

## Michigan Sea Grant 2017 Request for Proposals

Michigan Sea Grant College Program (MISG) is inviting proposals for innovative research projects and graduate research fellowships for the 2018-2020 funding period that begins on February 1, 2018. MISG will support three types of research during this funding cycle:

*(Click title to see specific details of each RFP)*

- I. [Integrated Assessment \(IA\) Research Projects](#) — Research that uses Integrated Assessment methods to address important social and ecological issues affecting the Great Lakes, up to \$75,000 per year.
- II. [Core Research Projects](#) — Basic core research on issues currently affecting the Great Lakes ecosystem, up to \$100,000 per year.
- III. [Michigan Sea Grant Graduate Student Research Fellowships](#) — Graduate student (M.S. or Ph.D.) research fellowships for one or two years, up to \$50,000 total per fellowship.

All Sea Grant research project funds are awarded via a highly competitive process involving external peer reviews and the recommendations of external advisory panels.

### Deadlines:

- **IA and Core Research pre-proposals are due by 5 p.m. (EST) Friday, March 3, 2017.**
  - Investigators encouraged to submit a full proposal for IA projects or core research projects will be notified no later than April 7, 2017.
  - Guidelines for full proposals will be posted on the website on April 7, 2017.
- **Full research proposals (encouraged or not) are due by 5 p.m. (EST) May 26, 2017.**
- **Graduate Research Fellowship proposals are due by 5 p.m. (EST) May 26, 2017.**
- **Questions about the research RFP are due by 5 p.m. (EST) Jan. 27, 2017. Questions about the Graduate Research Fellowships are due by 5 p.m. (EST) April 7, 2017.**
  - Responses will be posted by Feb. 6 and April 17, respectively.
- **Notification of final proposal funding decisions occurs in early Sept. 2017.**
- **Funding for new projects begins Feb. 1, 2018, pending federal appropriations.**

## General Information for All Proposals

### Eligibility

Qualified researchers at accredited Michigan universities are eligible to be Principal Investigators on MISG-funded projects. However, project team members are not limited to university researchers. PIs are not required to submit a pre-proposal in order to be eligible to submit a full proposal. Graduate fellowships will support a graduate student enrolled at an accredited Michigan university with support of a faculty member from that institution.

### Non-federal Match

All proposals require a 50 percent non-federal match. Principal Investigators are not required to document the source of the project match until submitting a full proposal. Those proposals that identify additional project support committing specific resources to the project (e.g., funding) will be more competitive. Fellowship match may be identified through the fellow's home institution with assistance of the advising faculty, or by match from cooperating agencies involved in the project.

## Questions

Questions related to IA and core research proposals for this RFP, whether technical or content related, should be submitted to the Michigan Sea Grant Research Program ([MSG-RFPinfo@umich.edu](mailto:MSG-RFPinfo@umich.edu)) by 5 p.m. (EST) Jan. 27, 2017. Responses will be posted on the Michigan Sea Grant RFP webpage ([www.miseagrant.umich.edu/research/funding-information](http://www.miseagrant.umich.edu/research/funding-information)) by Feb. 6, 2017. Questions related to the Graduate Fellowship portion of the RFP will be accepted until April 7, 2017 and answers posted by April 17, 2017, on the Michigan Sea Grant RFP webpage.

## I. Integrated Assessment Research RFP

Michigan Sea Grant will support Integrated Assessment research projects that tackle important ecological and social Great Lakes issues and that inform planning, policy, and natural resource management. Topics identified for the 2018-2020 funding cycle (Appendix A) reflect challenging issues identified by the MISG Advisory Board, state and federal agencies, and ideas submitted by local communities. For example, past projects have focused on coastal wind energy development, stormwater management for a downstream community, and restoration of natural flows in the Clinton River. Integrated Assessment researchers conduct a comprehensive analysis of relevant natural and social scientific information, working closely with stakeholders and MISG Extension educators. The purpose of the assessment is to develop information, tools, and partnerships that will help decision makers better address the focal issue.

See [Appendix A](#) for the 2017 suggested IA topics and [Appendix B](#) for the key elements of Integrated Assessments that will help projects be more competitive under this RFP.

### Application Submission Information

**Pre-proposals are due to Michigan Sea Grant by 5 p.m. (EST) Friday, March 3, 2017.** Pre-proposals not received by the deadline will not be considered. Investigators must submit their pre-proposals through [Michigan Sea Grant's RFP webpage](#), where the pre-proposal can be uploaded as a PDF. Applicants will be notified by April 7, 2017, if they are encouraged to submit a full proposal. Full proposals, encouraged or not, will be due by 5 p.m. (EST) Friday, May 26, 2017. Guidelines for full proposals will be posted on the MISG website by April 7, 2014.

### Pre-proposal Requirements: Integrated Assessment Projects

#### 1) Title Page that includes:

- a) Project title
- b) Principal Investigator
- c) Title and position(s)
- d) Institution
- e) Postal mailing address
- f) E-mail address
- g) Telephone number(s)
- h) Co-investigators and institutions

2) **Project Narrative:** Use standard formatting: 8.5 x 11-inch paper, 1-inch margins, and at least 11-point Times New Roman font; not to exceed 4 pages. Include the following sections:

- **Problem/Issue Statement:** 1-2 paragraphs.

- **Background:** Provide a brief description of the IA topic to be addressed, demonstrating awareness of the main issues and identifying potential stakeholders. This should include:
  - Origin of the issue
  - Why the issue is a complicated, challenging problem
  - Who is or should be involved
  - Brief project objectives as they would appear in a full proposal
- **Project Approach:** Provide an overview of how you intend to develop the project, so reviewers can determine appropriateness of the approach for achieving the stated objectives. It is not necessary to explain analytic methods in detail.
- **Characterize the Solution Possibilities:** Address the potential options that could be considered, such as management actions, education, outreach programs, legislation, regulations, or other initiatives.
- **Project Team and Collaborators:** Identify the project team and individual responsibilities. Also, provide names and affiliations of all persons and institutions you intend to recruit as collaborators. Note that it is not necessary at this time to contact or secure a commitment from these individuals and organizations.
- **Data and Data Sets:** Funds for Integrated Assessments should primarily support analysis and communication of existing data, rather than collection of new field data. Stakeholder surveys, focus groups, observations, and interviews are permitted if used to support the goals of the Integrated Assessment process. Please identify any existing data sets you plan to use, their owners, and how you intend to access the data. You may also indicate your knowledge of closely related projects, briefly identifying those projects and their PIs. If you will generate new data, please suggest a data archiving and sharing plan as required by NOAA regulations:  
[https://nosc.noaa.gov/EDMC/documents/Data\\_Sharing\\_Directive\\_v3.0.pdf](https://nosc.noaa.gov/EDMC/documents/Data_Sharing_Directive_v3.0.pdf).

3) **Estimated Budget:** Total amount requested should include all direct and indirect costs, such as fringe benefits, student assistantships, etc. However, at this stage, a detailed budget is not required. Contact your University Research Program Office for fringe benefit and indirect cost rates. Non-federal matching funds should be 50% of requested amount, at least \$1 non-federal for every \$2 federal requested; however, Principal Investigators are not required to document the source of the project match until submitting a full proposal.

4) **Project Team Member Bio-sketches:** Please submit a two-page bio-sketch per project team member. These pages do not count toward the page limit. Include relevant project experience and up to five publications.

## **Pre-proposal Evaluation: Integrated Assessment Projects**

Pre-proposals are reviewed and scored by experts familiar with the policy context of the focal issue. The goal is to identify one pre-proposal per topic that reflects the best understanding of the issue and has the most potential to impact policy and management. Pre-proposal reviewers typically include state or local government personnel, scholars, and one Sea Grant specialist familiar with the topic, as well as stakeholders affected by the issue.

Pre-proposals are reviewed based on the following criteria:

- a) **Understanding of Context and Underlying Issues:** Does the pre-proposal identify underlying issues? Does the pre-proposal provide the appropriate setting for those issues?

- b) **Project Approach:** Is the pre-proposal in line with the goals of an Integrated Assessment, and is it likely to have a long-term impact (e.g., policy or management change)?
- c) **Preliminary Identification of Relevant Data Sources:** Does the pre-proposal identify how data will be accessed? Does it reflect an effort to contact others working on this issue and identify team members or collaborators who bring data or data access to the team?
- d) **Competency of Proposing Team:** Does the team have members who can carry out each element of the assessment? Have team members conducted similar work in the past? Teams are not required to have experience with Integrated Assessment. However, teams must indicate their ability to assess status and trends and to identify causes and consequences of the issue.

After reviewing the pre-proposals, MISG typically encourages one team to develop a full proposal for each topic to maintain a diverse and relevant research portfolio. This allows policy contacts and MISG staff familiar with the focal issue to work with a single research team as the full proposal is developed. However, any research investigator can submit a full research proposal, encouraged or not. A research investigator can also submit a full proposal without having submitted a pre-proposal.

Those encouraged to submit a full proposal are given a brief summary of all feedback provided by reviewers and any additional recommendations from MISG staff. Full proposals are due May 26, 2017, and notification of final proposal funding decisions will occur in September 2017. Funded projects are carried out from February 1, 2018, through January 31, 2020.

## 2017 Integrated Assessment Research Topics

Several topics have been identified as high priority for IA projects. These align with the focus areas of the MISG Strategic Plan ([Michigan Sea Grant Strategic Plan](#)). The specific research priorities identified as 2017 IA topics were developed in partnership with federal, state, and local government agencies, as well as the MISG Management Team and Extension educators. Consultation with MISG Extension education staff and policy contacts is not required at the pre-proposal stage, but will be encouraged as teams develop full proposals.

Topics include:

- Ecological assessment and regional/community planning for southwest Michigan;
- Lake Michigan fisheries management;
- Littoral sediment management (beach and nearshore sediment management);
- Assessment and testing of innovative methods of public engagement to inform water policy; and,
- Alternate Integrated Assessment.

Please see [Appendix A](#) for a detailed description of the above IA topics and points of contact. Please see [Appendix B](#) for more information about Integrated Assessment research.

## II. Core Research RFP

Michigan Sea Grant is accepting proposals for core research projects for the 2018-2020 funding cycle. The projects will run for two years, and the maximum annual research project budget is \$100,000 per year, for a total of \$200,000, including indirect costs. This does not include required matching funds provided by the Principal Investigator, which should be at least 50% of the amount requested from MISG. Matching funds must be from non-federal sources and may include faculty salaries, university overhead, equipment, ship time, etc. Lead scientists must have Principal Investigator standing at an accredited Michigan institution to be eligible for funding.

This is an open Request for Pre-Proposals (RFP), and university-based researchers are encouraged to submit research projects that fulfill critical research needs for the Great Lakes and coastal ecosystems — and that fit within the focus areas of the [Michigan Sea Grant Strategic Plan](#). MISG seeks to bring together innovative research teams from Michigan universities and, where possible, leverage active research programs conducted by federal and state agencies.

Since co-funding opportunities may be available for several topics, MISG is particularly interested in proposals that address: 1) littoral sediment assessment (see Appendix A; Focus Area: Resilient Communities and Economies); 2) aquaculture; and 3) assessment of the effects of the Michigan Clean Marina Program’s best management practices on water quality and coastal resources (<http://www.miseagrant.umich.edu/michigan-clean-marina-program/>).

### Application Submission Information

**Pre-proposals are due by 5 p.m. (EST) Friday, March 3, 2017.** Investigators must submit their pre-proposals through [Michigan Sea Grant’s RFP webpage](#), where the pre-proposal can be uploaded as a PDF. Investigators invited to submit full proposals will be notified no later than April 7, 2017. Guidelines for full proposals will be posted on the MISG website by April 7, 2014. Full proposals, invited or not, are due by 5 p.m. (EST) Friday, May 26, 2017. Based on panel evaluations, MISG may suggest that investigators modify objectives, work plans, or budgets for their full proposals. Notification of final proposal funding decisions will occur in September 2017, and funded projects will be carried out from February 2018 through January 31, 2020.

### Pre-proposal Requirements: Core Research Projects

#### 1) Pre-proposal cover page including:

- a) Project title
- b) Principal Investigator
- c) Title and position(s)
- d) Institution
- e) Postal mailing address
- f) E-mail address
- g) Telephone number(s)
- h) Co-investigators and institutions

2) **Project Narrative:** Use standard formatting: 8.5 x 11-inch paper, 1-inch margins, and at least 11-point Times New Roman font; not to exceed 4 pages. Include the following sections:

- **Statement of Research Need:** Describe how your research is relevant to and will build upon previous and concurrent studies and how it advances the body of knowledge or addresses an important problem for Michigan’s Great Lakes.

- **Project Goals and Objectives:** Clearly state the hypotheses and objectives of your research, or the focus and objectives of your assessment. Do not describe how you will conduct the research or assessment; rather, convey what you will attempt to accomplish in the project.
- **Research Methods:** Identify how you will go about achieving the objectives set forth above. Provide ample information about the starting point for new methods and indicate the experimental design and statistical models you expect to use to achieve your objectives.
- **Research Relevance:** Provide a summary of the relevance of the project to Michigan's Great Lakes and the [Michigan Sea Grant Strategic Plan](#) and include any other state, federal, or private organizations involved in this proposal, including level of participation and funding.
- **Data Management Plan:** New NOAA regulations require a data management plan to make data available within two years of award completion. Describe your data management plan. [https://nosc.noaa.gov/EDMC/documents/Data\\_Sharing\\_Directive\\_v3.0.pdf](https://nosc.noaa.gov/EDMC/documents/Data_Sharing_Directive_v3.0.pdf).

3) **Budget Justification and Total Match:** Sea Grant investigators must include a 50% non-federal contribution in the budget, showing a match of at least \$1 for every \$2 of federal support requested. The total budget amount must be distributed nearly equally over the two years (i.e., no front loading). Principal Investigators are not required to document the source of the project match until submitting a full proposal.

4) **Curriculum Vitae:** Not to exceed two pages per investigator. These pages do not count toward the page limit. Include relevant project experience and publications.

5) **References:** Include only those cited in the body of the proposal.

## Pre-proposal Evaluation: Core Research Projects

A small panel of academic experts and the MISG Management Team will review pre-proposals. Principal Investigators whose projects are scientifically sound and aligned with the goals of the MISG program will be encouraged to write a full proposal. However, any research investigator can submit a full research proposal, encouraged or not. A research investigator can also submit a full proposal without having submitted a pre-proposal. Those encouraged to submit a full proposal are given a brief summary of all feedback provided by reviewers and any additional recommendations from MISG staff. Guidelines for full proposals will be posted on the MISG website by April 7, 2014. Full proposals are due May 26, 2017, and notification of final proposal funding decisions will occur in September 2017. Funded projects are carried out from February 1, 2018, through January 31, 2020.

Pre-proposals will be evaluated on the five criteria identified below:

- a) **Rationale:** Does the proposal identify the need, goals, and objectives of the proposed research?
- b) **Scientific Merit and Innovativeness:** Will the proposed research plan achieve the goals and objectives identified? Will the proposed research advance the state of science or discipline through use of state-of-the-art methods?
- c) **Professional Qualifications of the Investigators:** Are the qualifications (e.g., education, training, and experience of the investigators) and the record of achievement with previous funding adequate for the proposed research?
- d) **Relevance to MISG Research Priorities and Strategic Plan:** Is the proposed research relevant to current issues identified by state, regional, tribal, or federal agencies for Michigan's Great Lakes and priorities described in the [Michigan Sea Grant Strategic Plan](#)?
- e) **Budget:** Is the budget reasonable and adequate to meet project objectives?

### III. Graduate Student Research Fellowship RFP

Michigan Sea Grant is offering one-or two-year fellowships from 2018-2020 for graduate students enrolled full-time at Michigan universities who are interested in research relevant to current Great Lakes ecological, habitat, or fisheries management issues. This fellowship will provide support for a student's research up to \$50,000 total per fellowship that could include tuition, stipend, travel, and research expenses.

Research fellows will work with an agency sponsor and faculty member at an accredited institution in Michigan to conduct a research project that supports existing Great Lakes agency research (see below). Applicants submit a brief proposal for their research as part of the selection process and are expected to have letters of support from agency and faculty sponsors. Interactions with agency and MISG professionals are expected to enhance academic and professional development opportunities.

#### About the Fellowship

- Supports exceptional graduate students (M.S. or Ph.D.) engaged in research relevant to the Great Lakes, ongoing agency research, and to the [Michigan Sea Grant Strategic Plan](#).
- Fellows will work with an agency mentor to ensure results are useful and contribute to ongoing Great Lakes research.
- Agencies include federal, state, and tribal agencies, NGOs, and local governments that conduct research on Great Lakes coastal issues. This could include natural or social science research.
- Fellowship funding will be available in February 2018, but the fellowship can begin in either 2018 or 2019, as appropriate, concluding by January 31, 2020.
- Support: Up to \$50,000 total for students, including tuition, stipend, and benefits.
  - Requires a 50% non-federal match (e.g., faculty salary).
  - A budget is required; see below.

#### Eligibility

- Students must be enrolled in or admitted to a full-time graduate or professional degree program at an accredited Michigan academic institution.
- Students may be working toward a degree in any discipline related to Great Lakes coastal or ecosystem issues.

#### Application Submission Information

**Proposals are due to Michigan Sea Grant by 5 p.m. (EST) May 26, 2017.** Proposals not received by the deadline will not be considered. Applicants must submit their proposals as PDFs through [Michigan Sea Grant's RFP webpage](#). Questions about the Graduate Research Fellowships are due by 5 p.m. (EST) April 7, 2017; responses will be posted by April 17, 2017.

#### Online Submission Process:

- Please allow sufficient time for all application materials to be received before the deadline. Late applications will not be accepted. We suggest that fellowship applicants access the Fellowship Application Submission Form to complete Parts 1 and 2 at least two weeks before the deadline. This step will initiate a system-generated request for recommendation letters and allow enough time for those letters to be received by the deadline.
- After completing Part 2 of the online application form, the academic advisor and agency sponsor will receive a system-generated request for the letter of recommendation with instructions on how to log in and upload the letter as a PDF.

- After completing Parts 1 and 2 of the online application (be sure to click save), applicants will be emailed a Fellowship Code that is required for logging in to complete the online submission.
- Complete [Budget Form 90-4](#) (XLS) to describe the proposed budget. Upload this as part of the online application.

### **Proposal Requirements: Research Fellowship**

- **Budget:** The budget should outline proposed expenses (e.g., tuition, stipend, research expenses, travel, supplies, etc.) up to \$50,000 total and a timeline for up to 2 years. The budget should also indicate the source and allocation of the 50% non-federal match (e.g., \$25,000 non-federal match for a \$50,000 funding request from Sea Grant).
  - Use [Budget Form 90-4](#) (XLS) to develop the proposed budget.
- **Curriculum Vitae (CV):** Two pages maximum and must include contact information for the graduate student applicant and primary advisor(s).
- **Research project narrative:** 1-2 pages.
- **Career goal statement:** 1 page maximum.
- **Undergraduate and graduate transcripts:** Unofficial copies are acceptable.
- **Letters of recommendation:** One from primary academic advisor and one from an agency sponsor.

### **Proposal Evaluation: Research Fellowships**

Selection criteria include academic ability, research proposal integration with agency research, the research and career goals of the student and relevancy of academic background, communication skills, and support from faculty and agency advisors. Applications that do not meet the requirements may be rejected without review.

All qualified applicants for the Graduate Research Fellowships will be: 1) reviewed by two external reviewers: one from a Great Lakes agency (state or federal), and one from academia; and 2) interviewed by the MISG Management Team and two external reviewers in mid-to-late summer 2017. Notification of funding decisions will occur in September 2017, and fellowship research will be conducted within the 2-year period from February 1, 2018 through January 31, 2020.

## Appendix A: Suggested Integrated Assessment Topics for MISG 2017 RFP

Michigan Sea Grant (MISG) will support Integrated Assessment research projects that tackle important ecological and social Great Lakes issues and that inform planning, policy, and natural resource management. These IA topics are aligned with the focus areas from the 2018-2021 Michigan Sea Grant Strategic Plan and have been suggested by a suite of advisors, including representatives from agencies and local community organizations. Past projects have focused on coastal wind energy development, storm water management for a downstream community, and restoration of natural flows in the Clinton River. Integrated Assessment researchers conduct a comprehensive analysis of relevant natural and social scientific information, working closely with stakeholders and MISG extension educators. The purpose of the assessment is to develop information, tools, and partnerships that will help decision makers better address the focal issue. The suggested topics are organized by the focus areas of our strategic plan. Research investigators are also invited to develop their own unique research proposals that fit within one of our 2018-2021 Strategic Plan Focus Areas for consideration ([Michigan Sea Grant's Strategic Plan](#)).

### Focus Area: Healthy Coastal Ecosystems

#### ***Topic: Ecological Assessment and Regional/Community Planning for Southwest Michigan***

*Contact: Paul Seelbach, USGS*

*MISG Contact: Dan O'Keefe*

What are the opportunities to better represent ecosystem services in local and regional planning? Investments in community planning and infrastructure provide opportunities to integrate stewardship of coastal natural resources with strategies for socio-economic revitalization. Regional plans provide opportunities for communities to develop partnerships that maximize use and management of regional natural resources; however, planning efforts in Michigan are often decentralized and under local control making regional planning difficult. A regional assessment of the social and natural resource values of coastal systems and waterfronts could support regional conservation planning through insights into the ecological integrity of the shoreline and coastal zones and inform development of public education and recreational resources. An Integrated Assessment could include regional mapping of natural resources and ecosystem services, assessment of coastal resilience practices to adapt to a dynamic future, best practices for riparian zoning, or integration of coastal natural resources into local and regional recreation plans. With Southwest Michigan as a proposed site, an Integrated Assessment could potentially inform recommendations for coastal resiliency, environmental quality goals, and municipal and regional zoning and planning efforts.

### Focus Area: Sustainable Fisheries and Aquaculture

#### ***Topic: Lake Michigan Fisheries Management***

*Policy Contact: Nick Popoff, MDNR Fisheries Division*

*MISG Contact: Mark Breederland/Dan O'Keefe*

What are the impacts of a rapidly changing Lake Michigan fishery on commercial, tribal, and recreational fishers? For example, from 2009 to 2015, there was a reversal in catch rates wherein lake trout catch now exceeds whitefish catch. Currently, state licensed fishers are not allowed to keep lake trout, so many are discarded as bycatch. These catch changes are related to salmon stocking and ecosystem-wide shifts in the food web due to invasive species. The ecological and social dimensions of the changing fishery can be in conflict. For example, the demand for stocked fish might be in conflict with a desire to restore native fish. Many of these issues could be clarified by engaging a broad group of stakeholders to help inform planning and management of the Lake Michigan fishery. Some issues that could be addressed by this

Integrated Assessment include: What are the potential technological advances to reduce commercial bycatch of lake trout? What are repercussions of the trend to consolidate state licensed operations under fewer operators? How can fishers take advantage of changes in the Lake Michigan fishery that might open new recreational and commercial opportunities due to a more diverse fish community? How can Michigan communities better integrate commercial fisheries heritage and tourism? An Integrated Assessment in this topic area could help commercial and recreational fishers and managers better understand and adapt to existing and future changes in the Lake Michigan fishery.

Focus Area: Resilient Communities and Economies

***Topic: Littoral Sediment Management (Beach and Nearshore Sediment Management)***

*Policy Contact: Ronda Wuycheck, MDEQ Office of Great Lakes — Coastal Zone Management Program*  
*MISG Contact: Mark Brederland*

Researching coastal sediment resources, sediment budgets, and potential approaches toward more holistic management of coastal sediments is a need along Michigan's Great Lakes coast that might be well-suited to an Integrated Assessment approach (but also see Core Research). The state faces legal and political concerns over the potential for open water disposal of sand, as well as sand deficits. Decisions about sand management are made by individual beach property owners without significant consideration of larger ecological systems and hydrodynamic processes. Management decisions about erosion and beach nourishment impact social and economic values because beaches play an important role in Michigan's recreational and fisheries resources. While sediment budgets have been completed for specific sites (e.g., USACE assessments associated with harbor dredging), coastal sediment inventories, along with source and "sink" information, are not readily available on either local or broader scales. An Integrated Assessment could include an inventory of existing sediment data and models for Michigan's coastal zones and an assessment of data and knowledge gaps, an assessment of the cumulative impacts of small-scale shore protection structures on sustainability of beaches along the Great Lakes, or an assessment of the impacts of recreational beach management and use on coastal and nearshore ecosystems. In the long term, this Integrated Assessment could guide local beach management policies that take into account larger scale sediment erosion and transport mechanisms and outcomes.

**Note: This topic is also addressed in the Core Research section. This issue may be more suited for core research due to the expected lack of existing data and models addressing sand budgets and hydrodynamics that would inform the legal and political concerns addressed in an IA. A core research project on this topic could also address the following:**

Currently, a quality inventory does not exist for areas with beach-compatible sandy sediment versus those that are sand-deficient. Further, sediment transport dynamics have not been well studied/documentated on a littoral cell basis. There exists a need to inventory coastal sediment budgets, develop hydrodynamic models of sediment transport, identify areas of high erosion potential, identify the primary sediment traps or diversions alongshore, and assess the cumulative impacts of small-scale shore protection structures on the sustainability of beaches along the Great Lakes. In the long term, this research could guide beach management and prevent the cumulative effects of permitting armoring on a property-by-property basis that result in sediment erosion and accumulation in neighboring properties.

Focus Area: Environmental Literacy and Workforce Development

***Topic: Assess and Test Innovative Methods of Public Engagement to Inform Water Policy***

*Policy Contact: Jon Allan, Emily Finnell, MDEQ Office of the Great Lakes*

*MISG Contact: Mary Bohling*

What are innovative or non-traditional methods of public engagement that help transcend more traditional approaches to emphasize community involvement in decision making? Local governments often resort to a few forms of well-used and widely accepted public engagement methods for soliciting input on pertinent issues that often focus attention on dominant points of view. Traditional methods include surveys, public meetings, notices for written comment, and use of proxy representatives from NGOs or other organizations. These approaches may not capture meaningful participation from a diverse set of perspectives. While traditional approaches may be successful when they are used appropriately, such as in the case of advisory groups or work groups, they may not equate to the true value of meaningful participation from people with diverse perspectives. What is often lacking with the current model is direct involvement of individuals or families. This Integrated Assessment could evaluate current research on public engagement approaches and identify techniques that match engagement strategies with issues or situations. Case study communities could be used to evaluate the effectiveness of alternative approaches for civic engagement on selected issues related to water. The ultimate outcome would be to empower communities and individuals and grow a conservation ethic.

***Topic: Developing an Alternate Integrated Assessment***

Research teams can propose an Integrated Assessment project for a topic not described in this RFP. When doing so, provide the following additional information:

- Explain why the issue is a wicked or challenging problem, how it relates to [Michigan Sea Grant's Strategic Plan](#), and why it is of interest to resource management agencies at the local, state, regional, tribal, or federal level.
- Demonstrate that the topic is amenable to analysis based on existing data and information.
- Secure a letter of support from a policy sponsor who has the authority to make or influence management decisions relative to the problem identified. It is not necessary for sponsors to provide funding for the project, but they should be willing to work with the process for two or more years beginning in winter 2018.

See [Appendix B](#) for the key elements of Integrated Assessments that will help projects be more competitive under this RFP.

## Appendix B: Key Points of Integrated Assessment

### Integrated Assessment Approach

The Integrated Assessment process brings together citizens, industry representatives, scientists, and policy makers to define and evaluate policy or management options related to particularly difficult — *wicked* — environmental problems. Wicked problems are encountered where facts may be uncertain, values are in conflict, stakes are high, decisions are urgent, and community representation is required for resolution of the relevant issues (Gough, 1998).

Integrated Assessments summarize scientific knowledge to build consensus and guide decision making. These projects are assessments because they involve expert review and analysis of existing data and information, rather than additional experimentation or new data collection. Projects integrate the needs of decision makers, perspectives of stakeholders, and expertise from several disciplines, typically physical, biological, and social sciences.

Each Integrated Assessment project will follow a unique trajectory, depending on the type and scope of the focal issue; however, most projects include the following:

1. Define and refine the policy-relevant question around which the assessment is to be performed. This often begins with identification of an issue by managers or policy makers that has defied typical and routine action. The focal IA question must be refined with stakeholder input.
2. Clarify the history, causes, and consequences of the issue. Projects should help clarify aspects of the issue that are uncertain and are impeding action. A description of current conditions and historical trends can enhance understanding and provide a foundation for further analyses. To address the issue effectively, decision makers must better understand the probable causes and the environmental, social, and economic consequences of the issue.
3. Identify and evaluate potential options. Projects should identify potential options for addressing the issue, including policies, management actions, or new initiatives that are politically, socially, and economically feasible. Integrated Assessments help stakeholders compare and evaluate the benefits and costs of a suite of options, rather than recommend a single approach.
4. Develop tools and information that can guide decisions and help implement potential options. If appropriate, researchers should provide an assessment of certainty levels associated with their findings to help policy makers interpret analyses or identify future research needs.

A key to success of the Integrated Assessment approach is an inclusive stakeholder process that both enables the technical teams to learn from those most affected by the issue and provides useful and accessible information for the stakeholders to learn more about the issue(s) affecting them. It is important that the stakeholder group includes multiple viewpoints and that participants perceive that the group is being convened and facilitated by a neutral party.

If the issue is so contentious that it is impossible to provide a neutral assessment team, the team must be able to demonstrate that all sides of the issue are represented so the process itself will be seen as fair.

### Learn More about Integrated Assessment

Additional material on Integrated Assessments, including a guide and example projects, can be found at the Michigan Sea Grant website: [www.miseagrant.umich.edu/research/approach](http://www.miseagrant.umich.edu/research/approach).