

**Environment and Natural Resources Trust Fund**

# M.L. 2021 Approved Work Plan

## **General Information**

**ID Number:** 2021-188

**Staff Lead:** Michael Varien

**Date this document submitted to LCCMR:** July 21, 2021

**Project Title:** Building Knowledge And Capacity For AIS Solutions

**Project Budget:** $3,750,000

## **Project Manager Information**

**Name:** Nicholas Phelps

**Organization:** U of MN - MAISRC

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## **Project Reporting**

**Date Work Plan Approved by LCCMR:** July 20, 2021

**Reporting Schedule:** December 1 / June 1 of each year.

**Project Completion:** June 30, 2025

**Final Report Due Date:** August 14, 2025

## **Legal Information**

**Legal Citation:** M.L. 2021, First Special Session, Chp. 6, Art. 6, Sec. 2, Subd. 06e

**Appropriation Language:** $3,750,000 the first year is from the trust fund to the Board of Regents of the University of Minnesota for the Minnesota Aquatic Invasive Species Research Center to conduct high-priority projects aimed at solving Minnesota's aquatic invasive species problems using rigorous science and a collaborative process. Additionally, the appropriation may be spent to deliver research findings to end users through strategic communication and outreach. This appropriation is available until June 30, 2025, by which time the project must be completed and final products delivered.

**Appropriation End Date:** June 30, 2025

## **Narrative**

**Project Summary:** MAISRC will launch 10-14 high-priority projects aimed at solving Minnesota's AIS problems using a rigorous and collaborative process. The science will be delivered to end-users through strategic communication and outreach.

**Describe the opportunity or problem your proposal seeks to address. Include any relevant background information.**

Aquatic invasive species (AIS) are a real and growing threat to Minnesota's lakes, rivers, and wetlands. From our docks to state budgets, damaging AIS, such as zebra mussels, common carp, Eurasian watermilfoil, and many others have degraded the State's ecosystem, economy and way of life. For example, we recently found that young-of-the-year walleye are significantly smaller in our large lakes infested with zebra mussels, exacerbating already strained fisheries and local communities. In response to AIS impacts, Minnesotans invest millions of dollars each year to prevent and control infestations. These necessary investments have no doubt resulted in positive outcomes, but fall short of solving the long-term problem.   
  
Minnesota became a national leader with the creation of the Minnesota Aquatic Invasive Species Research Center (MAISRC) in 2012. Meaningful progress is being made – already providing new tools for managers, research-based answers available for real-world decisions, and partners at all levels, locally and around the world, working in the same direction. Solutions to Minnesota’s AIS problems are within reach. It is imperative that we remain committed to a long-term vision for AIS control in Minnesota, one that is informed by ground-breaking science that supports proven and efficient management action.

**What is your proposed solution to the problem or opportunity discussed above? i.e. What are you seeking funding to do? You will be asked to expand on this in Activities and Milestones.**

MAISRC was established with a game-changing investment from the ENRTF, creating a one-of-a-kind program focused on solutions-oriented research and outreach. We are driven to solve problems through innovative, rigorous and collaborative science. We have brought together 23 different project managers (UMN, UMD/NRRI, MN DNR, USGS, etc.) and their experienced teams to pursue 29 ENRTF-funded research projects (some multi-phase) on a range of high-priority species and strategies for AIS prevention, control, and management. Notable highlights are included in the infographic and much more is available here: www.maisrc.umn.edu. We are perfectly positioned to build on past success and continue to make advancements.   
  
We propose to continue forward momentum by launching additional projects through our competitive RFP process, informed by our extensive research needs assessment and stakeholder engagement. All research will be vetted by internal and external peer-reviewers to ensure both scientific rigor and practical application. We will continue to prioritize communication and outreach to ensure results are effectively delivered to managers, practitioners, and the public to build our State’s response capacity. Led by a 10-year strategic plan, we will continue to consult our external Advisory Board, Technical Advisory Board, and our Fellows Group to keep us mission-oriented.

**What are the specific project outcomes as they relate to the public purpose of protection, conservation, preservation, and enhancement of the state’s natural resources?**

We will continue to advance scientific understanding and build capacity aimed at solving Minnesota’s AIS problems. Through workshops and direct communication, we will translate our science and deliver tools directly to local, state and federal AIS managers. We will share research findings with diverse audiences and formats, including media interviews, local presentations, webinars, published manuscripts and much more. Through hands-on experience, this work will train the next generation of AIS professionals. Ultimately, we will be empowering more educated and active stakeholders, who are an essential part of the State’s solution to improve and protect Minnesota’s natural resources.

## **Project Location**

**What is the best scale for describing where your work will take place?** Statewide

**What is the best scale to describe the area impacted by your work?** Statewide

**When will the work impact occur?** During the Project and In the Future

## **Activities and Milestones**

### **Activity 1: MAISRC Core Operations**

**Activity Budget:** $3,750,000

**Activity Description:**As a part of core operations, MAISRC will continue to provide leadership for AIS research that establishes priorities, facilitates coordination, evaluates research progress in real-time, and be a go-to resource for individuals, groups, and advisory committees. We will also provide physical infrastructure, shared equipment, and lab support.  
  
MAISRC will leverage past and future legislative appropriations to continue offering an annual, competitive RFP that is open to all Minnesota-based researchers. We will launch 10-14 subprojects (~$200k-250k each, with two-year durations) addressing Minnesota’s highest priority AIS research needs. New lines of research will be focused on needs identified by our comprehensive research needs assessment. Existing projects with high potential will be evaluated through the competitive peer-review process and continued. By providing a long-term strategy to build upon promising research, we are better positioned to realize the value of previous research investments.  
  
To ensure that we continue to move the needle on two of Minnesota’s most problematic AIS, MAISRC core operations includes two research positions, focused on zebra mussels (1.0FTE) and common carp (0.5 FTE). These positions are considered central to core operations and provide a foundation for which research can be done, not otherwise supported by the UMN.

**Activity Milestones:**

|  |  |
| --- | --- |
| **Description** | **Completion Date** |
| Internal and external review of 2021 RFP proposals | September 30, 2021 |
| Award subproject funding to 5-7 proposals from 2021 RFP, subprojects begin on January 1, 2022 | September 30, 2021 |
| Issue 2022 RFP on high priority research needs | March 31, 2022 |
| Internal and external review of 2022 RFP proposals | September 30, 2022 |
| Award subproject funding to 5-7 proposals from 2022 RFP, subprojects begin on January 1, 2023 | September 30, 2022 |
| Issue 2023 RFP on high priority research needs | March 31, 2023 |
| Prioritize 2024 research needs through research needs assessment process | December 31, 2023 |
| Initial dissemination of results and next steps identified for projects completed December 31, 2023 | June 30, 2024 |
| Prioritize 2025 research needs through research needs assessment process | December 31, 2024 |
| Initial dissemination of results and next steps identified for projects completed December 31, 2024 | June 30, 2025 |
| Continued dissemination of research results from past MAISRC subprojects to provide science-based recommendations and resources to individuals, groups, and advisory committees (as needed) | June 30, 2025 |

## **Dissemination**

**Describe your plans for dissemination, presentation, documentation, or sharing of data, results, samples, physical collections, and other products and how they will follow ENRTF Acknowledgement Requirements and Guidelines.**The translation of AIS science into public and management action is a central part of MAISRC's work and we provide a platform for information and new research findings about AIS to be widely disseminated. This is accomplished by providing rich opportunities for stakeholder engagement through the annual public Research and Management Showcase event and ongoing outreach efforts, as well as making research progress and results accessible to the public and AIS managers through reports, brochures, the MAISRC website, Facebook and Twitter, Extension programming, seminars, talks, and via peer reviewed publications and student theses. Additionally, MAISRC organizes a publicly available and indefinite data repository (“MAISRC-DRUM”) in partnership with the UM Libraries for data related to ongoing and completed MAISRC projects.   
  
The Minnesota Environment and Natural Resources Trust Fund (ENRTF) will be acknowledged through use of the trust fund logo or attribution language on project print and electronic media, publications, signage, and other communications per the ENRTF Acknowledgement Guidelines.

## **Long-Term Implementation and Funding**

**Describe how the results will be implemented and how any ongoing effort will be funded. If not already addressed as part of the project, how will findings, results, and products developed be implemented after project completion? If additional work is needed, how will this be funded?**MAISRC has a demonstrated track record of not only conducting high-quality research, but also providing the public and managers with research tools and science-based information in understandable formats. This ENRTF funding would ensure that these activities will continue until 2025. We have, and will continue to, leverage the ENRTF investment with significant UMN support (faculty positions, foregone ICR, etc.) and external grant support from 'Partnership Projects'. However, to ensure MAISRC remains focused on Minnesota’s priorities and solutions-oriented research, additional ENRTF support is crucial.

## **Other ENRTF Appropriations Awarded in the Last Six Years**

|  |  |  |
| --- | --- | --- |
| **Name** | **Appropriation** | **Amount Awarded** |
| Aquatic Invasive Species Research Center - Phase II | M.L. 2017, Chp. 96, Sec. 2, Subd. 06a | $2,700,000 |
| Building Knowledge and Capacity to Solve AIS Problems | M.L. 2019, First Special Session, Chp. 4, Art. 2, Sec. 2, Subd. 06a | $4,000,000 |

## **Budget Summary**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Category / Name** | **Subcategory or Type** | **Description** | **Purpose** | **Gen. Ineli gible** | **% Bene fits** | **# FTE** | **Class ified Staff?** | **$ Amount** |
| **Personnel** |  |  |  |  |  |  |  |  |
| Graduate Student |  | Perform research on the prevention, control and management on AIS in Minnesota. Fringe rate includes cost of tuition. |  |  | 87.9% | 1 |  | $103,714 |
| Undergraduate Students |  | 2 Undergraduate students to support MAISRC research program, outreach to stakeholders, and dissemination of research findings. |  |  | 0% | 1 |  | $15,600 |
| Research Associate |  | Perform dedicated research on the control and management of zebra mussels in Minnesota. |  |  | 36.5% | 2 |  | $218,400 |
| Contract Faculty |  | Perform dedicated research on control and management of common carp in Minnesota. |  |  | 36.5% | 1 |  | $128,251 |
| Laboratory Manager |  | Maintain MAISRC Containment Lab to ensure efficiency and accessibility for MAISRC projects. |  |  | 31.8% | 0.1 |  | $8,486 |
| Communications Specialist |  | Maintain MAISRC communications platforms to effectively disseminate research findings and connect MAISRC research with the public. |  |  | 31.8% | 1.98 |  | $188,136 |
| Co-Project Manager |  | Coordinate MAISRC research program, outreach to stakeholders, and dissemination of research findings. |  |  | 36.5% | 1.88 |  | $203,718 |
| Project Manager |  | Lead MAISRC research activities and coordinate with local, state, and national agencies and AIS professionals. |  |  | 36.5% | 1 |  | $198,842 |
|  |  |  |  |  |  |  | **Sub Total** | **$1,065,147** |
| **Contracts and Services** |  |  |  |  |  |  |  |  |
| Co-PIs | Sub award | Reserves for allocation of subawards through MAISRC RFPs in 2021 and 2022. Subproject budget details described in attachment. |  |  |  | 0 |  | $2,623,353 |
| Private Contractors | Professional or Technical Service Contract | General Operating Services: Mailing outreach materials, audio/visual associated with seminars and conferences, email newsletter platform, dissemination of research results through social media, etc. |  | X |  | 0 |  | $6,000 |
| Private Contractors | Professional or Technical Service Contract | Rentals: Space and facilities for conferences and events (e.g. annual Showcase). |  |  |  | 0 |  | $10,000 |
|  |  |  |  |  |  |  | **Sub Total** | **$2,639,353** |
| **Equipment, Tools, and Supplies** |  |  |  |  |  |  |  |  |
|  | Tools and Supplies | General Operating Supplies | Supplies for research coordination (e.g. paper, office supplies, ink/toner). | X |  |  |  | $7,500 |
|  | Equipment | Field/Lab Equipment | Equipment for research in the field and lab (e.g. storage containers, software, nets, and other equipment). |  |  |  |  | $8,000 |
|  | Tools and Supplies | Field/Lab Supplies | Supplies for research in the field and lab (e.g. piping, fish food, gas for boats, tanks, reagents, sampling supplies, and other consumables). |  |  |  |  | $6,000 |
|  |  |  |  |  |  |  | **Sub Total** | **$21,500** |
| **Capital Expenditures** |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  | **Sub Total** | **-** |
| **Acquisitions and Stewardship** |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  | **Sub Total** | **-** |
| **Travel In Minnesota** |  |  |  |  |  |  |  |  |
|  | Miles/ Meals/ Lodging | Travel for MAISRC staff. | AIS coordination meetings, support of MAISRC research, and dissemination of research results. |  |  |  |  | $6,000 |
|  | Conference Registration Miles/ Meals/ Lodging | Project Manager travel to two conferences. | Presentation of research findings. |  |  |  |  | $4,000 |
|  |  |  |  |  |  |  | **Sub Total** | **$10,000** |
| **Travel Outside Minnesota** |  |  |  |  |  |  |  |  |
|  | Miles/ Meals/ Lodging | Project Manager travel to four regional AIS meetings. | Coordination of AIS research with regional managers and researchers. | X |  |  |  | $4,500 |
|  | Conference Registration Miles/ Meals/ Lodging | Project Manager travel to one national conference. | Presentation of research findings to strategic audiences and expanding AIS research for Minnesota. | X |  |  |  | $3,500 |
|  |  |  |  |  |  |  | **Sub Total** | **$8,000** |
| **Printing and Publication** |  |  |  |  |  |  |  |  |
|  | Printing | Annual research report, fact sheets, training materials, white papers, etc. | Dissemination of research findings and support for research activities. |  |  |  |  | $6,000 |
|  |  |  |  |  |  |  | **Sub Total** | **$6,000** |
| **Other Expenses** |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  | **Sub Total** | **-** |
|  |  |  |  |  |  |  | **Grand Total** | **$3,750,000** |

### **Classified Staff or Generally Ineligible Expenses**

|  |  |  |  |
| --- | --- | --- | --- |
| **Category/Name** | **Subcategory or Type** | **Description** | **Justification Ineligible Expense or Classified Staff Request** |
| **Contracts and Services** - Private Contractors | Professional or Technical Service Contract | General Operating Services: Mailing outreach materials, audio/visual associated with seminars and conferences, email newsletter platform, dissemination of research results through social media, etc. | Part of MAISRC's core work is to disseminate research results and serve has a resource for individuals, groups, and advisory committees on AIS and science-based prevention and management recommendations. This is done in large part through mailings, seminars/conferences, email, and social media to reach as many people as possible through various platforms. These expenses benefit Minnesota's environment by making MAISRC research accessible and more likely to be implemented in communities around the state. |
| **Equipment, Tools, and Supplies** |  | General Operating Supplies | MAISRC's core work is to prioritize and facilitate AIS research that advances AIS solutions for Minnesota. In order to do this work effectively, MAISRC staff need office supplies like paper, pens, ink/toner, file folders, etc. Office materials like these are not provided by the UMN. |
| **Travel Outside Minnesota** | Miles/Meals/Lodging | Project Manager travel to four regional AIS meetings. | Working with regional AIS managers and researchers is essential to advancing AIS solutions for Minnesota by sharing knowledge and coordinating control/management efforts that are rooted in the latest science. Participating in regional meetings allows MAISRC to engage in AIS prevention and management efforts that will have direct impacts on Minnesota waters. |
| **Travel Outside Minnesota** | Conference Registration Miles/Meals/Lodging | Project Manager travel to one national conference. | Sharing research findings at regional and national conferences allows MAISRC researchers to connect with others in the field and advance knowledge and AIS solutions. Shared research findings directly impact Minnesota by bringing new ideas and information into the state that can further AIS prevention, control, and management efforts. |

### **Non ENRTF Funds**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Category** | **Specific Source** | **Use** | **Status** | **Amount** |
| **State** |  |  |  |  |
| In-Kind | University of Minnesota foregone indirect costs | Administrative support of MAISRC activities including payroll and human resources, finance, facilities, and IT. | Secured | $2,750,000 |
| Cash | Environment and Natural Resources Appropriation M.L. 2019, Art. 1, Sec. 3, Subd. 3(j) | Appropriation language: prioritize, support, and develop research-based solutions that can reduce the effects of aquatic invasive species in Minnesota by preventing spread, controlling populations, and managing ecosystems and to advance knowledge to inspire action by others. | Secured | $1,020,000 |
|  |  |  | **State Sub Total** | **$3,770,000** |
| **Non-State** |  |  |  |  |
|  |  |  | **Non State Sub Total** | **-** |
|  |  |  | **Funds Total** | **$3,770,000** |

## **Attachments**

### **Required Attachments**

#### ***Visual Component***

File: [b2c15f35-48c.pdf](https://lccmrprojectmgmt.leg.mn/media/map/b2c15f35-48c.pdf)

#### ***Alternate Text for Visual Component***

Minnesota Aquatic Invasive Species Research Center: Building knowledge and capacity for AIS solutions.   
A three-step process is outlined:  
1. Ideas & Needs  
a. Inclusive prioritization process to identify most pressing needs  
b. Annual RFPs allow for agile response to emerging issues  
2. Research  
a. Two-year projects take testing from the lab to the lake   
b. International collaboration, Minnesota-focused  
3. Real World Solutions  
a. Proven tactics and recommendations  
b. Findings shared with decisio...

### **Optional Attachments**

#### ***Support Letter or Other***

|  |  |
| --- | --- |
| **Title** | **File** |
| MAISRC Letters of Support | [a29058ec-5b9.pdf](https://lccmrprojectmgmt.leg.mn/media/attachments/a29058ec-5b9.pdf) |
| Subproject Overall Status Update Table Template | [10835890-631.pdf](https://lccmrprojectmgmt.leg.mn/media/attachments/10835890-631.pdf) |
| Background Check Cert. | [27b1d423-54c.pdf](https://lccmrprojectmgmt.leg.mn/media/attachments/27b1d423-54c.pdf) |

## **Difference between Proposal and Work Plan**

#### ***Describe changes from Proposal to Work Plan Stage***

Due to the budget reduction of 25%, we have reduced the number of expected sub-projects we can support through our RFP accordingly.

## **Additional Acknowledgements and Conditions:**

The following are acknowledgements and conditions beyond those already included in the above workplan:

**Do you understand and acknowledge the ENRTF repayment requirements if the use of capital equipment changes?**   
 N/A

**Do you agree travel expenses must follow the "Commissioner's Plan" promulgated by the Commissioner of Management of Budget or, for University of Minnesota projects, the University of Minnesota plan?**   
 Yes, I agree to the UMN Policy.

**Does your project have potential for royalties, copyrights, patents, or sale of products and assets?**   
 Yes

**Do you understand and acknowledge IP and revenue-return and sharing requirements in 116P.10?**   
 Yes

**Do you wish to request reinvestment of any revenues into your project instead of returning revenue to the ENRTF?**   
 No

**Does your project include original, hypothesis-driven research?**   
 Yes

**Does the organization have a fiscal agent for this project?**   
 Yes, Sponsored Projects Administration