Wisconsin Department of Transportation

Wisconsin Highway Research Program

Request for Proposals
FFY 2027

Monitoring Long-Term Changes in MSE Walls

	Request for Proposals Timeline and Information
November 28, 2025	Issue Date of this Request for Proposal (RFP). This RFP has been posted at: http://wisdotresearch.wi.gov/rfps-and-proposals.
	Please read the WHRP Proposal Preparation Instructions as this document has been updated recently and contains important information, including tables and templates, necessary for writing a proposal for submission.
January 5, 2026 12:00 PM (CST)	Questions regarding this RFP are due by this date and time. Questions need to be submitted with the project name to research@dot.wi.gov. Questions submitted after this date and time will not be considered.
January 13, 2026 4:30 PM (CST)	Responses to Questions will be posted on the WisDOT Research and Library website at: http://wisdotresearch.wi.gov/rfps-and-proposals
February 3, 2026 4:30 PM (CST)	**Proposals are due by this date and time.** Proposals must be submitted in a PDF version to: research@dot.wi.gov. Proposals submitted after this date and time will not be considered.
April 30, 2026	Award and Deny letters will be sent by email to all proposal submitters (only lead investigator will be notified)
	Project Budget and Schedule
$300,000.	**Project Budget shall not exceed this amount.** Matching funds will not be considered in the proposal evaluation process. Proposals which exceed this amount will be disqualified.
30 Months	Period of Performance / Duration of Project
October 1, 2026	**Anticipated Start Date of Project**
January 2, 2029	Researcher's Final Report due
April 1, 2029	**Anticipated End Date of Project**
Geotechnics	WHRP Technical Oversight Committee
	For more information regarding this RFP contact the WisDOT Research Program at: research@dot.wi.gov.

NOTICE: Submission of a proposal does not guarantee an award. The Wisconsin Department of Transportation (WisDOT) reserves the right to reject any and all proposals received; however, in the event WisDOT does award a project, such award will be based on uniform evaluation criteria.

Wisconsin Highway Research Program
Geotechnics Technical Oversight Committee
Request for Proposal

Monitoring Long-Term Changes in MSE Walls

Acronyms and Definitions
COP – Close-Out Presentation
DMP – Data Management Plan
DOC – Degree of Compaction
ERI – Electrical Resistivity Imaging
FHWA – Federal Highway Administration
HMM – Highway Maintenance Manual
KDOT – Kansas Department of Transportation
MSE – Mechanically Stabilized Earth
PI – Principal Investigator, lead researcher
POC – Project Oversight Committee comprised of subject matter experts who are the main point of contact with the PI
QPL – Qualified Products List
PPE – Personal Protective Equipment
RFP – Request for Proposal
R&L – WisDOT Research and Library Unit providing administrative support
SPV – Special Provision
TOC – Technical Oversight Committee develop projects and provide leadership
UWTS – University of Wisconsin Technical Support
WHRP – Wisconsin Highway Research Program
WisDOT – Wisconsin Department of Transportation

1 Background and Problem Statement

Mechanically stabilized earth (MSE) walls are retaining walls that consist of backfill materials reinforced with metallic or geosynthetic reinforcements, along with facing elements connected to the reinforcement elements. MSE walls are used by WisDOT due to advantages compared to other retaining wall systems. The reinforcement elements play a key role in the performance and stability of MSE walls as these elements provide internal friction and tension to prevent internal/external wall movements and failures.

The deterioration of metallic reinforcements through corrosion can lead to a reduction in their thickness compromising the integrity of these reinforcement elements. The diminished strength in reinforcement units detrimentally affects wall performance both in the short and long terms, depending on the corrosion rates. In extreme cases, excessive corrosion can even result in complete MSE wall failures. Therefore, it is important that MSE wall backfill materials do not create corrosive environments for metallic reinforcements compromising the overall MSE wall structure.

There are several parameters that affect the corrosion potential of soils, including permeability, degree of saturation, electrical resistivity, presence of soluble salts (sulfates, chlorides, etc.), pH, and organic materials. WisDOT defines limits for these electrochemical parameters in the following Special Provisions (SPVs) for MSE Walls (https://wisconsindot.gov/Pages/doing-bus/eng-consultants/cnslt-rsrces/strct/special-provisions.aspx):

SPV.0165 – Temporary Wall Wire Faced Mechanically Stabilized Earth
SPV.0165 – Wall Concrete Panel Mechanically Stabilized Earth
SPV.0165 – Wall Modular Block Mechanically Stabilized Earth
SPV.0165 – Wall Wire Faced Mechanically Stabilized Earth

In Wisconsin, the corrosion risk is increased due to the use of de-icing salts and chemicals that may infiltrate MSE wall backfill materials and change the corrosion potential of such materials. The field investigations conducted as part of the recently completed WHRP project titled “Investigation of MSE Wall Corrosion in Wisconsin” (WHRP 0092-24-02 – Mousavi et al. 2025) revealed that moisture and salt intrusion through pavement cracks and joints likely altered the backfill electrochemical properties over time, creating a highly corrosive environment. Therefore, there is a need to monitor the long-term changes in the corrosion potential of MSE wall backfill materials.

Based on the literature, even though no direct link has been established between the aforementioned parameters affecting soil corrosivity, there is a consensus that electrical resistivity is a good indicator for assessing the corrosion potential of soils. The general trend is that soils showing low resistivity values are prone to hosting more corrosive environment than those having high resistivity values. AASHTO T 288, ASTM G187, and ASTM G57 describe three test methods used for the laboratory characterization of soil corrosivity (ASTM G57 also describes a field test method). One of the challenges with these standards is that laboratory test methods are prone to not representing the actual field conditions due to the nature of controlled environment in the laboratory and limited sample size. In addition, AASHTO T 288 and ASTM G187 cannot be used to test samples containing gravel-sized particles (such particles should be removed from test samples), which is another limitation of these test methods.

In 2016, the Kansas Department of Transportation (KDOT) investigated the use of in-situ electrical resistivity imaging (ERI) technique to characterize bulk electrical resistivity and corrosion potential of several in-place MSE wall backfill materials for construction quality assurance (Tucker-Kulesza et al. 2016). The ERI technique is considered non-destructive testing and provides a two-dimensional (2-D) electrical resistivity distribution of backfill materials, so it is considered a more representative assessment of the in -situ conditions than standard laboratory testing on smaller samples. Following the study in 2016, KDOT conducted two more studies on the use of ERI in 2021

and 2025 (Parsons et al. 2021, Kulesza et al. 2025 – See also Supporting Documents under Task 1). All these studies indicated that this technique could be used for long-term monitoring of MSE walls.

This proposed topic ("Monitoring Long-Term Changes in MSE Walls") follows on findings from the recently completed WHRP project titled "Investigation of MSE Wall Corrosion in Wisconsin" (WHRP 0092-24-02 – Mousavi et al. 2025), with the goal to explore the possibility of using ERI for evaluating temporal changes in MSE wall backfill materials in Wisconsin. This research project would evaluate if ERI would be an implementable technique in Wisconsin as a long-term monitoring tool to check for changes in bulk resistivity of backfill materials over time (due to several reasons including brine seepage into the retained soil mass). This project would entail collecting backfill material samples from various sources and running laboratory tests to characterize the index properties, electrochemical properties, and other soil properties that could affect the electrochemical responses of the collected samples and backfill environments (e.g., hydraulic conductivity and water retention curves). This project also requires testing large-scale experimental backfill structures to better understand the factors affecting ERI measurements.

The main goals of this project are the following:

- Provide recommendations on the appropriate test methods (laboratory and field) and implementation plans for long-term monitoring along with monitoring timeline for in-time detection of possible corrosive environments that can degrade metallic reinforcements;
- Develop a cost-benefit analysis regarding long-term MSE wall monitoring; and
- Recommend adjustments to currently used SPVs for designing/constructing MSE walls.

A robust long-term monitoring plan for MSE walls will help WisDOT use its resources and staff more effectively and efficiently, which will eventually help the department reduce costs, while monitoring the long-term health of critical infrastructure. The desired outcome will help WisDOT provide safer transportation systems to the traveling public.

2 Research Objectives

The project objectives include:

2.1 Establish quantitative relationships between soil index and electrochemical properties of collected samples.

2.2 Develop correlations between backfill characteristics and ERI measurements to assess electrochemical responses in environments susceptible to corrosion of MSE wall reinforcement.

2.3 Provide recommendations for laboratory and field testing methods aimed at long-term monitoring of corrosion potential within MSE wall backfill materials.

2.4 Develop implementation strategies for sustained corrosion monitoring programs to identify and track potentially problematic or corrosion-prone areas and walls.

2.5 Conduct a cost–benefit analysis to evaluate the feasibility and economic implications of long-term MSE wall monitoring practices.

2.6 Review existing standard practice values used in the design and construction of MSE walls and propose modifications as needed based on research findings.

3 Research Approach - Scope of Work/Work Plan/ Experimental Design

3.1 Task 1: Literature Review

The research team will conduct a comprehensive literature review on MSE walls, focusing on the materials and reinforcement elements used by transportation departments and ministries operating in

climatic conditions comparable to those in Wisconsin. Particular attention will be given to the use and performance of corrosion-susceptible reinforcement elements and the effects of corrosion on MSE wall stability and service life.

The review will include a detailed evaluation of corrosion mechanisms, impacts of winter maintenance practices (e.g., de-icing agents), and evidence from laboratory and field studies related to corrosion potential measurements of backfill materials.

Emphasis will be placed on electrical resistivity testing, both in the laboratory and in the field, as well as on long-term monitoring techniques used to quantify corrosion rates in metallic reinforcements. The research team will document and compare the laboratory and field testing procedures employed by various transportation agencies to monitor long-term changes in backfill corrosion potential and reinforcement degradation. Additionally, the review will assess how other agencies and ministries incorporate corrosion considerations into their MSE wall design methodologies and maintenance practices.

As part of this effort, the research team will survey Wisconsin's county highway departments to identify the types of de-icing agents used during winter maintenance operations, including distinctions between corrosion-inhibited and non-inhibited chemical compounds. The team will also review the WHRP report titled "Evaluating the Impact of Anti-Icing Solutions on Concrete Durability" (WHRP 0092-21-03 – Xiao et al. 2023), to integrate relevant findings into the study.

The synthesized findings from this task will inform the development of the project work plan and will serve as a foundation for recommending potential revisions to WisDOT design standards and specifications, as well as for refining testing and long-term monitoring methods for MSE wall performance and corrosion control.

The literature review results will be documented and presented to the Project Oversight Committee (POC) in an interim report.

Supporting Documents:

- Breckwoldt, C., Parsons, R., and Han, J. (2019). "Investigation of Variations in Corrosion Potential in Mechanically Stabilized Earth Backfill Due to Migration of Fines." (No. K-TRAN: KU-18-5R). Kansas Department of Transportation. URL: https://rosap.ntl.bts.gov/view/dot/42004
- Kulezsa, S., Parsons, R., Liu, H., and Han, J. (2025). "Long-Term Corrosion Monitoring in Mechanically Stabilized Earth (MSE) Walls." (No. K-TRAN: KSU/KU-21-3). Kansas Department of Transportation. URL: https://rosap.ntl.bts.gov/view/dot/86791
- Mousavi, M., Vytiniotis, A., Marr, W. A., and DiMaggio, J. (2025). "Investigation of MSE Wall Corrosion in Wisconsin." (No. WHRP 0092-24-02). Wisconsin Department of Transportation. URL: https://wisconsindot.gov/documents2/research/0092-24-02-final-report.pdf
- Parsons, R., Han, J., and Kulesza, S. (2021). "Measuring Corrosion Conditions in Mechanically Stabilized Earth Walls." (No. K-TRAN: KSU-19-5). Kansas Department of Transportation. URL: https://rosap.ntl.bts.gov/view/dot/60227
- Tucker-Kulesza, S., Snapp, M., and Koehn, W. (2016). "Electrical Resistivity Measurement of Mechanically Stabilized Earth Wall Backfill." (No. K-TRAN: KSU-15-6). Kansas Department of Transportation. URL: https://rosap.ntl.bts.gov/view/dot/30912
- Xiao, D. X., Owusu-Ababio, S., Kevern, J. T., Wang, H., and Shi, X. (2023). "Evaluating the Impact of Anti-Icing Solutions on Concrete Durability." (No. WHRP 0092-21-03).

Wisconsin Department of Transportation. URL: https://wisconsindot.gov/documents2/research/R21-03-Final-Report.pdf

3.2 Task 2: Material Sampling and Laboratory Testing

The research team will develop a material sampling and laboratory testing plan to characterize the physical properties (particle size distribution, Atterberg limits, classification, specific gravity, Proctor compaction, and moisture content) and hydraulic conductivity and water retention characteristics of the MSE wall backfill materials used in Wisconsin. The backfill materials listed below will be included in laboratory testing. For each material, Proctor compaction, hydraulic conductivity, and water retention characteristics will be determined for two different gradations (coarse and fine) conforming to the SPVs listed previously.

- Natural sand
- Mixture of sand with gravel, crushed gravel, or crushed stone
- Gravel, crushed gravel, or crushed stone

The testing plan will also include characterizing the electrochemical properties of the materials. These properties include the organic content, pH, resistivity, and soluble salt (chloride and sulfate) contents of the materials, as shown in the SPVs previously listed.

The WisDOT Highway Maintenance Manual (HMM) 06-20-05 states that sodium chloride, magnesium chloride, and calcium chloride are the de-icing agents used in winter maintenance efforts. In practice, magnesium chloride and calcium chloride are considered additives. If pavement temperature is equal to or greater than 15°F, sodium chloride is considered to be the most effective de-icing agent. However, for pavement temperatures less than 15°F, magnesium chloride or calcium chloride is added to sodium chloride. Therefore, pH, resistivity, and chloride and sulfate contents of the backfill materials will also be characterized with de-icing agents that contain the following compounds:

- Sodium chloride only
- Magnesium chloride only
- Calcium chloride only
- Mixture of sodium chloride and magnesium chloride
- Mixture of sodium chloride and calcium chloride

WisDOT will provide information on source locations for backfill materials that will be tested to support the development of the research team's material sampling and laboratory testing plan. The research team will collect enough backfill materials to perform the laboratory tests as well as Task 3.

The research team will also need to purchase de-icing agents (in liquid or solid form) consisting of the compounds listed above. A current list of available agents [i.e., Qualified Products List (QPL)] can be found on the Pacific Northwest Snowfighter's Group website (https://pnsassociation.org/). WisDOT does not mandate the types of de-icing agents that are to be used for winter maintenance on the state trunk highway system. Therefore, the research team will identify and propose the appropriate de-icing agents from the aforementioned website to be used in this task. The research team will also identify and propose de-icing agent concentrations and application rates/frequencies that align with the winter maintenance efforts in Wisconsin. The proposed de-icing agents along with their concentrations and application rates will be presented to the POC for final approval.

In addition to material sampling and laboratory testing, this task will also involve establishing correlations between the laboratory test results.

The results of this task will be documented and presented to the POC in an interim report and in an informal presentation during an online meeting.

3.3 **Task 3**: **Building and Testing Large-Scale Experimental Backfill Structures**

The research team will develop a plan to build and test large-scale experimental backfill structures for each backfill material listed above. For each material, there will be two structures: one for coarse gradation and one for fine gradation (both gradations must conform to the SPVs listed previously). There will be six (6) structures in total.

The backfill structures will be in separate partially confined spaces with accessible top to take ERI measurements from the top. Also, to simulate obtaining ERI data from walls with no access from the top due to pavement, etc., at least one side of the wall should be accessible to take ERI measurements (see Parsons et al. 2021 in Supporting Documents under Task 1) (ERI measurements taken from the top and the side will be compared). The dimensions of the structures must be large enough to minimize the effects of the surrounding environment and boundary conditions on the ERI profiles. Also, the structures must be built in a way not to introduce any liquid other than the liquids planned to be applied in this task. Each structure must have a drainage system to drain out any excessive liquid. In addition, it will be important to build the structures in a way that there will be minimum evaporation.

Each structure will be instrumented with sensors embedded at different depths. The sensors must be capable of measuring soil temperature, moisture, and electrical conductivity (an indicator of salinity) to investigate the effects of these parameters on ERI profiles. It will be preferable to use a type of sensor that can measure all these parameters at once instead of installing multiple sensors for different purposes to minimize the effects of the presence of sensors on ERI profiles. Moisture and salinity will be changed by applying the de-icing agent to the structures and simulating precipitation events. The research team will need to develop a method to change the internal temperatures of the structures.

The research team will identify and propose different array systems that can be used in taking ERI measurements both from the top and the side of the structures (e.g., dipole-dipole, Wenner, Schlumberger, or inverse Schlumberger arrays will be considered). Practical implications and limitations regarding the field implementation of different array systems should be considered in this effort. ERI measurements will be taken at different conditions (before/after applying brine, at different moisture levels, temperatures, etc.).

During the construction of the structures, three different ERI measurements [one at 85% degree of compaction (DOC), one at 90% DOC, and one at 95% DOC] will be taken to determine the effect of DOC on ERI profiles.

After all the required data is collected, two of the built structures will be selected for an additional set of data collection. Shortly after the last ERI measurements, one of the selected structures will be covered with a sufficiently thick asphalt layer and the other one will be covered with a sufficiently thick concrete layer (the research team will need to determine the layer thicknesses to simulate field conditions). Once sufficient time has passed (the layers have reached a stable temperature, all curing is done, etc.), another set of ERI measurements will be taken (the research team will need to develop a method to access to the top surface of the backfill materials) and the results before/after paving will be compared to investigate the effects of pavement layers on ERI profiles.

The proposed plan for building and testing the large-scale experimental backfill structures as well as the proposed array systems will be presented to the POC for final approval. It should be expected that more than one array system would be selected by the POC for comparing the results of different systems.

The research team will need to make sure enough backfill materials are available to build the large-scale experimental backfill structures. The de-icing agent type, concentration, and application rates/frequencies along with the number of precipitation events that should be simulated will be selected based on the laboratory test results, the winter maintenance efforts, and available precipitation data in Wisconsin. The research team will also need to purchase enough de-icing agent selected for this task.

The methods used and the test results obtained in this task will be documented and presented to the POC in an interim report and in an informal presentation during an online meeting.

3.4 Task 4: Recommending Testing/Monitoring Plans and Adjustments to SPVs

The research team will provide recommendations on the laboratory/field testing methods that can be used for long-term monitoring of MSE walls. In addition, the research team will provide recommendations on implementation plans for long-term monitoring along with monitoring timeline for early detection of potential corrosive environments that can lead to corrosion of metallic reinforcements, reduction in MSE wall service life, and premature wall failures. Practical implications and limitations regarding long-term monitoring should be considered when making recommendations. The research team will also provide a cost-benefit analysis regarding implementing long-term monitoring plans.

The research team will review the currently used MSE wall SPVs and recommend adjustments.

The findings of this task will be documented and presented to the POC in an interim report and in an informal presentation during an online meeting.

3.5 Task 5: Project Final Report

The research team will prepare and submit a Project Final Report following the timeline and requirements detailed in the WHRP Final Report and Close-Out Presentation (COP) Instructions for Preparation and Submission. Thirteen weeks before the end of the contract, the research team will prepare and submit a draft final report (i.e., the Project Report). The report will include a summary of the project background and problem statement, research objectives and approach, best practices, recommendations, and interpretations developed during the project as well as a discussion of implementation options. In addition, the report will also include the literature review and synthesis (Task 1), material sampling and laboratory testing efforts (Task 2), methods used to build and test large-scale experimental backfill structures (Task 3), all the data collected and their analyses, interpretation and results, and recommended long-term monitoring practices for reliable and efficient implementation of monitoring practices for MSE wall backfill materials, and recommended adjustments to the currently used SPVs (Task 4).

The Technical Oversight Committee (TOC) and POC members will review this report. Questions and comments will be submitted to the researcher and will require edits and revisions, or a response and explanation in a Summary Report. The Final Report will be considered complete and approved when the TOC chair accepts all revisions and responses. Any data files collected from the lab and/or field testing/survey should be included for future use, analysis, and interpretation.

3.6 Task 6: Close-Out Presentation (COP)

A Close-Out Presentation (COP) will be scheduled two weeks before the end of the contract. The research team’s Principal Investigator is expected to present the project's results and

recommendations. For this presentation, the research team will create and present a one-hour PowerPoint presentation that will include a summary of the background and problem statement, research objectives and approach, best practices, recommendations, and interpretations developed during the project.

4 Required Testing/Equipment/Materials

4.1 Required Testing

At a minimum, the following laboratory tests should be performed on the collected soil samples where applicable:

- Particle size distribution (AASHTO T 27/AASHTO T 311)
- Atterberg limits (AASHTO T 89/AASHTO T 90)
- Moisture content (AASHTO T 265)
- Specific gravity (AASHTO T 84/AASHTO T 85)
- Proctor compaction (AASHTO T 99)
- Organic content (AASHTO T 267)
- Soil pH (AASHTO T 289)
- Soil resistivity (AASHTO T 288/ASTM G187/ASTM G57 – all three should be used)
- Sulfate content (AASHTO T 290)
- Chloride content (AASHTO T 291)
- Hydraulic conductivity (ASTM D5084)
- Soil-water characteristics curve (ASTM D6836)

The final list of tests will be defined in consultation with the POC.

4.2 Equipment

Include costs in research proposal budget if equipment will be necessary for Tasks.
Provide explanation if cost for any piece of equipment is over $1,000.

4.3 Non-WisDOT Equipment and Materials

The research team is responsible for providing necessary personal protective equipment (PPE) for fieldwork. PPE can be included in the research proposal budget.

4.4 Materials

Include costs in research proposal budget if materials will be necessary for Tasks.
Provide explanation if cost for any materials is over $1,000.

5 Required Travel and Meetings

WisDOT will only fund travel expenses if they are included in the research project proposal budget.

5.1 Travel for Tasks and/or Field Work

Travel is required for this project to collect materials and samples.
Travel expenses can be included in the research proposal budget.
Researchers should not assume the availability of contractors for sampling.

5.2 Meetings

A kick-off meeting, periodic progress meetings, and a close-out presentation are required. Meetings are anticipated to be virtual.

Please see WHRP Meeting Information for additional Information.

5.2 POC Meetings

At the start of the project the POC Chair, lead PI and R&L will determine points in the project where discussions and decisions are needed. 1 hour to 1½ hour-long meetings will be set for the full POC, the researchers, and R&L staff at those times, based on meeting needs.

The researcher will typically have a short presentation with relevant information and progress updates.

5.3 Check-In Meetings

Projects of less than 20 months duration - If there are gaps of more than 8 weeks between meetings, check-in meetings of 20-30 minutes may be scheduled for the POC Chair, lead PI and R&L staff.

Projects of 20 months or longer duration - Meetings four times per year are anticipated. If there are gaps of more than four months between meetings, check-in meetings of 20-30 minutes may be scheduled for the POC Chair, lead PI and R&L staff.

A presentation is not expected at check-in meetings.

5.4 Close-Out Presentation (COP)

WisDOT welcomes a virtual Close-Out presentation; however, the researcher may present the results in person, paid by contract funds, if included in the project budget.

5.5 Conferences

Attendance at conferences is not expected to be a part of WHRP research projects. If attendance at a conference is necessary for the project, the proposal must include justification and travel details.

WisDOT will NOT fund travel expenses apart from what is included in the research project proposal budget.

6 WisDOT/TOC Contribution

WisDOT will provide the following support through the Project Oversight Committee (POC) to support the successful completion of the project.

Work will be conducted with project oversight by WisDOT staff and WHRP Geotechnics Technical Oversight Committee (TOC). The TOC members will appoint a POC to support the successful completion of the project.

The research team may assume that WisDOT staff/POC members can contribute a maximum of 40 hours over the project's duration.

The research team will not assume the availability of WisDOT staff or equipment in the proposal. If WisDOT or another entity donates equipment or staff time, a commitment letter must be included in the proposal.

The TOC and POC will coordinate access to WisDOT aggregates used in laboratory test programs, if needed. The TOC and POC will also coordinate access to WisDOT databases, if needed, as requested and approved

7 Traffic Control (if needed)

Traffic control will NOT be required for this project.

If fieldwork to conduct this research is anticipated on or around in-service facilities the researcher shall specify the nature and extent of traffic control needs. The proposal should specify if county

maintenance departments or traffic control businesses will be utilized. The researcher will make accommodations in their proposal budget for traffic control if it is needed.

Please see the WHRP Proposal Preparation Instructions for additional information.

WisDOT will NOT fund traffic control expenses apart from what is included in the research project proposal budget.

8 Deliverables – Research Results and Implementation Plan

WisDOT seeks to fund research with high implementation potential. Implementation potential will be tracked throughout the lifecycle of this research project and may include changes to expected implementation. The research plan must include specific statements describing anticipated research results and an assessment of implementation potential

8.1 Research Results

Proposals should detail the research results in terms of a specific deliverable(s)

8.2 Implementation Plan and Deliverables

This section also includes an implementation plan to address the planned implementation type(s) indicated in the RFP. While the plan may change as the research progresses, at a minimum the proposal should indicate:

- The product expected from the research.
- The stakeholder or intended audience that will most likely be impacted by the research results.
- Potential impediments to implementation.
- Activities necessary for successful implementation.
- Implementation deliverables
- Measures of success
- Data collection requirements

Please see the WHRP Proposal Preparation Instructions for specific directions related to Research Results and Implementation including completing the table below

Provide information and details regarding the deliverables included in the Implementation Plan and Deliverables table.

Implementation Plan and Deliverables

Please add and describe implementation plans and keep this table in the Proposal.

Successful implementation of this research will be achieved through the development of the following items:

Implementation Type	Description	Researcher's Deliverables/ Products/ Activities	Timeline
☐ Develop a Model:			
☒ New Design Method or Guidance:	Develop recommendations and implementation plans for long-term monitoring possible corrosive environments that may cause metallic reinforcements to corrode	Work product/engineering recommendations	End of project
☒ New Product Implementation:	Develop a cost-benefit analysis of long-term corrosion monitoring of MSE wall backfill environments	Work product/Cost-benefit analysis	End of project
☐ Recommend Future Studies:			
☒ Revise a Specification:	Propose adjustments to the SPVs currently used for the design and construction of MSE walls	New SPV language	End of project
☐ Inform Policy:			
☐ Other:			

9 Deliverables – Reports and Presentations

9.1 Interim Reports & Meeting Updates

Interim reports may include the Literature Review and others as designated.
Meeting updates are typically short PowerPoint presentations.

Interim Reports are flexible in format and length. These may be papers, graphs, tables, surveys, or other formats. The POC and researcher will determine what format and length is most appropriate for each report.

Presentations with updates are typical at POC meetings, but are not expected for check-in meetings.

Email the meeting presentation and/or updates to R&L staff 1 week prior to the meeting.

9.2 Final Report Requirements, Process and Timeline

The Final Report for the research project will go through three stages as it is reviewed by the TOC/ POC and edited by the researcher(s): Project Report, Revised Report and Approved Final Report.

For full details please see WHRP Final Report and Close-Out Presentation (COP) Instructions for Preparation and Submission.

9.3 Project Report

Submit to www.Scholastica.com 13 weeks before the project end date.

Email the Project Report in both Word and PDF formats to R&L. Send the cover, technical documentation, and disclaimer pages in a separate file, in Word format.

9.4 Revised Report and Summary Document

Edits and revisions within the Project Report are expected. The PI is required to respond to all comments and questions submitted by reviewers and submit a Revised Report and Summary document to Scholastica. Any items not integrated into the report are put into a Summary document with explanations or responses.

Submit to Scholastica and email to R&L in both Word and PDF formats.

The Revised Report and Summary document are due 6 weeks before the contract end date.

Revisions and responses will be reviewed and the researcher may need to repeat the revision process if edits or responses are unclear or incomplete.

9.5 Approved Final Report

The TOC/POC will make the determination that all edits and responses are complete and the Final Report is approved.

The TOC/POC Chair will notify the PI of approval and email the APPROVED version to R&L.

R&L will prepare the Approved Final Report for posting.

9.6 Close Out Presentation (COP) for Project

The PI presents a PowerPoint summary to the POC of the research project two weeks before the contract end date.

The PowerPoint presentation includes a summary of the background and problem statement, research objectives and approach, best practices, recommendations, and interpretations developed during the project.

The PowerPoint is a deliverable of the project.

9.3 Research Data

All research data will be identified and made available per the Data Management Plan (section 16).

Reports, Presentations and Deliverables

Please add reports and presentations and keep this table in the Proposal.

Report / Presentation	Description of Deliverable	Format	Task	Timeline
Literature Review and Summary	The literature review results will be documented and presented to the Project Oversight Committee (POC) in an interim report.	Word and PDF	1	
POC Meeting Updates	The results of Task 2 will be documented and presented to the POC in an interim report and in an informal presentation during an online meeting.	Word, PDF, and PowerPoint	2	
	The methods used and the test results obtained in Task 3 will be documented and presented to the POC in an interim report and in an informal presentation during an online meeting.	Word, PDF, and PowerPoint	3	
	The findings of Task 4 will be documented and presented to the POC in an interim report and in an informal presentation during an online meeting.	Word, PDF, and PowerPoint	4	
Researcher's Final Report	Submit to https://hrp.scholasticahq.com Email Word and PDF versions to R&L See WHRP Final Report and Close-Out Presentation (COP) Instructions for Preparation and Submission	Word and PDF	5	13 weeks before end date
Revised Final Report and Summary document	Submit to https://hrp.scholasticahq.com Email Word and PDF versions to R&L.	Word and PDF	5	6 weeks before end date
COP Presentation	See WHRP Final Report and Close-Out Presentation (COP) Instructions for Preparation and Submission	PowerPoint	6	2 weeks before end date

10 Deliverables – Required Project Documentation

10.1 Quarterly Progress Reports (QPRs)

1-2 page summaries of project activities, next steps and expenditures for the quarter.

10.2 Quarterly Invoices

11 Project Schedule

The duration of the research project is provided on page 2 of this RFP.

The researcher will provide a work schedule based on the assumed contract start date.

11.1 **Summary of Hours–** The proposal must include template WHRP Proposal Summary of Hours

11.2 **Gantt Chart** - The project schedule must include a Gantt chart.

12 Budget

12.1 Budget Worksheet

The researcher will completely fill-in the Excel WHRP Proposal Budget Worksheet template.

12.2 Budget Justification

The researcher will provide a detailed description of costs related to travel, materials and supplies and other direct costs.

See the WHRP Proposal Preparation Instructions for details.

13 Qualifications of the Research Team

The proposer will provide information on the qualifications and background of the research team.

14 Other Commitments of the Research Team

The proposer will complete the **Summary of Commitments** template in WHRP Proposal Commitments of Research Team.

15 Facilities and Information Services

The proposer will provide their laboratory and technical certifications for project related activities.

16 Data Management Plan

The research team will include a Data Management Plan (DMP) documenting all field/laboratory data and analyses to ensure accessibility and transparency of research data as required by the USDOT per the Public Access Plan (https://ntl.bts.gov/ntl/public-access/creating-data-management-plans-extramural-research).

All research data will be identified and made available per the Data Management Plan.

See the WHRP Proposal Preparation Instructions for details.

17 References

The proposer will provide references of the research team**.**

18 Proprietary Information in Proposal

DOA-3027 Designation of Confidential and Proprietary Information Form

Any restrictions on the use of data contained within a proposal must be clearly stated in the proposal itself. Proprietary information submitted in response to a request will be handled under applicable Wisconsin procurement regulations and the Wisconsin public records law. Proprietary restrictions usually are not accepted. However, when accepted, it is the proposer's responsibility to defend the determination in case of an appeal or litigation.

Any material submitted in response to this request that the proposer considers confidential and proprietary information and which qualifies as a trade secret, as provided in s. 19.36(5), Wis. Stats., or material which can be kept confidential under the Wisconsin public records law, must be identified on a **Designation of Confidential and Proprietary Information form (DOA-3027).**

Proposal prices cannot be held confidential.

19 Public Records

WisDOT intends to maintain an open and public process in the solicitation, submission, review, and approval of procurement activities. Notwithstanding the foregoing, records may not be available for public inspection before issuance of the award of the proposal.

The proposer shall retain all records produced or collected under an awarded contract for five (5) years following final payment under the contract and allow access to such records in accordance with requirements established under 49 Code of Federal Regulations 18.42, subch. II of Chapter 19, Wis. Stats. and Chapter 16, Wis. Stats.

20 Evaluation Criteria

The Evaluation Criteria and Scoring Matrix are in the WHRP Proposal Preparation Instructions.

End of Request for Proposal