

UNIVERSITY OF MINNESOTA

Twin Cities Campus

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December 2, 2013

To: Susan Thornton, LCCMR Director
From: Brian Buhr, Interim Dean, UM College of Food, Agricultural and Natural Resource Science



Cc: Peter Sorensen, Scientific Director, MAISRC
Becca Nash, Administrative Director, MAISRC
Greg Cuomo, Division Head, UM College of Food, Agricultural and Natural Resource Science
Susan Galatowitsch, Department Head, Fisheries, Wildlife and Conservation Biology
Mike Banker, LCCMR Assistant Director

RE: Conditions on LCCMR Recommended Project ML 2014 097-D, "Blocking Asian Carp by Optimizing Locks and Dams"

As we discussed on October 30, the condition placed on the recommendation to fund the LCCMR project proposed by Peter Sorensen (097-D, referenced above), required finalization of two MAISRC coordination documents: the internal University of Minnesota MOU and the LCCMR Reporting and Procedures guidelines. We agreed that the guidance formalized by these documents should ensure that MAISRC can be administered efficiently and facilitate MAISRC's coordination with LCCMR.

I am pleased to report that both of these documents are now final. Please find attached: 1) the signed University of Minnesota MOU, and 2) the LCCMR Reporting and Procedures guidelines, which has been accepted by you and Peter Sorensen. Additionally, as we discussed, LCCMR will be informed about and invited to future Center Advisory Board meetings as a guest. If you have any questions about these documents please contact Becca Nash, who in her capacity as Administrative Director, is the primary contact for non-science aspects of MAISRC.

**MEMORANDUM OF UNDERSTANDING BETWEEN THE COLLEGE OF FOOD,
AGRICULTURAL AND NATURAL RESOURCE SCIENCES, THE DEPARTMENT OF
FISHERIES, WILDLIFE, AND CONSERVATION BIOLOGY AND THE MINNESOTA
AQUATIC INVASIVE SPECIES COOPERATIVE RESEARCH CENTER**

The Minnesota Aquatic Invasive Species Research Center (MAISRC) was established in 2012 following an appropriation by the Minnesota Legislature from the Environment and Natural Resources Trust Fund (ENRTF) and the Clean Water Fund (CWF) (Laws of 2012, Chapter 264, article 2, section 4 and article 4, section 3).

The MAISRC was conceived by Dr. Peter Sorensen and established as a multi-disciplinary, collaborative scientific research center that would draw on expertise from multiple academic units of the University of Minnesota and that would also work actively with governmental units (federal, state, local) and other academic institutions in flexible and creative manners to better understand the biology of aquatic invasive species (AIS) so they could be controlled.

The MAISRC is based in the College of Food, Agricultural and Natural Resource Sciences (CFANS). The Department of Fisheries, Wildlife, and Conservation Biology serves as the administrative home of the MAISRC unless the CFANS Dean assigns this responsibility to another unit within the college.

This Memorandum of Understanding (MOU) addresses the overall structure and philosophy of MAISRC and its relationship with CFANS and the departments within CFANS with which it operates. Since the administrative home of MAISRC is in FWCB, and since some of the founding faculty, as well as the founding scientific director, are members of FWCB, special attention in this MOU is given to the relationship among MAISRC, CFANS, and FWCB.

This MOU also addresses policies and procedures needed to implement the funding provided through the state appropriations referenced above as well as for subsequent awards.

The MAISRC will be guided by this MOU and, except where explicitly outlined in this MOU, by the policies of CFANS and FWCB.

Exhibits of this MOU include the following:

Exhibit A: MOU between MAISRC, University of Minnesota, and Minnesota Department of Natural Resources

Exhibit B ENRTF 2013 Work Plan dated 6-25-13

Exhibit C: Draft Overview: Minnesota Aquatic Invasive Species Research Center Grants Format dated 11-22-13

Where details in these Exhibits and this MOU differ, this MOU will take precedence

1 - MINNESOTA AIS RESEARCH CENTER GOALS

The goal of the MAISRC is ‘to develop solutions to Minnesota’s AIS problems by developing an in-depth understanding of the ecology, biology, and biochemistry of key AIS and sharing this information with AIS managers for implementation” (Exhibit A). It seeks to accomplish this goal by “developing scientific expertise in [a] variety of disciplines so that new solutions can be devised and extant ones improved while educating management agencies and the public” (Exhibit B). The MAISRC will function in collaboration with the Minnesota Department of Natural Resources (MNDNR), U.S. Forest Service, as well as other federal, state and local governmental agencies and private citizens groups.

The MAISRC is envisioned to expand in scope and extend over time by attracting additional state funding and capturing nationally competitive grants to establish a center of excellence that will serve the University for the indefinite future.

2 - MAISRC PROJECTS, FACULTY, AND STAFF DEFINED

2a. MAISRC Projects Throughout this MOU, “MAISRC Projects” collectively refers to those funded by ENRTF 2012, ENRTF 2013, and CWF 2012 and those pursued by MAISRC Faculty or prospective MAISRC Faculty:

- i. Fulfill the goal of the MAISRC as determined by the Scientific Director and stated in Section 1 above;
- ii. Address solutions to problems associated with aquatic species originally identified by the Scientific Director in the ENRTF 2012 and 2013 Work Plans, species identified on the DNR Prohibited Invasive Species and Regulated Invasive Species (or candidate) lists, or those agreed to by the CAB (as defined in Section 3a) and vetted by the Scientific Director; and
- iii. Have been approved by the Center Faculty Group (as defined in Section 3c).

Given the multi-disciplinary, collaborative, and creative nature of the research center, MAISRC Projects will be varied and will be treated differently for purposes of research identification and proposal review, hiring, access to MAISRC Resources (as defined in Section 8), cost sharing, and salary savings. MAISRC Projects are therefore further categorized and defined as follows:

1st Generation Core Projects: Multi- year MAISRC Projects funded by ENRTF 2012, ENRTF 2013 (i.e., referred to by LCCMR as Subprojects), and CWF 2012.

Next Generation Core Projects: Multi- year MAISRC Projects funded by awards other than ENRTF 2012, CWF 2012 and ENRTF 2013. Projects already underway are eligible to become MAISRC Next Generation Core Projects.

Partnership Projects: Collaborative MAISRC Projects in which MAISRC Faculty time and/or MAISRC Resources are shared with non MAISRC researchers and entities.

Director- Awarded Projects: MAISRC Projects funded as one-time awards through CWF 2012 and/or other funding at the discretion of the Scientific Director.

Policies and procedures related to MAISRC Projects are discussed in Sections 4-8.

2b. MAISRC Faculty Throughout this MOU, “MAISRC Faculty Members” are defined as those funded through a 1st Generation Core Project or those who are approved to join the Faculty by Faculty vote. Continuation of MAISRC Faculty status requires participation in an active project on AIS within the past year and attendance at CFG meetings. The Scientific Director will notify the Center Faculty Group and the individual if there is a change in status.

2c. MAISRC post docs, graduate students, and staff are those who are supported in part or in whole through a MAISRC Project.

Roles and responsibilities of the Scientific Director and Administrative Director are outlined in Section 3a and 3b below.

3. MAISRC DECISION MAKING GUIDANCE AND ADMINISTRATIVE STRUCTURE

MAISRC is led by a Scientific Director with an Administrative Director and Center Faculty Group (CFG) and overall guidance by two committees: an internal Center Administrative Review board (CAR) and an external Center Advisory Board (CAB). Technical level guidance is provided by the Center Peer Review Subcommittee (CPR) and the Center Technical Subcommittee (CTC).

3a. Scientific Director

The MAISRC is led by a Scientific Director who is a tenured professor at the University of Minnesota. The major responsibilities of the Scientific Director are setting the scientific vision and goals for the Center, facilitating continuous progress toward these goals, and developing research programs. The Scientific Director will do this by establishing and working with the CAB, promoting the MAISRC, and attracting new MAISRC funds. The Scientific Director will also do this by launching 1st Generation Core Projects: setting MAISRC research topic priorities and identifying MAISRC Faculty members and attracting new MAISRC Faculty members to conduct the research identified. In addition, the Scientific Director will collaborate with the Administrative Director to develop educational programs. The Scientific Director will develop faculty and scientific staff position descriptions in consultation with the Administrative Director and CFANS Human Resources. The Scientific Director will approve Next Generation Projects and will determine what collaborative efforts to promote through Director- Awarded Projects. The Scientific Director also decides how unrestricted funding, ICR, and salary savings returned to MAISRC are used after consultation with the CFG. The Scientific Director works with appropriate department heads to review research productivity of MAISRC non-tenured faculty. The Scientific Director works with the Administrative Director to develop and communicate scientific vision and goals of MAISRC.

3b. Administrative Director

MAISRC has a full time administrator (the Administrative Director) who manages the administration of the MAISRC's programs, grants, and activities. The Administrative Director is responsible for, among other things: managing hiring, faculty searches, grant submissions, project report coordination and submissions, faculty and associated advisory committee meetings, internal meetings, and office space. Decisions related to scientific equipment, technicians, and laboratory facilities will be made in consultation with the Scientific Director.

He/she is also responsible for coordinating and developing internal communications with University, CFANS, FWCB, and MAISRC staff, including the Scientific Director. In addition, the Administrative Director, following consultation with the Scientific Director and appropriate University staff, will work to promote effective public affairs, government relations, and development efforts that encompass the strategic vision of MAISRC. The Administrative Director will be supported in this work with appropriate administrative staff (see Section 9).

3c. Center Advisory Board (CAB)

The CAB provides strategic-level advice on numerous policy issues to the Scientific Director who is *ex officio* and non-voting. The Commissioner of the DNR is also *ex officio* but has a vote. The Dean/Dean Designee of CFANS is on CAB (*ex officio*, non-voting) as are 10 voting representatives from the federal, state and private sector. The DNR and MAISRC Scientific Director select the advisory board. Meetings are organized by MAISRC's Administrative Director. Actions recommended by the CAB shall be adopted by consensus if possible and, where not, by a simple majority of voting members present. Other than the presence of the CFANS Dean/Dean Designee on CAB, this group has no direct link to CFANS or FWCB but it may serve as a check on some of its activities so is described here.

The roles and responsibilities of CAB are further described in Exhibit A.

3d- Center Administrative Review Board (CAR)

The CAR is created by this MOU to provide administrative oversight for MAISRC. This includes: approval of Faculty positions; approval of 1st Generation Work Plans and budgets; approval of changes to research directions including to work plans, budgets, and faculty and administrative positions; and resolution of scientific and budget conflicts. The Dean of CFANS is the chair and if consensus cannot be reached has ultimate decision making authority. The CAR meets as needed. CAR business, including approvals, can be conducted by email unless otherwise determined by the Administrative Director. The members of CAR are the CFANS Dean or Designee, Heads of all Departments with MAISRC Faculty (both inside and outside of CFANS), and the Scientific Director. All members have a vote. Meetings are organized by MAISRC's Administrative Director.

3e –Center Faculty Group (CFG)

The CFG helps guide the MAISRC's long- and short- range research focus while advising the Scientific Director. All MAISRC Faculty belong to this group. The CFG will review proposed and ongoing research and all aspects of MAISRC function (public relations, facility and space use, research and outreach progress, funding, etc.). Specifically, it will evaluate and register opinions on research pre-proposals and changes in research directions as described in this MOU. The Center Faculty Group will select its own chair (2-year term). The MAISRC Scientific Director is *ex officio* and non-voting. The CFG will meet at least four times during the year to: (1) form ad hoc committees (ex. research coordination) as needed and receive their reports; (2) review and admit new members to the Center; (3) discuss and make recommendations (with input from the Administrative Director) on space and facility use to the CFANS Facility and Space Coordinator and relevant Department Heads (inside and outside of CFANS); (4) review and vote on proposed projects; (5) recommend to the Scientific and Administrative Directors the allocation of available MAISRC Resources; (6) advise on MAISRC public relations; and (7)

recommend social and educational events. A quorum of a simple majority of MAISRC Faculty Members is required for decisions. Decisions will be made by simple majority of those present.

3f- The Center Peer Review Subcommittee (CPR) is an ad-hoc subcommittee of the CFG that conducts reviews of 1st Generation Core Projects and Next Generation Core Projects (if needed). This subcommittee is administered by the Administrative Director and reports to the Scientific Director and its notes will be available to the Scientific Director and CAR. This subcommittee contains two MAISRC Faculty members and one non-MAISRC scientist appointed by the Scientific Director in agreement with the chair of the CFG. It will solicit reviews both internally and externally following guidelines found in section 5. The Scientific Director will not serve on the CPR or conduct reviews, but may suggest external peer reviewers.

3g-The Center Technical Subcommittee (CTC) is a subcommittee of the CFG that will promote collaboration between MAISRC and other key research and outreach groups including the MN DNR. It will review current and predicted AIS challenges and provide advice on how to meet them through research and outreach collaborations. It will contain three MAISRC Faculty members, 3 DNR staff and up to two other members. The Scientific Director will be *ex officio*. It will meet twice a year and advises both CAB and CFG.

4- FACULTY-LEVEL APPOINTMENTS THAT ARE FUNDED BY MAISRC

4a. Hiring Procedures

All Faculty members hired into the MAISRC will follow the hiring policies and procedures of the appropriate Colleges and Departments and comply with University policy. Hiring of non-faculty positions by MAISRC Faculty will follow the hiring policies of the appropriate Colleges and Departments. Hiring of the MAISRC Administrative Director and administrative support staff will be guided by FWCB policies and procedures because FWCB is the administrative home of MAISRC.

The following hiring procedures cover postings for MAISRC Faculty members whose positions will reside within FWCB.

The Scientific Director will initiate the hiring process for new Faculty members funded by ENRTF 2012, ENRTF 2013, CWF 2012, or other funds secured for MAISRC Projects, by recommending a position description and academic home department to CAR for approval. If a position entails a change in Work Plan direction, CAB must also approve the proposed work plan change before the position description is finalized.

All proposed FWCB Faculty position descriptions recommended for posting by the Scientific Director and CAR will be submitted through FWCB to CFANS for approval. The FWCB Department Head will be the hiring authority and will be advised by the MAISRC Scientific Director. The FWCB Department head will select the search committee from a slate of candidates provided by the MAISRC Scientific Director. This slate will include the number of members needed for the committee, plus two. Once a position is approved by the CFANS Dean or Dean Designee, recommendations for a search committee and draft position description will be submitted to CFANS HR for approval. A final position description will be submitted from the search committee through the FWCB Department Head to CFANS HR for approval. Searches will be facilitated by the Administrative Director with support from MAISRC staff and

CFANS Human Resources. Advertisement of the position and candidate interviews are governed by CFANS guidelines.

During the interview process, faculty-level candidates must present a seminar to, and be available to meet with, MAISRC and FWCB faculty. A meeting of the CFG will be managed by the Administrative Director to discuss all candidates and to provide input to the search committee. A special meeting of FWCB tenure-track faculty will be arranged by the Department Head to discuss and vote on the acceptability of each candidate to have status as a faculty member within the department and to provide this input to the search committee. The chair of the Search Committee conducts reference checks on candidates. After collecting input from all of the above, the search committee provides its report of strengths and weaknesses to the Scientific Director, who shares the report with and makes a hiring recommendation to CAR. The CAR must, by consensus, approve the recommended candidate for offer. The FWCB Department Head, as the hiring authority, will make an offer and negotiate salary, start date, and start-up package of the MAISRC Faculty member in agreement with CFANS Finance and the Scientific Director. The MAISRC Scientific Director can provide input at every step of this process. Issues where the CAR cannot come to consensus will be decided by the CFANS Dean/ Dean Designee.

Non-tenure-track MAISRC Faculty positions hired into FWCB are not intended to be tenure track, nor is there any guarantee they will become tenure-track. To become tenure-track, funding must be available, the position has to meet FWCB strategic goals and be recommended to CFANS by the FWCB Department Head, and the position needs to be approved by the Dean's Council.

4b -Performance Review Procedures for MAISRC Faculty

Tenure-track, tenured, and non-tenured MAISRC Faculty members are afforded the same academic rights as any other faculty member at the University of Minnesota. All MAISRC Faculty members will be reviewed following 7.12 guidelines and all MAISRC Faculty members residing in FWCB will be reviewed annually following 7.12 guidelines in FWCB.

The FWCB Department Head will request written input from the MAISRC Scientific Director on the non-tenure track MAISRC Faculty members' responsibilities associated with MAISRC project(s). Input from the MAISRC Scientific Director will be requested with at least a two week notice. The Department Head will prepare the non-tenure track MAISRC Faculty member's annual review letter. This annual review letter will include the written input from the MAISRC Scientific Director.

The Scientific Director will provide to the Department Head recommendations for merit increases for non-tenure MAISRC Faculty.

At least one time per year, the Department Head and the MAISRC Scientific Director will meet with the non-tenure track MAISRC Faculty member to discuss productivity and expectations associated with the MAISRC portion of the faculty member's work. Unresolved issues involving progress, productivity and continuation of appointment between the Department Head and the Scientific Director will be brought to CAR for consultation and decision.

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The FWCB Department Head will conduct the annual faculty evaluations of the Scientific Director. This review covers research, service and administration of MAISRC. Timing of the reviews (i.e., deadlines) is guided by the review timelines in the FWCB.

If the MAISRC Scientific Director is not a member of the FWCB faculty, the FWCB Department Head or the CFANS Dean/designee will evaluate the administrative accomplishments and the head of the department of the MAISRC Scientific Director will evaluate research, outreach and service. At least one time per year, the MAISRC Scientific Director and his/ her Department head will meet with the Dean to give a MAISRC update.

5- MAISRC RESEARCH IDENTIFICATION AND APPROVAL PROCESS

This MOU outlines processes for identifying and approving research proposals for MAISRC Projects. These processes vary depending on the type of MAISRC Project and are generally intended to allow input from the Scientific Director, CFG, CAB, and CAR.

MAISRC Projects are defined in Section 2.

MAISRC Projects funded by the ENRTF 2012 and ENRTF 2013 are governed by their respective MAISRC ENRTF Work Plans and Subproject Work Plans. Changes to MAISRC priorities and positions as identified in these Work Plans must be approved by the CAB and CAR respectively. Unresolved issues will be brought to the CFANS Dean/Designee for decision.

5a. 1st Generation Core Projects are unique in that the Scientific Director has already secured funding for these projects, set priorities for research topics, and in some cases identified specific MAISRC Faculty members to conduct the research (Exhibit B). Additionally, the sponsor has delegated peer review responsibilities for these Projects (if needed) to the MAISRC. 1st Generation Core Projects therefore will have a unique project identification and approval process, which is described here.

The Scientific Director is responsible for bringing forward new research areas to CAB for consideration. Prior to developing a proposal for an LCCMR Subproject, a MAISRC Faculty member will meet with the Scientific Director to discuss the Scientific Director's vision for the research topic, including the relevance of the research to the goals of the MAISRC, to AIS management in the state, and to scientific advancement. The CAB's interest in the general research topic will also be discussed. Approximately a month later, the MAISRC Faculty member will present a research pre-proposal in a 15-30 minute oral presentation to the CFG. The presentation will include their proposed approaches to address the identified topics and their need for MAISRC Resources. The CFG will provide written input to this MAISRC Faculty member and the Scientific Director on strengths and weaknesses of the proposed work and suggest opportunities for improvement. The MAISRC Faculty member can use this input to determine whether he/she will submit a full proposal for funding and if so, how to maximize its suitability to achieve MAISRC research priorities.

Full proposals will follow the standard format identified by MAISRC (Exhibit C) and will be submitted to the Administrative Director by a specified date. Specific percentages of time and access to MAISRC Resources must be clearly articulated as part of the project proposal. The CPR subcommittee will work with the Administrative Director to request at least two reviews

from non-MAISRC scientists and at least one from MAISRC Faculty. These reviews will address i) the quality of science, ii) the contribution to understanding of AIS that may be important to the state and center and iii) likelihood of success, which could consider experimental design, proposed budget, availability of facilities, and investigator performance. The CPR subcommittee will meet to consider the reviews and prepare a summary report to the Scientific Director that includes strengths and weaknesses of the proposal, the extent to which the project should be considered a priority for funding, and ways to improve the proposed research. The Scientific Director can request one revision and will then make a funding recommendation to CAR using this information and past feedback from CFG and CAB. The CAR will discuss the recommendation and provide final approvals.

Approved projects may only commence after appropriate revision and submission of a Subproject Work Plan to LCCMR staff for final approval. The MAISRC Faculty member will also work with the Administrative Director to incorporate a summary of the Subproject into the Overall ENRTF Work Plan and Budget. The Scientific Director and the MAISRC Faculty member will initiate the routing and approval of a PRF per University policy, adding the Faculty member as a MAISRC Co-PI and LCCMR Subproject Project Manager.

Awarded funds will be transferred by CFANS Finance to a child account within the appropriate Department for use on the MAISRC 1st Generation Core Project. Awarded funds will be managed by the MAISRC Faculty member as a Co-PI responsible for the Subproject within the guidelines approved for the work. The Co-PI will administer his/her own projects and child accounts but make yearly progress reports to the CFG, including the Scientific Director. The Co-PI will copy the Scientific Director and Administrative Director on Subproject Work Plan updates and all reports and amendment requests to the LCCMR. Cost overruns must be covered by the Co-PI of Subprojects and not by MAISRC funds. Funds remaining after project completion will be returned to MAISRC. Compliance issues will be forwarded to CAR and, if necessary, to the Dean or his designee.

If funds become available through discontinuation or reduction in scope of any 1st Generation Core project will be returned to MAISRC. Reallocation of funds will follow the process outlined in Section 5a of this document.

5b. Next Generation Core Projects

Faculty members are strongly encouraged to seek funds or use existing funds to expand and extend their research in fulfillment of MAISRC goals and priorities. MAISRC Faculty members are also encouraged to collaborate in research project development, use of MAISRC Resources, and in building common research capacity (i.e. equipment, vehicles, shared staff support). All Core Projects that use MAISRC Resources are expected to pay for the direct costs associated with use, repair, maintenance, salary and fringe of these resources and/or to support these and other costs with indirect cost recovery (ICR) or to contribute equivalent in-kind support. When MAISRC Faculty members wish to seek funding, the following identification and approval process will be followed:

The Faculty member meets with the Scientific Director to discuss a research opportunity, including the relevance of the project to the goals of the MAISRC, to AIS management in the state, and to scientific advancement. The CAB's interest in the general research topic will also be discussed. Assuming resources are available, the Faculty member will make a 15-30 minute oral

presentation to the CFG. The presentation will include his/her proposed approaches to address the identified topics, needs for MAISRC Resources and potential contributions to MAISRC. The CFG will provide written input to this Faculty member and the Scientific Director on strengths and weaknesses of the proposed work and suggest opportunities for improvement.

The CFG then votes on the proposed MAISRC project based on i) the quality of science, ii) the contribution to understanding of AIS that may be important to the state and center and iii) likelihood of success, which could consider current expertise and resources, experimental design, proposed budget, availability of facilities, and investigator performance. The vote will also include recommendation to use a specific percentage of MAISRC Resources if Resources are requested. An affirmative vote by the CFG will mean that the project will be considered a Next Generation Core Project, if funded.

In the case of non-tenured MAISRC Faculty members whose salary is funded through a 1st Generation Core Project, the Scientific Director must consent to the percent of the effort proposed as part of the Next Generation Core Project.

If appropriate, final submission of the proposal would follow the University process, including routing of a PRF for approval. The FWCB Department Head must be notified prior to routing the PRF that a proposed project is designated a MAISRC Project. For these projects, the Scientific Director will be included as a PRF approver and the Chair of the CFG and Administrative Director will be alternate approvers.

Next Generation Core Projects will be governed by the work plans, guidelines and conditions of those awards. Changes to positions and priorities as identified in the final project proposal must be approved by the CAR and CAB respectively if the proposed change would result in research not aligned with stated MAISRC priorities. Once a project is designated and funded as a MAISRC project, it remains so until the grant supporting the project is closed.

5c. Partnership Projects

The MAISRC Faculty members may choose to share MAISRC Resources with non MAISRC researchers. Conversely, non-MAISRC Faculty may choose to share resources with the MAISRC. This may be done for partnership building or other reasons. These Partnership Projects will have access to MAISRC Resources as available as determined by the CFG, including the Scientific Director, with assistance from the Administrative Director.

The project proponent or MAISRC faculty will make a simple written request to the Scientific Director, Administrative Director and CFG Chair for approval. If either believes there is a potential for conflicts with existing users, a full meeting of CFG will be convened. CFG would vote to approve the request or to seek additional information from the project proponent. For projects that make a significant demand on MAISRC Resources, the CFG may require the partner to enter into an MOU with the MAISRC or be reconsidered as a Core Project.

5d. Director-Awarded Projects

Director-Awarded Projects are determined at the sole discretion of the Scientific Director. The Scientific Director may use CWF 2012 and other funds designated as discretionary to the Scientific Director for projects to address, among other things, emerging issues, collaborative opportunities, investment in MAISRC Resources, and/or interests of his or the CAB's not

otherwise addressed. The Scientific Director should inform the CFG of Director-Awarded Projects that have been approved.

5e. Development Activities

All fundraising related to the MAISRC, in whole or in part, will be coordinated through the Administrative Director, who is lead development agent for the Center. Fundraising will be consistent with the underlying goals and vision of the MAISRC. All donations must follow donor intent according to University policy.

6. INDIRECT COST RECOVERY

As the MAISRC must maintain and repair MAISRC facilities and equipment and support MAISRC administrative functions (see Section 8 and 9), the 25% indirect cost recovery (ICR) returning to a department from MAISRC Core Projects will be split 50%/50% between the MAISRC and the MAISRC Faculty member's home department. That is, MAISRC and a department will each receive 12.5% of total ICR from a grant. Funds will go to FWCB and they will be responsible for the distribution. When ICR is not provided by an award, FWCB will not cover the department share of ICR required by CFANS; this will be the responsibility of MAISRC or MAISRC Faculty.

When a MAISRC Faculty member's home department is other than FWCB, the Scientific Director will negotiate the ICR sharing with that department for the departmental share of the ICR.

7. TEACHING AND SALARY SAVINGS:

In the case of tenured and tenure-track MAISRC Faculty (other than the Scientific Director in his administrative capacity) who may develop salary savings for FWCB- related salary from MAISRC Projects, FWCB will receive the salary savings. Non-tenure track MAISRC Faculty salary and non-Faculty MAISRC salary savings will go to the MAISRC.

For MAISRC Projects that provide salary for the Scientific Director in lieu of his teaching responsibilities, FWCB will retain the teaching salary savings.

8- SPACE, EQUIPMENT AND FACILITIES

"MAISRC Resources" are considered the Engineering and Fisheries Laboratory (EFL), vehicles and equipment purchased with ENRTF 2012, ENRTF 2013, and CWF 2012 funds, those purchased through donations to the MAISRC, those purchased with Next Generation Core Project Funds, or those loaned to the MAISRC with approval from Administrative Director. MAISRC Resources also include staff that supports the Center as a whole or multiple MAISRC Projects, such as administrative staff, communications staff, shared field or lab technicians, or EFL lab managers.

As long as the space and facilities in EFL are assigned to the MAISRC, costs associated with use, repair, and maintenance of MAISRC space and facilities in the EFL are the responsibility of MAISRC. Prior to the establishment of MAISRC, the space and facilities used by the MAISRC in the EFL had been assigned to FWCB. If MAISRC ceases to exist or no longer uses the EFL,

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EFL space reverts to FWCB for use as an aquatic holding facility or the best suited department as determined by the CFANS Dean or Dean Designee.

Space and facilities in Hodson Hall used by MAISRC remains assigned to FWCB. The FWCB Department Head has responsibility for approving use and change of use of laboratory, office, and other space in Hodson Hall. FWCB Faculty members who are also in MAISRC are entitled to space equivalent to that of all other FWCB faculty members. FWCB is responsible for repair and maintenance of the durable infrastructure of the Hodson Hall facilities, but not for laboratory equipment. Space in the Northern Research Station is assigned to MAISRC and is administered by CFANS under the direction of the FWCB Department Head as long as the lease is in effect.

If MAISRC ceases to exist (see Section 11) or no longer uses MAISRC Resources as determined by consensus of CAR, these MAISRC Resources will revert to the sponsor or to FWCB.

9 – ADMINISTRATIVE SUPPORT

FWCB provides administrative support for MAISRC faculty, staff and students related to human resources and payroll at a level comparable to other FWCB faculty members, staff and students. CFANS Development and Public Affairs provide fundraising and publicity support for MAISRC. The CFANS ESPM Accounting Team will provide finance and accounting support for MAISRC. Other administrative support required for MAISRC functions and for faculty, staff and students will be provided by one .75 FTE administrative support staff, funded by MAISRC, and reporting to the Administrative Director. A search for this position will begin January 1, 2014. The Administrative Director will work with CFANS Human Resources to develop a position description. Salary and fringe will not exceed \$50,000.

10 – EFFECTIVE DATE, AMENDMENTS, AND TERMINATION

This agreement, including its Exhibits, shall be effective as of the date of last signature and continue in force until terminated or until the MAISRC ceases to exist (see Section 11).

This MOU will be reviewed and approved after four years. This MOU may also be reviewed following a written notice to the other signators within 90 days in advance of a proposed amendment. Amendments can be made at any time through mutual agreement of MAISRC Scientific Director, the Department Head of FWCB and the CFANS Dean.

In the event that either FWCB or CFANS ceases to exist or becomes a separate entity, the MAISRC administrative home will transfer to the Scientific Director's new home department or entity within the respective college.

11—CENTER EXISTENCE

The MAISRC will be deemed in existence if all the following conditions are met:

1. The MAISRC goals 'to develop solutions to Minnesota's AIS problems by developing an in-depth understanding of the ecology, biology, and biochemistry of key AIS and sharing this information with AIS managers for implementation. ...by developing scientific expertise in [a] variety of disciplines so that new solutions can be devised and extant ones improved while educating management agencies and the public" are being met, as determined by consensus of CAR (including the Scientific Director).

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2. An MOU exists between the MAISRC and MNDNR, including the existence of CAB.
3. A tenured University of Minnesota faculty member serves as the Scientific Director without a gap of more than one year.
4. Funds are available sufficient to support MAISRC Projects and Resources, primarily equipment, vehicles, facilities, and staff, including Scientific Director, Administrative Director, and technicians.
5. MAISRC Core Projects are underway.

We, the undersigned, agree to this memorandum of understanding.



Brian Buhr

Dean, College of Food, Agricultural and Natural Resource Sciences

December 2, 2013
Date



Susan Galatowitsch

Head, Department of Fisheries, Wildlife, and Conservation Biology

November 27, 2013
Date



Peter Sorensen

Scientific Director, Minnesota Aquatic Invasive Species Research Center

November 27 2013
Date

Date of next MOU review: January 2, 2018

Summary of LCCMR-MAISRC Reporting and Process

Reviewed and Accepted by LCCMR 12-02-13

ML 2013 Work Plan(s)

- Project periods:
 - Subprojects will have two phases, each following the proposal, peer review, and UMN approval process outlined in the MAISRC MOU prior to approval and start
 - Phases will be for roughly half of expected ENRTF 2013 funding time span
 - Exceptions to the above are made in the following circumstances:
 - For Subprojects having completed or in process of being peer reviewed as of 11/20/13. In these cases, the 1st phase of the Subproject will be for roughly two years; the 2nd phase will be for the remainder of the funding available to that Subproject (if any)
 - When a new Subproject is created to replace a Subproject that has been reduced in scope or eliminated according to the MAISRC MOU, the phase of the new Subproject will be for as close to three years as possible.
- Transition from Overall to Subproject work plans:
 - After initial approval of Overall work plan + project budget by Commission, an Overall work plan + project budget and ~9 Subproject work plans and project budgets will be generated for future updates and amendments accordingly:
 - Once the project gets rolling, each investigator will write a proposal for peer-review. Following the peer review and UMN approval process outlined in the MAISRC MOU, the investigator will write his/her own Subproject work plan and project budget for final approval by LCCMR.
 - After approval by LCCMR, the Subproject investigator will become a Co-PI of the main project and a project manager of the award in recognition that work, accounting, and reporting responsibilities are transferring to that investigator.
 - Once Subproject work plan and project budget has been approved by LCCMR and Co- PI status is attained, the sub-project funds would transfer to child accounts at the University. Funds associated with an approved phase of the Subproject would be available to spend. 2nd phase funds would appear in a reserve budget line pending progress, peer review, and further approvals by MAISRC, UMN, and LCCMR. LCCMR approval may also include providing an update to the full commission.

Comment [BN1]: This would result in approximately the following for [phase durations]:

- Subproject 1- 5 years [2/3] (no peer review)
- Subproject 2- 4 years [2/2]
- Subproject 3- 4 years [2/2]
- Subproject 4- 4.75 years* [2/2.75]
- Subproject 5- 5.5 years* [2/3.5]
- Subproject 6- 5 years -[2.5/2.5]
- Subproject 7- 5.5* [2/3.5]
- Subproject 8- 5.5 years [2.75/2.75]
- Subproject 9- CWF 3.5 years + ENRTF 2.5 years =6 years [3/3] but late, so [2.5/3]
- Subproject 10- 5.75 years (.75 time) [2/3.75] (no peer review)
- Subproject 11- 2 years*[2/0]

*= peer review already underway

- If the new Subproject has a significantly different summary and outcomes that those originally presented in the Overall work plan, the new summary and outcomes will replace the old, following approval by LCCMR.
- The Admin Subproject will not have its own Subproject work plan but will most likely have its own budget.

Timing:

- Work plan updates will be due every 6 months (standard)
- Amendments will generally be proposed as part of work plan updates
- Reporting dates for the Overall work plan will be staggered behind the reporting dates of the Subproject work plans unless an amendment is requested that transfers funds between Subprojects (see “content” section below).
- To ensure coordination among MAISRC researchers, Subproject work plans will all have the same reporting date

Content:

- Budget:
 - LCCMR needs MAISRC to follow the LCCMR format (draft attached) for both the Overall and Subproject budgets
 - The Overall work plan and project budget will only report on the general budget category totals of all Subprojects (the blue rows), rather than the line item details (white rows). It will also show reserve budget amounts for phase(s) of projects “pending progress and peer review.”
 - If the Subproject does not yet have an approved work plan and project budget, the Overall work plan project budget will show the budget on the reserve budget line.
 - The Admin Subproject (#1) and Educator Subproject (#10) will most likely have their own Subproject project budgets that include blue rows and white rows
 - The Subproject work plan project budget will include the line item details (white rows) in addition to the category totals (blue rows). It will also show reserve budget amounts for subsequent phases of projects with the description “pending progress and peer review.”
 - Overall work plan project budget will lack detailed description in the budget line item (i.e. within the first column). This detail would be added in the Subproject work plan project budgets.

- Amendments to move funds within a Subproject will be requested at the Subproject work plan + project budget level and subsequently reported on in the Overall work plan + project budget if the amendment included a shift between budget categories (blue rows).
 - Amendments to transfer funds between Subprojects (including Subproject #1 and Subproject #10) will be requested through the Overall work plan and project budget as well as through the affected Subproject work plans and project budgets. In this case, the Overall work plan would be submitted prior to Subproject work plans.
- Work plan:
 - LCCMR needs MAISRC to follow the LCCMR format (draft attached) for both the Overall and Subproject work plans
 - The Overall work plan will include Subproject summaries and outcomes for all ~11 Subprojects.
 - The Overall work plan will include status reports for Subprojects that do not have their own work plans yet and for Subproject #1 and Subproject #10. If the Subproject has its own work plan, the Overall work plan will include the summary update (section 3) from each Subproject work plan.
 - Subprojects could be broken down into activities at the discretion of the Co-PI
 - Amendments to change overall Subproject summary or outcomes will be requested through the Subproject work plan update and reported subsequently, after LCCMR approval, in the Overall work plan
 - Amendments to transfer funds between Subprojects would be requested through the Overall work plan update as well as through the affected Subproject work plan updates. In this case, the Overall work plan update would be submitted prior to the Subproject work plan updates.
 - When making an amendment request separate from an update, the only changes made within the work plan will be directly related to the amendment request.

Approvals

- LCCMR understands that projects may need to change direction, project budgets may need to change, and they are planning to be flexible with those changes.

- LCCMR needs MAISRC to follow the usual amendment request process for both the Overall and Subproject work plan and budget.
- MAISRC and UMN approvals per the MAISRC MOU are generally required prior to submission of an Overall or Subproject work plan update or amendment request that proposes to:
 - Change positions or priorities
 - E.g. an investigator or other significant position
 - E.g. a species of focus to one not listed in the ENRTF 2012 work plan approved by LCCMR 8/06/13 or the ENRTF 2013 work plan approved by LCCMR 6/25/13
 - Create a new phase of a Subproject
- Prior to submitting an amendment request for either the Overall or Subproject work plan and budget, LCCMR should be consulted to determine whether the change needs to be a formal amendment request or described as part of a project update report. Generally speaking, however, amendments are needed in the case of the above changes as well as:
 - If outcomes change, are added, or are deleted (though what an investigator might consider a change in outcome, LCCMR may not consider a change in outcome, so call them first to consult)
 - If budget details (white rows) in subprojects or budget category amounts (blue rows) in subprojects or overall projects need to change at all (i.e. there is 0% allowance on changes without amendments).
- We may request a retroactive approval, however if the approval is not awarded, the burden is on the PI or Co-PI to pay the costs through non-ENRTF funds.

General guidelines:

- The Overall work plan project budget summary (Section VI) does not need to be broken down by activity/sub-project. Just state Overall project FTE = 8, for example.
- LCCMR is ok with paying for maintenance and repair, just budget it.

Responsibilities & Communications:

- Each Co-PI will be responsible for ensuring updates to Subproject work plans and project budgets are submitted prior to LCCMR deadlines
- The Administrative Director is responsible for submitting updates to Overall work plan and project budgets and for ensuring submission in a timely manner, provided

Subproject work plan updates have been submitted and approved in a timely fashion.

- Each Co-PI will be responsible for work, accounting, and reporting. MAISRC awards will not be used for any cost-overruns by any individual Co-PI.
- To ensure coordination and consistency, the MAISRC Administrative Director should be cc'd on all submissions and communications on Subprojects between the Co-PI and LCCMR.

ML 2012 work plan

- We will sit down with 2012 after 2013 is put in order to see if it can be similar, but maybe not the same, as 2013

*This document supersedes the process described in July 12, 2013 memo to LCCMR from Peter Sorensen

*This document supersedes the agreements captured in the MAISRC- UMN meeting notes dated 6/21/13

Environment and Natural Resources Trust Fund
M.L. 2013 Project Budget - Overall Budget of Aquatic Invasive Species Research Center

Project Title: Aquatic Invasive Species Research Center
Legal Citation: M.L. 2013, Chp. 52, Sec. 2, Subd. 06a
Project Manager: Fill in Sub-Project Manager name.
Organization: University of Minnesota
M.L. 2014 ENRTF Appropriation: \$ Fill in Sub-Project \$ Amount
Project Length and Completion Date: 6 Years, June 30, 2019

Date of Report: Fill in the date of report submission

ENVIRONMENT AND NATURAL RESOURCES TRUST FUND BUDGET	SUB-PROJECT 1 - Coordinating, synergizing and promoting expertise: Establishing an administrative structure				SUB-PROJECT 2 - Delaying the spread of AIS: Monitoring the abundance and distribution of AIS using new molecular tools so techniques to delay their spread can be implemented				SUB-PROJECT 3 - Reducing and controlling AIS: Developing effective tools to attract and locate aggregations of invasive carp		
BUDGET ITEM	Sub-Project 1 Budget	Revised Sub-Project 1 Budget	Amount Spent	Sub-Project 1 Balance	Sub-Project 2 Budget	Revised Sub-Project 2 Budget	Amount Spent	Sub-Project 2 Balance	Sub-Project 3 Budget	Amount Spent	Sub-Project 3 Balance
Personnel (Wages and Benefits) - Overall Total											
Professional/Technical/Services and Contracts - Overall Total											
Equipment/Tools/Supplies - Total											
Capital Expenditures Over \$5,000 - Overall Total											
Travel - Overall Total											
Other - Overall Total											
Budget Reserve Pending Progress and Peer Review - Overall Total											
COLUMN TOTAL											

Environment and Natural Resources Trust Fund
M.L. 2013 Project Budget - Overall Budget of Aquatic Invasive Species Research Center

Project Title: Aquatic Invasive Species Research Center
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Project Manager: Fill in Sub-Project Manager name.
Organization: University of Minnesota
M.L. 2014 ENRTF Appropriation: \$ Fill in Sub-Project \$ Amount
Project Length and Completion Date: 6 Years, June 30, 2019

Date of Report: Fill in the date of report submission

ENVIRONMENT AND NATURAL RESOURCES TRUST FUND BUDGET			SUB-PROJECT 4 - Reducing and controlling AIS: Developing effective bio-control techniques to control common and/or Asian carp			SUB-PROJECT 5 - Reducing and controlling AIS: Developing and evaluating new techniques to selectively control invasive plants			SUB-PROJECT 6 - educing and controlling AIS: Simulation modeling to identify and evaluate AIS control methods			SUB-PROJECT 7 - Developing eradication tools: Exploring whether native pathogens can be used to control AIS		
BUDGET ITEM			Sub-Project 4 Budget	Amount Spent	Sub-Project 4 Balance	Sub-Project 5 Budget	Amount Spent	Sub-Project 5 Balance	Sub-Project 6 Budget	Amount Spent	Sub-Project 6 Balance	Sub-Project 7 Budget	Amount Spent	Sub-Project 7 Balance
Personnel (Wages and Benefits) - Overall Total														
Professional/Technical/Services and Contracts - Overall Total														
Equipment/Tools/Supplies - Total														
Capital Expenditures Over \$5,000 - Overall Total														
Travel - Overall Total														
Other - Overall Total														
Budget Reserve Pending Progress and Peer Review - Overall Total														
COLUMN TOTAL														

Environment and Natural Resources Trust Fund
M.L. 2013 Project Budget - Overall Budget of Aquatic Invasive Species Research Center

Project Title: Aquatic Invasive Species Research Center

Legal Citation: M.L. 2013, Chp. 52, Sec. 2, Subd. 06a

Project Manager: Fill in Sub-Project Manager name.

Organization: University of Minnesota

M.L. 2014 ENRTF Appropriation: \$ Fill in Sub-Project \$ Amount

Project Length and Completion Date: 6 Years, June 30, 2019

Date of Report: Fill in the date of report submission

ENVIRONMENT AND NATURAL RESOURCES TRUST FUND BUDGET	SUB-PROJECT 8 - Implementing findings: An applied ecologist - extension specialist position and program			SUB-PROJECT 9 - Implementing Findings: Applying new methods to control zebra mussels			SUB-PROJECT 10 - Implementing Findings: An educator position		
BUDGET ITEM	Sub-Project 8 Budget	Amount Spent	Sub-Project 8 Balance	Sub-Project 9 Budget	Amount Spent	Sub-Project 9 Balance	Sub-Project 10 Budget	Amount Spent	Sub-Project 10 Balance
Personnel (Wages and Benefits) - Overall Total									
Professional/Technical/Services and Contracts - Overall Total									
Equipment/Tools/Supplies - Total									
Capital Expenditures Over \$5,000 - Overall Total									
Travel - Overall Total									
Other - Overall Total									
Budget Reserve Pending Progress and Peer Review - Overall Total									
COLUMN TOTAL									

Environment and Natural Resources Trust Fund
M.L. 2013 Project Budget - Overall Budget of Aquatic Invasive Species Research Center



Project Title: Aquatic Invasive Species Research Center
Legal Citation: M.L. 2013, Chp. 52, Sec. 2, Subd. 06a
Project Manager: *Fill in Sub-Project Manager name.*
Organization: University of Minnesota
M.L. 2014 ENRTF Appropriation: \$ *Fill in Sub-Project \$ Amount*
Project Length and Completion Date: 6 Years, June 30, 2019

Date of Report: *Fill in the date of report submission*

ENVIRONMENT AND NATURAL RESOURCES TRUST FUND BUDGET	SUB-PROJECT 11 - Reducing and controlling AIS: Risk analysis to identify AIS control priorities and methods			TOTAL BUDGET	REVISED TOTAL BUDGET	TOTAL SPENT	TOTAL BALANCE
BUDGET ITEM	Sub-Project 11 Budget	Amount Spent	Sub-Project 11 Balance				
Personnel (Wages and Benefits) - Overall Total							
Professional/Technical/Services and Contracts - Overall Total							
Equipment/Tools/Supplies - Total							
Capital Expenditures Over \$5,000 - Overall Total							
Travel - Overall Total							
Other - Overall Total							
Budget Reserve Pending Progress and Peer Review - Overall Total							
COLUMN TOTAL							

Environment and Natural Resources Trust Fund															
M.L. 2013 Project Budget - Sub-Project Budget of M.L. 2013-06a: Aquatic Invasive Species Research Center															
Project Title: Aquatic Invasive Species Research Center Sub-Project [#]: [Sub-Project Title]															
Legal Citation: M.L. 2013, Chp. 52, Sec. 2, Subd. 06a															
Project Manager: Fill in Sub-Project Manager name.															
Organization: University of Minnesota															
M.L. 2013 ENRTF Appropriation: \$ Fill in Sub-Project \$ Amount															
Project Length and Completion Date: 6 Years, June 30, 2019															
Date of Report: Fill in the date of report submission															
ENVIRONMENT AND NATURAL RESOURCES TRUST FUND BUDGET				Activity 1: Fill in your activity title here.			Activity 2: Fill in your activity title here.			Activity 3: Fill in your activity title here.					
BUDGET ITEM				Activity 1 Budget	Amount Spent	Activity 1 Balance	Activity 2 Budget	Amount Spent	Activity 2 Balance	Activity 3 Budget	Amount Spent	Activity 3 Balance	TOTAL BUDGET	TOTAL SPENT	TOTAL BALANCE
Personnel (Wages and Benefits) - Total															
(List who is getting paid to do what and what is the % of full-time employment for each position. List out by position or position type—one row per position/position type. For each, provide details in this column on the inputs: i.e., % dollars toward salary, % dollars toward benefits, time period for position/position type, number of people in the position/position type, and estimated allocation toward the position/position type. Add rows as needed. The Personnel budget is intended to be tracked at an overall level with initial estimates of allocations for each position/position type listed in the details of this column. See the "Example Project Budget" document for guidance on what is meant by this.)															
Name- Professor: \$Salary (%Salary, 19.83% benefits, %FTE															
Name- Research Assistant Professor: \$Salary; (66.4% salary, 33.6% benefits), X% FTE															
Name- Post Doctoral Fellow: \$Salary; (X% salary, 20.75% benefits) 0.5 FTE															
Name- Graduate Student: \$Salary; (37% tuition, 54% salary, 9% benefits) 0.5 FTE															
Name- Undergraduate Student: \$Salary; (93% salary, 7% benefits) XX% FTE															
Name- Title (Civil Service): \$Salary; (X% salary, 36.8% benefits) XX% FTE															
Professional/Technical/Services and Contracts - Total															
(List out proposed services and contracts. Be clear about whom the contract is to be made with and what services will be provided. If a specific contractor is not yet determined, specify the type of contractor sought and indicate that a competitive process will be used. List out by contract types/categories—one row per type/category. Add rows as needed)															
Services- office & gen oper. (PLEASE LIST DETAILS SUCH AS: printing/duplication, etc.)															
Services- lab & medical (PLEASE LIST DETAILS SUCH AS: (data storage, sequencing, biochemistry, microscopy, etc.)															



[illegible]