Responses to FFY19 RFP Questions

General questions regarding the WHRP RFP process:

1. Is the Roadway Concrete Barrier Design and Performance - Material Durability Issue proposal due January 20th as stated on the cover sheet of the RFP or on the 26th as stated on the WHRP website?
   All proposals are due on January 26th, 2018. The Roadway Concrete Barrier Design and Performance - Material Durability RFP has been corrected to reflect this date.

2. I would like to know whether RFPs are open competition for the research institutes and/or universities from other states.
   RFPs are open to researchers in all states.

3. Does WisDOT place limits on project cost items such as tuition for graduate students or indirect costs? If so, what are those limitations?
   Limits are not placed on tuition costs for graduate students. Tuition costs must be included on the budget worksheet provided in the Proposal Preparation Instructions. Proposers should indicate their indirect cost rate on the budget worksheet. Rates may be published on the institution’s website as facilities and administration rates. Indirect cost rates are expected to reflect reasonable compensation for the work.

Regarding the WHRP request for proposal, “Internal Curing of Bridge Decks and Concrete Pavement to Reduce Cracking”:

1. Item D in the Scope of Work states that laboratory experiments will be designed and conducted unique to bridge decks and unique to concrete pavements. Other than different mix designs, what is anticipated to be different for the tests between bridge and pavement concrete?
   Bridge decks are reinforced in top and bottom mats that both have longitudinal and transverse bars whereas our concrete pavements are largely unreinforced with just untextured dowel bars at control joints. Bridge decks on girders are typically eight inches in thickness whereas concrete pavements may be in the range of 12 inches thick. The placement and curing methods are also quite different for bridge decks and concrete pavements. In addition, bridge deck pours are generally of a smaller quantity than extended concrete pavement projects (miles). This may lead to different methods to achieve internal curing in bridge decks versus concrete pavements.

2. Is it expected that the researchers will be developing new test methods for this project?
   No, depending on the research, there may be no need for additional test methods. However, the researcher needs to make recommendations to methods of testing (existing or new) that would be used to implement internal curing in actual production projects. This may be as simple as noting the appropriate ASTM or other test procedure to ensure the internal curing agent is within acceptable limits of application (for example, moisture content of aggregate).
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3. Item C in the Scope of Work discusses identifying other bridges and pavements constructed with internal curing. Does WisDOT have any projects that have used internal curing or would all of the projects be from other DOTs?

WisDOT does not have any historic projects that have used internal curing. However, it is our understanding that the Indiana DOT, Minnesota DOT, Illinois Tollway and others have used internal curing for bridge decks. We are interested in documented internal curing methods, details, specifications, costs, and performance from actual applications.

4. Item C in the WisDOT/TOC Contributions section states that “the research team will consult with POC members in the selection of project sites” but there is no indication in the Scope of Work that any field testing is required. What is the purpose of the project sites described in Item C?

The PI will work with the POC members to develop all the needed elements (manual language, Special Provisions, Testing Methods, and other) to implement an internal curing project on an actual WisDOT Pilot Project. The construction of the Pilot Project may be after the conclusion of the research project and the PI may not be involved with Pilot Project Implementation as part of this research project.

Regarding the WHRP request for proposal, “Textured Epoxy Coated and Galvanized Reinforcement to Reduce Cracking in Concrete Bridge Decks and Components”:

1. Would you be interested to explore enamel-coated bars and potential applications to reduce cracks in bridge decks?

Enamel-coated bars are not noted in the RFP for this project. This may be a viable technology and the proposer may relate it to the requirement of the RFP.

2. It seems there is no ASTM standard on textured reinforcement. Please clarify what the "textured reinforcement" is referring to? Is this a specific type of deformation (ribs) or a specific type of reinforcement with its own mechanical properties different than ASTM A615 and A706. Please provide a reference (report, paper, website) for this type of reinforcement.

Textured Reinforcement speaks to the surface profile provided to epoxy coated reinforcement. To improve the bond behavior of the new bars, a second coating is provided to add texture. The epoxy receives a powder coating improving bond strength. FHWA has commented that DOT’s reported reduced and or tighter cracking than conventional epoxy coated rebar on three pilot deck projects. Process is not patented and difference in cost is only few cents per lb. Please see below picture.
3. In addition to pullout tests, would large- or full-scale testing of Wisconsin deep prestressed girders and bridge columns reinforced with coated/galvanized bars be of the interest of WHRP?
   Primary interest will be bond strength as it relates to cracking in concrete bridge decks. This may be a micro bond issue that does not relate to the ultimate pull-out strength/bond of deformed reinforcement bars.

4. Please provide the contact info of a pre-caster that can construct Wisconsin deep prestressed girders.
   Wisconsin DOT does not promote/endorse particular vendors, providers of materials or services. Below is a list of two providers that we have worked with in the past:
   
   • County Materials Corporation - 1104 East LT Townline Rd., Janesville, WI, 53546, info@countymaterials.com
   • Spancrete, 2331 Spancrete Ln, Valders, WI 54245  https://www.spancrete.com/contact/wisconsin
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5. The RFP mentions that a field evaluation program, which could include observations and instrumentation, should be developed. Will the project timeline allow the execution of the field evaluation program or only the development of it (to be executed in a future project)?
Yes, the intention of the project is to have a pilot project identified for the 2019 Construction Year window. The Research will work with the Project Oversight Committee (POC) to identify a CY2019 project for implementation of the Pilot Project.

III. Scope of Work
Work with the WHRP Structures Technical Oversight Committee (TOC) to identify a full-scale field application of textured or galvanized reinforcement. This would most likely be a bridge deck constructed in the CY 2019 construction season. Develop design guidance, specification recommendations, and field evaluation program to support successful piloting of the reinforcement and quantification of the performance. This could involve both observations and instrumentation. Construction related cost of reinforcement would be the responsibility of WisDOT.

V. Required Travel
There may also be travel required to fabrication facilities and construction sites for construction pilot projects.

Regarding the WHRP request for proposal, “Rubber Asphalt Study for Wisconsin”:

1. Laboratory and technician certifications are required for each proposal. Must the certifications and accreditation be in place and current upon proposal submission or upon award of the project?
   Technician certifications can be acquired after proposal submission. It should also be mentioned that other agency equivalents will be accepted. HTCP certification information can be found on the University of Wisconsin-Platteville’s website: https://www.uwplatt.edu/ems/highway-technician-certification-program

2. Please include more details about the following deliverables:
   Draft straw specification:
   Draft SPV or STSP language:
   Straw specifications refer to conceptual specifications that can be further developed by WisDOT. Knowledge of WisDOT specifications is required.

3. Please explain the specifics about “Requirements for Laboratory/Technician Certifications.” How to confirm fulfillment of the following requirements:
   HTCP AGGTEC 1 and HMA IPT at a minimum
   Other agency equivalents will be accepted. The POC will determine fulfillment of the requirements.
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4. Will WisDOT accept any other equivalent certifications (i.e. AASHTO) in lieu of HTCP AGGTEC 1 and HMA IPT? Yes. Would it be enough for WisDOT if the research team indicates, in the proposal, the willingness to obtain certifications for HTCP AGGTEC 1 and HMA IPT upon award? Yes. Can senior graduate student research assistants be considered as certified? There should be some type of agency certification. Other agency equivalents such as AASHTO will be accepted.

5. Section I – Background
Some State environmental programs require (or strongly encourage) the use of recycled waste materials to focus on suppliers that provide in-state recycled materials. Section I notes that there are “Wisconsin suppliers of both the dry and wet process rubber modified systems.” Is the study required to use the in-state suppliers? Will the research study have latitude to consider any and all crumb rubber suppliers? Please clarify.
The researcher will have the latitude to propose any crumb rubber supplier. WisDOT is interested in developing a specification that is economically feasible which typically means using local suppliers. This research will not require in-state materials to be used exclusively.

6. Section II – Objectives
Section II requires the use of both a dry process and wet process modified asphalt mix. How much rubber is expected to be added in both cases? This is to be determined by the researcher and approved by the Project Oversight Committee (POC). Is it the intent of the study for both mixes to have similar in-place properties? The proposal team is interpreting the RFP that the rubber modified binders will need to achieve similar properties to the PG 58-28H. Please confirm or clarify.
The intent of the research is to develop a specification that will allow the use of rubber as a replacement for a type H binder that will improve performance or at least do no harm. The interpretation stated is correct.

A further question on the proposed test sections, is the field study limited to the 3 sections as described? The proposal team is interpreting the RFP that these are the only three sections. Correct, only three sections are expected, however, the researcher is encouraged to propose alternatives that will improve the study.

7. Section III – Scope of Work
Section III begins with a field demo, but does not address the preparation of mix designs. Who is responsible to conduct the mix designs? The proposal team is interpreting the RFP that the study will include developing a practical mix design procedure for using rubber asphalt binders. Please confirm or clarify.
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A mix design procedure for using rubber will need to be developed by the researcher and approved by the POC. The test sections will be part of a let project where the contractor will ultimately have the responsibility of providing the mix designs that meet the requirements of the contract as set forth by the researcher, POC and WisDOT.

Similar to the development of mix designs, Section III lists the materials, but does not address what properties the rubber modified binder needs to meet. How will the modified properties be established? For example, will the rubber modified binder meet a target PG grade? This is the same question posted above. Please confirm or clarify.

The researcher will need to propose what properties need to be met, whether through performance testing or another method.

Prior to construction (and the calendar Spring after construction) the RFP calls for a pavement condition survey. Is there an expected level of condition survey? Options would include (1) visual roadside survey, (2) some level of automated high-speed condition survey, and (3) the addition of FWD testing. Does the RFP plan to specify “detailed pavement condition survey” or allow the study team to propose the level of detail? Please clarify.

The research team should propose the level of detail. The POC will give final approval.

Related to the question of the condition survey, can the study team perform the pavement condition assessment right before construction? Or how much time prior to placement should the assessment take place? This has a significant impact on the proposal’s budget to acquire traffic control services. Please clarify.

The research team should propose the details of the pavement condition assessment prior to construction. The POC will give final approval.

8. Section IV. Required Testing
For out-of-state proposers, can an AMRL laboratory accreditation and out-of-state technician certification be used to fulfill the minimum HTCP AGGTEC 1 and HMA IPT from Wisconsin? Yes, other agency equivalents will be accepted.

9. Section V – WisDOT/TOC Contribution
The RFP requires the study team to work within the contractor’s traffic control (during construction). It also states that additional traffic control is the responsibility of the contractor. Should this additional traffic control be under the responsibility of the study team “contract” (aka research contractor)? Please clarify.

During construction, WisDOT will provide traffic control through the contract. After construction is completed, the researcher will be responsible for traffic control.
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10. For budgeting, what region of Wisconsin is the test strip expected to be constructed in?
    Unknown at this time, to be determined by the POC.

11. What construction testing will be performed by WisDOT?
    WisDOT will require similar testing requirements of the current acceptance criteria for the construction project. Minor testing modifications will be considered if they are not too burdensome for the regional testing laboratory.

12. Will the three mixtures (wet, dry, and control) have the same JMF except for the type of binder used?
    This should be proposed by the researcher. It makes sense that in the research as many variables as possible are reduced.

13. If the test section is for new pavement, what is meant by “Assess and document pavement condition before placement.”
    Some projects are constructed over existing pavements. The team will need to assess the underlying pavement before placement of the test sections.

14. Will WisDOT collect and ship mixture and binder samples to the researcher, or a regional office?
    The researcher is responsible for collection of the materials and shipment to their lab.

15. Will mixture testing involve only plant-produced mixtures?
    It is expected that only plant produced mixtures will be tested. However, the researcher is encouraged to propose alternatives that will improve the study.

16. Will WisDOT accept equivalent certifications from neighboring states?
    Yes.

17. For the wet process technique: Is WisDOT planning to use terminal-blended modified binders or binders modified in the plant? (This is going to make a big difference on how to tackle binder testing.)
    The researcher will need to propose a solution to this question. The POC will approve the recommendation or recommend another alternative.

Regarding the WHRP request for proposal, “Recycled Asphalt Binder Study”:

Laboratory and technician certifications are required for each proposal. Must the certifications and accreditation be in place and current upon proposal submission or upon award?
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Technician certifications can be acquired after proposal submission. Also, other agency equivalents will be accepted.

1. Please include more details about the following deliverables:
   Draft straw specification
   Straw specifications refer to conceptual specifications that can be further developed by WisDOT.

2. Please explain the specifics about “Requirements for Laboratory/Technician Certifications.” How to confirm fulfillment of the following requirements:
   AASHTO resource accreditation
   Please find a directory of AASHTO accredited laboratories at the following address: http://www.aashtoresource.org/aap/accreditation-directory. AASHTO requires record keeping and calibration checks of laboratory equipment. Documentation/procedures for verifying accuracy of testing equipment are expected to be available.

3. Will the materials be available at WisDOT project offices, or collected from construction sites?
   The POC will help facilitate communication between researchers and material suppliers. The materials can be made available at the central office in Madison.

4. Can the researchers expect to be supplied with loose-mix, or components (RAP, aggregate and binder)?
   For this research, it would seem the components would be most useful, however, if another alternative is proposed it may be considered.

5. Are the mixes to be tested commercially produced and/or WisDOT approved mixes?
   The researcher should propose what mixes should be tested. The POC will approve or recommend an alternative.

6. Will WisDOT consider proposed testing that is not listed?
   The researcher is encouraged to propose any testing method they feel would improve the study. The POC will decide if it is appropriate.

Regarding the WHRP request for proposal, “Comparison of ASTM Standards for the Evaluation of Geogrid Strength”:

1. Can a portion of the project budget be allocated for the ASTM testing clamps?
   Yes. The researcher may propose to use part of the funding to evaluate boundary conditions associated with the testing procedures.
2. Can you please provide an approximate number of how many different products are currently used in Wisconsin?

The researcher must define the number of products and specimens based on the funding available for the project. The number of products and specimens along with the overall quality of the proposal will be evaluated during the decision making.

3. Item C in the WisDOT/TOC Contribution section says that “the research team will consult with POC members in the selection of project sites” but there is no indication in the Scope of Work that any field testing is required. Additionally, item E states that no fieldwork is anticipated. What is the purpose of the project sites described in Item C?

Thank you for pointing that inconsistency in the Request for Proposal (RFP). Please read that sentence as “the research team will consult with POC members on the final selection of products and type of specimens to be tested.”

4. Can you please provide the current methodology used by the Wisconsin DOT for the design and specification of geogrids for the construction of earth reinforcing structures, reinforced earthen embankments and subgrade stabilization in transportation facilities?

Please refer to the Wisconsin Department of Transportation Bridge Manual for the design of MSE walls and the Wisconsin Department of Transportation Construction Manual for the requested specifications.

5. Please clarify terminology describing the type of features being constructed with geogrids; Do “earth reinforcing structures” include both MSE walls and reinforced soil slopes on firm foundations?

Yes, they do.

Are “reinforced earthen embankments” structures on soft foundations, that typically have the reinforcement at the base of the embankment structure?

Yes.

Is subgrade stabilization for paved roadways?

Yes.

6. The RFP states that in phase 2: The research team is expected to test at least 30 to 50 geogrid specimens. By specimens, does this mean the totality of individual tests conducted or 30 to 50 different geogrid types?

The research team is expected to run tests on least 30 to 50 individual specimens. Please note that the total number of tests along with the plan to interpret the results will be evaluated during the
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7. In Phase 3, The researcher is requested to interpret the results and perform statistical analyses of the results to evaluate same and to determine the accuracy, precision, and reliability of each testing methodologies. In conjunction with question 3, conducting valid statistical analyses to assess accuracy, precision, and reliability may take testing many more than 30 to 50 specimens. Can expectations for numbers of specimens be clarified in light of the evaluation requirements? You are correct, to perform a full Gaussian distribution analysis of the results, there must be at least 30 tested specimens. However, the research team may also want to consider small population statistics if they cannot run 30 specimens for each of the material types.

8. Please provide a representative, historical list of geogrids used by Wisconsin DOT for the design and construction of Earth reinforcing structures, Reinforced earthen embankments, and Subgrade stabilization in transportation facilities. That is beyond the scope of the project.

Regarding the WHRP request for proposal, “Roadway Concrete Barrier Design and Performance - Material Durability Issue”:

No technical questions were submitted for this request for proposal.