REQUEST FOR PROPOSAL #26-02

Assessment Methodology of Post-Relocation Dispersal of Mussels in a Natural River Setting after Construction Projects

POSTED DATE: 4/1/2026
CLOSE DATE: 4/30/2026 at 11:59 p.m. CST

Submit Proposals to: ICTProjectManagement@illinois.edu

PROJECT INFORMATION

Funds:	$1,000,000 total (includes a required 25% cost share of $250,000 from proposing agency)
Estimated Contract Term:	48 months
Projected Start Date:	8/16/2026

BACKGROUND

Mussel relocation is a standard mitigation strategy to protect mussel populations from construction-related harm. However, current monitoring of these efforts in large river systems suggests that this strategy may be inadequate. Despite the common assumption that mussels are sedentary, data from the I-74 Mississippi River Bridge project revealed a near-total loss of relocated individuals: Only 1% remained at the relocation site after one year, and less than 0.2% were present after eight years.

Malacologists currently lack data on where relocated mussels go and what biological and environmental drivers are behind their dispersal. Resource agencies, including the Iowa and Illinois Departments of Natural Resources, the U.S. Fish and Wildlife Service, and state departments of transportation, require a better understanding of mussels post-relocation movement patterns to (i) determine the reasons relocated mussels abandon designated sites

and movement patterns within or nearby construction projects, and (ii) establish baseline behavior by comparing relocated cohorts against non-relocated resident control groups.

Research is needed to directly inform future mitigation strategies for DOT projects. By identifying where and why mussels move, agencies can improve site selection and consultation practices and processes, increase the efficacy of mussel relocation efforts, reduce harm to state and federally protected species, and ensure that conservation funds are spent on effective mitigation rather than ineffective relocations.

OBJECTIVE

The goal of this study is to develop a novel approach to evaluate post-relocation mussel dispersal that can substantially improve the Illinois Department of Transportation's understanding of post-relocation mussel behavior and develop strategies for avoidance, minimization and mitigation. The objective is to determine the most effective technology and methods to monitor daily and seasonal mussel movement and to collect essential information about mussel survival, movement timing, displacement patterns, and influencing environmental conditions. The research outcome shall support the ability to determine the percentage of mussels that remain in the relocation area, remain within construction limits, relocate elsewhere over time, the triggers for movement or mortality (e.g., storm or flooding events), the direction and distance of movement, how seasonality affects dispersal, and methods to control and mitigate the relocation consequences.

RESEARCH TASKS AND REQUIRED DELIVERABLES

Task 1 — Literature Review (Phase I): Conduct an extensive review of national and international literature related to mussel tracking technologies, mussel movement ecology, relocation efficacy studies, previous relocation monitoring studies, and relevant applicable methods and equipment.

Task 2 — Technology Assessment (Phase I): Evaluate feasible technologies for monitoring daily/hourly mussel movements, including and not limited to, acoustic, radio, and/or other viable detection technologies. For each potential technology, the study team shall summarize the following:

- Key specifications and infrastructure requirements.
- Predicted costs to implement studies at varying spatial and temporal scales.
- Environmental, biological and technological factors limiting applicability (e.g., depth, interference, battery life, organism behavior).
- Supporting documentation for each technology's performance for aquatic organism movement monitoring.
- Potential behavioral, physiological or survival impacts to tagged mussels.
- Identify companies that provide equipment and technical support.
- A recommended study framework for testing the accuracy and validity of the top technology, including tag-attachment methods designed to minimize adverse effects.

Task 3 — Development of Pilot Study Design (End of Phase I): Develop a pilot study design identifying the most feasible technology and methods for field deployment in Phase II. This design should address market and logistical considerations, tagging methods, expected data collection procedures, and an implementation schedule.

Task 4 — Field Testing and Data Collection (Phase II): Implement the selected technology and tagging method in a large Illinois river. Mussels will be tagged and tracked, with data collected to relate mussel movement and technology performance to:

- Flow rate
- Substrate type
- Acoustic interference
- River depth
- Tag-receiver orientation and spacing
- Mussel size
- Mussel behavior
- Time and seasonality

Comparison groups of un-relocated mussels should be included where feasible.

Task 5 — Data Analysis (Phase II): Analyze the relationships between movement patterns and environmental variables, survival rates, dispersal distances, timing of movement, and overall performance of the selected technology. The outcome shall be the impact level of each variable, and the interaction between them, on the movement pattern and method to control those variables.

Task 6 — Final Report (Phase II): Prepare a final report detailing Phase I and Phase II results, feasibility assessments, recommended technology approaches, and guidance for future IDOT mussel relocation projects.

INSTRUCTIONS FOR SUBMITTING A PROPOSAL

The proposal shall be prepared in accordance with the guidelines presented in Appendix A.

By submitting a proposal, potential principal investigators are acknowledging they have read and understand the IDOT/ICT PI responsibilities and Guidebook and terms and requirements under the current IDOT/ICT Intergovernmental Agreement (IGA).

Technical questions regarding the research project or RFP procedures should be submitted to the ICT Project Management team via email at ICTProjectManagement@illinois.edu within 14 days of the posting date. Technical questions and answers will be posted on ICT's website as they are received.

SPECIAL CONDITIONS FOR REVIEWING PROPOSALS AND AWARDING ICT FUNDS

Please note that the following conditions will be applied when reviewing all received proposals and in awarding ICT funds:

1) Preference will be given to Illinois universities (both public and private) when multiple proposals from this solicitation are reviewed and have identical scores.

2) The award of this project is contingent upon the availability of funds at the time of award.

APPENDIX A:
Guidelines for Preparing Proposals for the Illinois Center for Transportation

Please use the following format when submitting Illinois Center for Transportation proposals for consideration. Proposals should be a maximum of 15 pages (excluding the cover page, itemized budget, budget justification and optional appendices) with a minimum 11pt font, standard margins and in an Adobe PDF format.

1. Cover Page

Please include the following information on the proposal cover page:

- RFP Number (e.g., RFP #26-02)
- Proposal title
- Proposed Principal Investigator (and co-investigator, if any), along with associated organizations and email addresses.

2. Research Plan

Clearly and concisely address the proposed approach for solving the issue described in the problem statement. The research plan should be subdivided into the following sections:

(a) Introduction, Including Research Objective

Introduce the proposal and provide a concise overview of the research approach. Outline the objectives of the research project and explain the questions that will be answered by the research.

(b) Research Approach/Work Plan

Include details of the research project and strategies to accomplish the project objectives. Itemize the tasks and provide a clear explanation of the research approach, deliverables and identify the research team lead for each task.

(c) Anticipated Research Results

State the anticipated research results and deliverables.

(d) Expected Implementable Outcome(s)

All IDOT-ICT research is expected to be implementable. Describe what implementable outcomes (e.g., specification, test, recommendations, etc.) are anticipated that will facilitate implementation of the research results.

3. Qualifications and Accomplishments of the Research Team

Identify who will perform the research and provide a brief explanation of each researcher's qualifications and related research efforts.

4. Other Commitments of the Research Team

Outline the other commitments of the research team to demonstrate the ability to fulfill the commitments of the proposal.

5. Facilities and Equipment

Describe the facilities and equipment available to conduct the research.

6. Timeline Requirements

Include a timeline of the research project's tasks in this section. Describe the required time to complete the research, including final report preparation, ICT's editing process, review of the report by the Technical Review Panel and publication of the report. Please note the final report must be submitted in Section 508 compliant format at least three months before the project's end date. Below is an example of a project timeline.

	Project Milestones (Assuming an August 16 Start Date, and a 24-month project)	2026					2027											2028							
		8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8
1	**Kickoff Meeting**																									
2	**PI conducts Project Task X**																									
3	**PI conducts Project Task XX**																									
4	**PI conducts Project Task XXX**																									
5	**PI conducts Project Task XXXX**																									
6	**PI conducts Project Task XXXXX**																									
7	**PI writes DRAFT report**																									
8	**PI Submits Final DRAFT report to ICT for editing**																									
9	**ICT Preliminary editing phase**																									
10	**PI/TRP editing phase**																									
11	**Final editing phase**																									
12	**Report published**																									
	(Quarterly Progress Reports Due)																									
	(TRP Meetings)																									

7. Itemized Budget

Provide an itemized project budget including the cost of personnel, consultants, subcontracts, equipment, materials, travel, indirect costs and cost share.

A minimum of 25% of the total project budget must be cost share from the proposing agency. Under the IGA effective July 1, 2024, the indirect cost rate used for institutions with a federally negotiated F&A rate cannot exceed 42.97% of the modified total direct costs. If the proposing agency does not have a federally negotiated rate, a 10% de minimis rate must be used.

Subaward costs from outside the proposing agency cannot exceed 50% of the total project budget without prior approval.

A part of the cost share requirement may be fulfilled using unrecovered indirect costs. Any proposal submitted by an agency outside the University of Illinois system that plans to use unrecovered indirect costs as cost share must submit a request for approval to

IDOT/Federal Highway Administration. More information on this letter will be provided if a proposal is selected for funding.

Please refer to ICT's budget templates when submitting a proposal:

- UIUC Budget Template – UIUC institutional budget template without subawards.
- Subawardee Budget Template – Each subawardee institution shall complete this budget form or may submit a budget using its institutional template, as long as it complies with the guidelines outlined in this RFP.
- UIUC Budget Template with Subawardee – UIUC institutional budget template that includes a subaward in the project.

8. Budget Justification

Include a budget justification that explains the itemized budget in narrative form. The budget justification shall provide sufficient detail so there is a clear understanding of how the project costs were calculated and why they are necessary. The narrative discussion of the project cost categories and related line items should be presented in the same order as they appear in the itemized budget. If the project requires the purchase of equipment, out-of-state travel, or out-of- or in-state conference registration/attendance expenses, please list and explain here.

*Under the terms of our IGA, equipment is defined as any tangible or intangible product, having a useful life of **two years or more**, an acquisition cost of at least **$500**, and solely purchased for use in the IDOT-ICT project. Equipment purchased on IDOT-ICT projects is to be returned to IDOT at the conclusion of the project, unless otherwise agreed upon. Equipment purchases on IDOT-ICT projects must have a **signed** pre-approval.*

*Travel expenses should include, but are not limited to, travel to TRP meetings, travel for testing / sampling, etc. Any out-of-state travel expenses and **any** conference expenses charged to the project must have a **signed** pre-approval.*

Inclusion of equipment and travel expenses in the project budget and workplan does not meet the requirement for pre-approval. Signed, pre-approval request forms must be submitted prior to purchase of any equipment or travel meeting the above criteria to be considered allowable expenses on the project. Expenses not meeting this requirement may not be reimbursed.

9. Cooperative Features (if appropriate)

If assistance or cooperation is required from other agencies, public or private, to complete this proposed research, describe the plans for securing this assistance.

10. Appendices (if appropriate)

References or any additional materials deemed necessary may be provided here.