and change into planning and preparedness.

In addition, SARP funds NIDIS projects through the Coping with Drought Initiative. NIDIS provides dynamic and easily accessible drought information for the nation through drought research focusing on risk assessment, forecasting, management, and development of decision-support resources.

Critical components of SARP and Coping with Drought projects include:

- Involvement of stakeholders and/or policy makers on the study team

- Where possible and/or applicable, demonstration of inclusion of NOAA:
    - data,
    - models (e.g., National Multi-Model Ensemble (NMME) - http://www.cpc.ncep.noaa.gov/products/NMME/),
    - efforts (e.g., on extreme events - http://www.ncdc.noaa.gov/climate-information/extreme-events) or
    - tools (e.g., toolkit.climate.gov)

  to further enhance NOAA's ability to provide critical scientific information to users and/or participation, where relevant, of NOAA-related entities (e.g., Laboratories, Cooperative Institutes, Centers (e.g. River Forecast Centers), and Regional Climate Service Directors (RCSDs); Regional Climate Centers (RCCs); Regional Integrated Sciences and Assessment (RISAs) teams; etc.).

- For those with topics related to drought, a clear partnership must be demonstrated with NIDIS staff, Drought Early Warning Systems, and/or NIDIS working groups.

- Exhibition of how the results of the funded work will be transferable/transferred to other locations

- Partnerships, where relevant, with larger organizations, foundations, federations and/or the private sector to assure that the results of these studies are shared and incorporated in other locales.

- Evaluation method(s) to assess the outcomes of the project.

Potential applicants for this announcement may wish to participate in a webinar specific to this announcement. Information on the timing and registration procedures should check regularly on the SARP website for specifics. See:

http://cpo.noaa.gov/ClimatePrograms/ClimateandSocietalInteractions/SARPProgram.aspx.

For FY16, SARP is soliciting proposals for two focus areas: 1) extreme events preparedness, planning, and adaptation within the water sector and 2) projects supporting the Coping with Drought Initiative with NIDIS.

1) Extreme Events Preparedness, Planning, and Adaptation Within the Water Sector

For FY16, SARP will award grants focused on strategies for building sector-based community resilience for humans to the impact of extreme events on water resources and water-resource dependent activities (e.g., land use, watershed and water utility planning, emergency preparedness). For purposes of this competition, climate and weather extremes will include: "the occurrence of a value of a weather or climate variable above a threshold value near the upper (or lower) ends of the range of observed values of the variable" (IPCC, 2012 - http://ipcc-wg2.gov/SREX/). It may include a cumulative series of weather events (e.g., a series of cyclonic events or floods) or a single event that lasts more than two weeks (e.g., a drought).

SARP will be approaching this topic from two different temporal vantage points. These competitions include: (A) Preparing for Near-Term Anticipated Extreme Precipitation Events and (B) Planning for Future Extreme Events

A. Preparing for Anticipated Near-Term Extreme Precipitation Events
A major finding from a recent study on "Water Resource Strategies and Information Needs in Response to Extreme Weather/Climate Events" is that to build resilience, water utilities and communities must embrace both emergency response and long-term preparedness (http://cpo.noaa.gov/ClimatePrograms/ClimateandSocietalInteractions/SARPProgram/ExtremeEventsCaseStudies.aspx). NOAA is particularly interested in developing early warning systems so that individuals and communities have sufficient time to prepare for an upcoming event. A goal of this call is to improve our understanding and expanding linkages between extreme event forecasts, the emergency planning sectors, and the operations of water, wastewater, stormwater, and urban drainage management services to the public.

This call targets disaster risk reduction with those involved in the provision of water to the public and focuses on extreme precipitation and flooding associated with events such as El Nino, La Nina, Atmospheric Rivers, etc. The proposed work should be specifically geared towards the weather to climate timescale, i.e. sub-seasonal (3 weeks), seasonal, and annual extreme precipitation and flooding events. PIs have the option of applying for a one- or two-year grant with a limit of $150,000 per year. Specific topics include the following options:

1. Developing a climate focus within community multi-hazard planning, including frameworks for reducing impacts of anticipated extreme events and building resilience for future events (i.e., mainstreaming and/or customizing climate information for decision making)

2. Identifying and/or creating methodologies to determine the costs of impacts, the benefits of adaptation options and/or the costs of inaction (including the avoided costs of damage to enhance preparedness) to justify selection of adaptation measures for water resource planning.

3. Identifying innovations including socioeconomic and institutional mechanisms (e.g., utility involvement in novel configurations of land use, regional collaborations, etc.) that would increase adaptive capacity.

B. Planning for Future Extreme Events

Communities and water utilities are becoming more aware of the need to include "climate" in their long term planning strategies and documents, yet, few do. The results of these grants will inform NOAA and the public of how climate data, information, forecasts, methodologies etc. can be used in practical and existing longer term planning efforts. Specific topics include:

1. Identifying/developing methodologies for anticipating and planning for decision 'Tipping Points' (or thresholds) in the context of emerging extreme events;

2. Understanding/communicating methods or approaches for including climate science in comprehensive planning documents and activities (e.g., master, watershed, state plans, etc.)

Please specify which option(s) you are addressing on the cover page of your proposal. Theoretically, one could address all of these options, but a more refined proposal will most likely directly address one and no more than two options.

SARP: Coping with Drought in Support of the National Integrated Drought Information System (NIDIS)

In FY16, the SARP portion of the Coping with Drought Initiative will continue to focus on advancing specific NIDIS regional drought early warning systems, targeting specific communities and sectors within these areas. The four targeted regions and their associated focus areas include the:

- Missouri River Basin, with an agricultural and/or water supply focus. To respond to this location, PIs may consider reviewing documents found on: http://www.drought.gov/drought/regional-programs/mrb/reports-assessments-and-outlooks.
- Midwest along the Mississippi River, with a transportation, agricultural and/or water supply focus. To respond to this location, PIs may consider reviewing documents found on: http://www.drought.gov/drought/regional-programs/mrb/reports-assessments-and-outlooks.

- Colorado River Basin, with a water supply, recreation, tourism and/or energy focus. To respond to this region, PIs may consider reviewing these documents: Draft Colorado State water plan and the Colorado Vulnerability Study.
- California, with a water, agricultural, and/or wildfire focus. To respond to this location, PIs may consider reviewing the California Water Action Plan.

Within these regions, we will be funding one-year (with total project costs not to exceed $150,000) and two-year (with total project costs not to exceed $300,000) projects that must contribute to the development of the NIDIS effort through one or more of the following objectives:

- Assessing direct and higher order economic impacts and developing socio-economic baselines.
- Characterizing the readiness of institutions to utilize early warning information (e.g. use of indicators and triggers in drought planning) to develop their own risk based scenarios and meet their drought risk management goals.
- Identifying how soft path approaches such as natural, socioeconomic, and institutional (e.g. green infrastructure, regional collaborative land use planning and protection processes), contribute to options for water resource management that could enhance adaptive capacity.
- Characterizing the role of an early warning system(s) in the context of climate adaptation and resilience.

Please specify which option(s) you are addressing on the cover page of your proposal. Theoretically, one could address all of these options, but a more refined proposal will most likely directly address one and no more than two options.

Examples of previously funded drought projects that work in conjunction with SARP can be found here:
http://cpo.noaa.gov/ClimatePrograms/ClimateandSocietalInteractions/SARPProgram.aspx.

Coastal and Ocean Climate Applications (COCA)

The Coastal and Ocean Climate Applications (COCA) program addresses the needs of decision makers dealing with pressing climate-related issues in coastal and marine environments. The program is designed to support interdisciplinary teams of researchers in the development and transition of climate-related research and information to advance decision-making in coastal communities and coastal and marine ecosystems. Outcomes of COCA projects inform the response and coping capacity of decision-making and management communities to climate variability and change. In addition, projects must have a clear plan for dissemination of the findings to relevant audiences.

COCA FY16: Ecosystem Services for a Resilient Coast in a Changing Climate

With $1 trillion of the gross domestic product coming from the coast and more than 50% of the US population living in coastal watersheds counties, supporting coastal community and ecosystem resilience is a priority.[2,3] However, human pressures, such as coastal development, pollution, and habitat destruction, are impacting the health and sustainability of coastal ecosystems. As human pressures continue to increase along the coast, so too will the stress placed on these vital ecosystems. In addition to these non-climatic stressors, impacts from changing climate conditions are impacting coastal ecosystems and the communities and economies that depend on them.[4]

An important part of coastal resilience is the focus on the use of natural and nature based features (NNBF)[5] and the ecosystem services[6] they provide. As decision-makers plan for a changing climate, there is increased recognition of the importance of coastal ecosystems and their services, resulting in increased demand from managers and decision makers for information on valuating ecosystem services as well as mechanisms to incorporate this information into coastal decision-making. In response, federal agencies, including NOAA, are prioritizing efforts to address research gaps and support decision makers in use of NNBF approaches in coastal management.

There are several terms used around this topic, e.g. natural infrastructure, green infrastructure, green-grey infrastructure, natural and nature based features, etc. For this

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[2] Global Climate Change Impacts in the United States. Thomas R. Karl, Jerry M. Melillo, and Thomas C. Peterson, (eds.). Cambridge University Press, 2009

[3] U.S. Census Bureau. 2010: Population of U.S. Cities. http://www.census.gov

[4] Global Climate Change Impacts in the United States. Thomas R. Karl, Jerry M. Melillo, and Thomas C. Peterson, (eds.). Cambridge University Press, 2009.

[5] Natural Features are created and evolve over time through the actions of physical, biological, geologic, and chemical processes operating in nature. Natural coastal features take a variety of forms, including reefs (e.g., coral and oyster), barrier islands, dunes, beaches, wetlands, and maritime forests. The relationships and interactions among the natural and built features comprising the coastal system are important variables determining coastal vulnerability, reliability, risk, and resilience. Nature-Based Features are those that may mimic characteristics of natural features but are created by human design, engineering, and construction to provide specific services such as coastal risk reduction. The combination of both natural and nature-based features is referred to collectively as nature and nature-based features (NNBF). U.S. Army Corps of Engineers (USACE) in Use of Natural and Nature-Based Features (NNBF) for Coastal Resilience: Final Report

[6] Ecosystem services are the benefits (e.g. food, flood protection, opportunities for recreation) that ecosystems provide to people. Ecosystems and Human Well-Being: Current State and Trends: Findings of the Condition and Trends Working Group, Millennium Ecosystem Assessment. Rashid Hassan, Robert Scholes, Neville Ash (eds). Island Press, 2005.

announcement, the term NNBF will be used as defined in the U.S. Army Corps of Engineers (USACE) *Use of Natural and Nature-Based Features (NNBF) for Coastal Resilience: Final Report*. This report defines NNBF as the use of natural resources (e.g. wetlands, beaches, dunes) as well as more hybrid approaches that incorporate natural features.

For FY16, COCA will support interdisciplinary applied research projects focused on 1) the development and application of methodologies to value ecosystems services and NNBF approaches; and 2) mechanisms to incorporate these approaches into coastal adaptation efforts to support sustainable coastal communities and ecosystems in a changing climate. **COCA intends to support projects up to $300,000 for up to two years.** *The number of projects funded and funding amount of all projects are subject to the availability of funding.*

All projects must:

1. Advance the application and integration of climate–related information into coastal and marine decision-making.
2. Collaborate with and/or leverage relevant research and decision-making institutions in the area of study, e.g.: NOAA Sea Grant, Office for Coastal Management, National Center for Coastal and Ocean Research (NCCOS), and Office of Habitat Conservation; non-governmental organizations; academic institutions; state and local governments; private sector organizations; other federal agencies (e.g. USACE, Department of the Interior (DOI), Environmental Protection Agency); etc
3. Promote collaboration between scientists (e.g. physical, ecological, social, economic, etc.), engineers, and decision makers (e.g. natural resource managers, sustainability practitioners, Federal/state/local officials).
4. Ensure the science, approaches, lessons learned, and/or tools developed have application and/or transferability beyond the region of study.
5. Where applicable, build off existing research/efforts to support the use of NNBF approaches (e.g. USACE Comprehensives Study, DOI Hurricane Sandy Coastal Resiliency Competitive Grant Program, Housing and Urban Development Rebuild by Design, MARCO, NOAA NCCOS Request for Proposals, etc).

Priority Areas of Research include:

- Improve understanding and value of the multiple benefits provided by NNBF approaches
- Develop estimates of the economic value of ecosystem services
- Assess costs/benefits/tradeoffs and uncertainties associated with integrating ecosystem services into coastal adaptation efforts
- Develop tools, resources, and/or guidance that builds the capacity of coastal and marine decision makers to advance the integration of ecosystem services and NNBF approaches into coastal planning and management decisions

Additional Information for the SARP and COCA Programs

Specifics about the Proposal
Proposals that can show that they are building on what is already known from the published literature about the proposed topic prove that the PIs have a comprehension of the topic and that their proposed work will augment existing science and applications capacity. Information about current and previously funded projects are listed on the SARP and COCA websites.

Nature of Investigator Teams
Multidisciplinary teams of investigators are often best suited for addressing the complex issues related to climate, society and enhanced adaptation through the use of science and technology. Previous successful projects/teams have integrated social with natural and/or physical science components to form a more comprehensive analysis of the dynamics of climate-human-natural interactions. The proposal should include an explanation of the roles of the investigators and how the team will interact and integrate the multiple components. Investigators who will not be requesting funds for salaries must also be listed, along with their estimated time of commitment.

Partners
We encourage partnerships and collaborations between researchers and critical decision-making institutions in the region of study (see bullets 2 and 5 above). Any in-kind time should be reported within the proposal. Letters of support, or commitment, from partners are encouraged to accompany the proposals.

Cost-sharing
Cost, leveraging, and in-kind sharing of resources is encouraged and should be reported within the proposal.

Interaction with NOAA
Applicants whose proposals are chosen for funding will be expected to undertake an ongoing dialogue with the NOAA Climate Program Office and program managers and will be expected to submit annual reports and respond to periodic data requests, including information about the climate information needs of decision makers involved in their projects.

Regional Integrated Sciences and Assessments (RISA) Program

The NOAA Climate Program Office's (CPO) Regional Integrated Sciences and Assessments (RISA) program supports research teams that help expand and build the capacity of those seeking to prepare for and adapt to climate variability and change. RISA teams conduct innovative, interdisciplinary, user-inspired, and regionally relevant research that informs resource management and public policy. Central to the RISA approach are commitments to process, partnership, and trust building. CPO funds eleven different RISA teams across the United States (US) and Pacific Islands, many of which are a model for interdisciplinary science and assessment.

NOAA's RISA program is a part of CPO's Climate and Societal Interactions (CSI) division. CSI provides leadership and support for decision support research, assessments and climate services development activities in support of adaptation. In addition to RISA, CSI's programs include the International Research and Applications Project (IRAP), the Sectoral Applications Research Program (SARP), the National Integrated Drought Information System (NIDIS), and the Coastal and Ocean Climate Applications program (COCA).

This section contains the details of the RISA competition for FY 2016. We are soliciting proposals to fund one RISA team in up to four of the following regions of the US where there are ongoing RISA activities ("Competition 1 -RISA Existing Regions"): Alaska, California-Nevada, the Carolinas, and the Southeast US. The number of regions funded will depend on Congressional appropriations. We are also soliciting proposals to fund up to one RISA team in each of two new regions for the RISA program ("Competition 2 - RISA New Regions"): Midwest and Mid-Atlantic. The two new regions will be contingent upon an increase for the RISA program in the FY 2016 President's budget request to Congress.

1. Geographic Scope

Regions have been an organizing influence for both decision makers and scientists working on climate adaptation. Recognizable climate patterns, such as the El Niño Southern Oscillation (ENSO), emerge at the regional level where our understanding of observations

and models coalesce. Critical resources for society are managed in a context of regional systems, such as water supply and human populations. Multiple scales of governance (local, state, and federal) with complex institutional relationships can be examined across a region. Climate information (i.e. data, science, research, etc.) developed within these contexts and working across spatial and temporal scales resonates with people making decisions on the ground.

Within the general guidelines provided for each region, applicants should develop a proposal that is manageable in scope and has the capacity to become an effective RISA endeavor. Current RISA regions generally cover two to four states, large watershed boundaries, or issue-focused areas (e.g., the urbanized, heavily populated corridor between Boston, New York, and Philadelphia). The geographic focus should also allow for work within and across sectors. For example, a geographic focus defined by a watershed area should not preclude research on urban health or agriculture, and vice-versa.

Competition 1 - RISA Existing Regions

The RISA program is soliciting proposals for four existing regions in FY2016:

- **Alaska**
- **California/Nevada**
- **Carolinas:** North and South Carolina, could also include southern Virginia for relevant issues
- **Southeast:** Georgia, Florida, and Alabama

Competition 2 - RISA New Regions

With a later proposal due date of ***December 15, 2015***, the RISA program is soliciting proposals for two new regions:

- **Mid-Atlantic:** To include the Chesapeake Bay watershed (could include Delaware, DC, Maryland, Pennsylvania, Virginia and West Virginia or a subset thereof)
- **Midwest:** To include a subset of the region of Ohio, Indiana, Illinois, Iowa, Kentucky, and Missouri (2-3 states would be a manageable RISA region); note that the Great Lakes watershed is already covered by an existing RISA team.

The funding of these two new regions of the Mid-Atlantic and Midwest is dependent on Congressional appropriations and in particular on an increase in funding to the RISA program as stipulated in the President's Budget for FY 2016.

Applicants are encouraged to contact the RISA Program team at NOAA's Climate Program Office: oar.cpo.risa@noaa.gov.

Applicants are also encouraged to speak with NOAA's Regional Climate Services Director(s) (RCSD; http://www.rcsdhome.org/) in their region regarding how the priorities in the

region relate to the mission of NOAA as well as the priorities of federal, regional, state and local partners.

2. Issue Focus

Applicants should consider tackling interconnections among multiple issues relevant to a region as opposed to an individual project addressing site-specific analysis. Climate variability and change will have implications for a myriad of interconnected management and planning decisions in the region. From their own research and interactions with decision makers, applicants should identify the most important climate-sensitive issues and management challenges for their proposed region. Applicants should also consider NOAA mission-oriented topics that could benefit from the work of a RISA who could integrate information from and work across multiple issues. RISA activities may address the societal challenges identified in NOAA's Next-Generation Strategic Plan (NGSP): i) climate impacts on water resources; ii) coasts and climate resilience; iii) sustainability of marine ecosystems; and iv) changes in the extremes of weather and climate. These efforts support NOAA's vision to create and sustain enhanced resilience in ecosystems, communities, and economies, as outlined in the NGSP. We do not, however, anticipate that a proposed RISA would work solely in these areas.

Specific issues of focus will naturally vary for each region, but there are overarching themes that may be addressed. Implications of climate variability and change on water management issues are of concern in many regions and contexts. For instance, competing needs across vulnerable sectors and scales (e.g. urban to rural); intersections of water management issues across communities, agriculture, industry, and public lands; and drought impacts and the use of climate and drought information (e.g. seasonal outlooks, evapotranspiration data, early warning information) in planning may be areas of focus. Emerging threats or vulnerabilities to communities, resources, and ecosystems due to climate variability or change, including extreme events, such as wildfire, flooding, drought, and other hazards could be investigated. The implications for risk response and resilience and preparedness planning in the context of these threats could be considered. Urban areas are also an important frontier for understanding the physical and societal impacts of climate variability and change, particularly in the context of vulnerable populations, public health, coastal flooding, and other issues. The RISA approach may also be well suited in some regions to investigating climate-sensitive issues that arise at the intersection of communities (local and state; urban and rural) and surrounding public, managed, or working lands and private industry.

For each region, it is important for applicants to consider how they will work with additional regional networks where applicable (e.g. USDA Climate Hubs and Cooperative Extension, DOI Climate Science Centers (CSCs) and Landscape Conservation Cooperatives (LCCs)) as well as existing NOAA assets in the regions (e.g. NIDIS Regional Drought Early Warning System, Regional Climate Centers, Regional Climate Services Directors, National Weather Service offices, Sea Grant, etc.).

For climate and conservation management issues, applicants must identify what a RISA would uniquely offer on these issues in comparison to what a Department of Interior Climate Science Center or other regional entity is or will be addressing. Similarly, for climate and agricultural issues, applicants should identify a RISA niche that is distinct from USDA Hubs efforts. While distinguishing RISA efforts from those of other regional networks is important, we encourage applicants to consider where they could partner with these, and other, networks to achieve their outcomes, and how the work of a RISA would benefit from these interactions.

The partnership between RISA and NIDIS is longstanding and has served both the NIDIS network of drought early warning and the need to improve our understanding of the drought among a set of interacting conditions in watersheds across the country. As we continue to advance this partnership, research conducted within the RISAs is needed to help advance development of the early warning networks and deepen our understanding of information systems and their connections to planning and implementation processes. Teams from regions serving the goals of the NIDIS Program should address their specific research contributions to risk communication, risk assessment, forecasting, management and evaluation within the context of regional trends and contributions to further development of early warning systems. Proposed activities in regions with NIDIS Regional Drought Early Warning Systems (RDEWS) (see www.drought.gov, regional programs) should include a significant component on how the proposed RISA efforts will contribute to the RDEWS in that region.

3. Research Objectives

Applicants should review the Evaluation Criteria set forth in the Federal Funding Opportunity associated with this competition. These criteria include Technical Merit, Program Relevance, Costs, and Qualifications. This section includes a description for the RISA program objectives and other critical factors for addressing those evaluation criteria.

RISAs support CSI by meeting the following objectives:

- Understand decision contexts for using climate information
- Develop actionable knowledge through interdisciplinary research
- Maintain diverse, flexible networks for sharing knowledge
- Innovate services to enhance the use of science in decision-making
- Experiment with different programmatic frameworks for connecting science with users (see Section 4)

Understanding Decision Contexts

Climate information can support decisions to adapt to a changing environment, but only if the climate research community and decision makers work together to understand each other's needs and limitations. RISA teams are effective because they have been able to create lasting relationships with decision makers from the public and private sectors

including local, regional, and state governments, federal agencies, tribal governments, utilities, the business community, and national and international non-profit organizations. Through these relationships, RISAs learn about specific decision contexts within and across different sectors of society, advancing our overall understanding of the use of science. RISA teams investigate climate impacts on sectors such as, but not limited to: fisheries, water, wildfire, agriculture, public health, transportation and coastal zone management, and enable the use of climate information (historical data, impacts assessments, regional outlooks and projections, etc.) and other early warning information to support both short- and long-term planning and decisions.

Developing integrated, interdisciplinary knowledge

RISA teams use their understanding of different decision contexts to develop and co-produce knowledge tailored to suit specific needs for climate information across different timescales and, more broadly, for context-specific scientific knowledge. RISAs characterize climate extremes, variability and change using paleoclimatic records, instrumental data, and climate predictions and projections. Each method or analytical technique in this portfolio brings its set of uncertainties and particular deficiencies, some of which are large or only partly characterized and poorly quantified. Integrating information across this mixed portfolio produces a more comprehensive characterization of a changing climate including the potential for extreme events outside the range of climate change models. RISAs integrate climate science with interdisciplinary knowledge to assess impacts, vulnerability, and risks and to inform and evaluate adaptive response options and trade-offs. RISA's interdisciplinary knowledge base helps understand the interaction between climatic and non-climatic stressors.

Maintaining knowledge networks

RISAs work at the interface of science and society to increase capacity for making decisions in a rapidly changing environment. RISA processes and products are designed as systems for learning and knowledge-exchange sustained through lasting relationships between researchers and organizations or individuals engaged in climate-related decision making. As societal awareness of climate risk grows, climate information is being infused into public spheres in richer ways placing more emphasis on innovation of different methods for providing actionable knowledge. The experimental and innovative nature of RISAs extends beyond "snapshot" assessments or tools or products alone.

Innovating Services

RISA teams strengthen the development of climate services in the public and private sectors by bridging science and service communities. RISAs innovate and enhance capabilities that can be incorporated into successful tools and practices into ongoing services. RISAs work closely with applied scientists who provide predictions and projections of weather and climate, with cooperative extension and outreach professionals, and communications experts. These experimental services include, but are not limited to:

- Climate impacts trainings

- Climate outlooks and outlook fora
- Climate extension
- Communication tools (visualizations, white papers, reports, etc.)
- Decision support tools and information systems for drought, climate, water supply and availability, agriculture and other impacts

Costs
Core RISA team work can be proposed at $600,000-$700,000 per year for up to 5 years.

Additional resources:
Websites
NOAA RISA:
http://cpo.noaa.gov/ClimatePrograms/ClimateandSocietalInteractions/RISAProgram.aspx
NIDIS: www.drought.gov/
National Climate Assessment: www.globalchange.gov/what-we-do/assessment
National Climate Assesssment Regional and Sectoral Technical Input Reports:
http://www.globalchange.gov/what-we-do/assessment/nca-activities/available-technical-inputs
NOAA Next Generation Strategic Plan: http://www.ppi.noaa.gov/ngsp/
Quarterly Climate Impacts and Outlooks:
http://www.drought.gov/drought/content/resources/reports
Reports & References
NRC. 2009. Informing Decisions in a Changing Climate. Washington, D.C.: The 2946
National Academies Press. (R. Correll, Chair) 2947
NRC. 2010. ACC: Informing an Effective Response to Climate Change. Washington, 2948 DC.
National Academies Press. (D. Liverman and P. Raven, Co-Chairs) 2949
NRC. 2010. ACC: Advancing the Science of Climate Change. Washington, DC. National 2950
Academies Press. (P. Matson, Chair) 2951
NRC. 2010. ACC: Adapting to the Impacts of Climate Change. Washington, DC. 2952 National
Academies Press. (K. Jacobs and T. Wilbanks, Chairs)

4. Program Design

The end-to-end nature of the dialogue between the climate scientists and the stakeholder network provides the perfect setting for social scientists and outreach experts to evaluate the overarching issue of the role of science in supporting policy and decision-making, particularly climate science. RISA teams are expected to have some form of evaluation of their efforts in the region (e.g., the impact of the RISA on decision making in the region as well as the influence of stakeholder input on the team's science agenda). Teams should consider evaluation questions and methods as part of their research agenda. For example, how well is the team doing stakeholder engagement, developing tools, and reflecting on that process?

RISA teams maintain diverse structures for program leadership and management. This diversity is critical for maintaining healthy relationships between multiple institutions, leveraging scientific capabilities within regions, and learning new ways to develop science in support of society. In developing a RISA program, it is important to consider how the team and activities will be managed. It is critical for RISA teams to have staff (often Program Managers) who facilitate and manage team integration. Details about how Program Managers will manage advisory structures, engagement, and coordination with other entities should also be considered.

5. Additional Factors for Proposal Preparation

This section is intended to provide additional information for successful submission for both competitions. For the RISA competitions, only one application per team will be accepted.

5.1 Letters of intent

Interested applicants for all competitions are highly encouraged to submit a 1-2 page Letter of Intent (LOI) outlining plans for your proposal. These should be submitted as a pdf to the RISA Program Managers via oar.cpo.risa@noaa.gov.

5.2 Specifics about the proposal

Proposals that can show that they are building on what is already known from the published literature about the proposed topic (e.g., value of climate information, decision making under uncertainty, use/transfer of new scientific information, integrated modeling of natural and human systems, impact of climate on sector activities, sectoral decision making analyses) prove that the PIs have a comprehension of the topic and that their proposed work will augment the existing science. Information about the activities of currently funded RISA teams is listed on the RISA website at http://cpo.noaa.gov/ClimatePrograms/ClimateandSocietalInteractions/RISAProgram.aspx . For questions about the NOAA application forms please contact Stewart Carrera (stewart.carerra@noaa.gov). RISA proposals should indicate a start date of September 1, 2016. For questions about the content of the proposal, you may contact the RISA Program team at oar.cpo.risa@noaa.gov.

5.3 Nature of investigator teams

Multidisciplinary teams of investigators are often best suited for addressing the complex issues related to climate, society and enhanced adaptation through the use of science and technology. Previous successful projects/teams have integrated social with natural or physical science components to form a more comprehensive analysis of the dynamics of climate-human interactions. Finally, the proposal should include an explanation of the roles

of the investigators and how the team will interact and integrate the multiple components. Investigators who will not be requesting funds for salaries must also be listed, along with their estimated time of commitment.

5.4 **Partners**

We encourage partnerships and collaborations between researchers and critical decision-making institutions in the region of study including: NOAA and other federal agencies, non-governmental organizations, boundary organizations, international organizations and regional networks, extension services, state and local governments, and representative private sector organizations. Any in-kind time should be reported within the proposal. Letters of support, or commitment, from partners are encouraged to accompany the proposals. If page limits are a concern, applicants can include excerpts from these letters that indicate the partner's identity and the partner's role in interacting with the RISA.

5.5 **Cost-sharing**

Cost leveraging and in-kind sharing of resources is encouraged and should be reported within the proposal.

5.6 **Interaction with NOAA**

Applicants whose proposals are chosen for funding will be expected to undertake an ongoing dialogue with the NOAA Climate Program Office. In particular, following the review process and before final selection of proposals by CPO program managers, successful applicants should expect to participate in virtual meetings with NOAA and its partners to discuss and possibly adjust the project narrative and budget.

Funded applicants will be expected to submit annual reports, respond to periodic data and information requests, and participate in dialogues involving the RISA network of investigators. The RISA awards are anticipated to be cooperative agreements and thus will require a high level of collaboration with CPO, as well as other entities within NOAA and NOAA's partner agencies.

5.7 **Page limits**

The total page limit for proposals is 50 pages. The statement of work, excluding references and figures, should be no more than 25 pages. Bios can be short paragraphs and are only needed for main investigators. Only lead investigators need to include current and pending support. Letters of support are included in the 50 page limit. Budget tables, budget justifications, and subcontract information are not included in the page count for this competition.

Because the NOAA budget forms are designed for 4 years or less, please submit two SF424A forms, one for years 1-4 and the second for year 5. Note that all Federal forms (SF424, SF424A, SF424B, CD511) and other mandated forms are *not* part of the required page limit.

6. Webinars to discuss the RISA competition

RISA Program Managers will hold two webinars to discuss the RISA competition. Please check the RISA competition webpage for the webinar schedule.

To sign up to receive the webinar information, please send an email with the subject line, "RISA FFO Webinars," to RISA Program Managers at oar.cpo.risa@noaa.gov.

In addition, information on the FY16 Federal Funding Opportunity will be posted on the RISA website:
http://cpo.noaa.gov/ClimatePrograms/ClimateandSocietalInteractions/RISAProgram.aspx