



WHRP

FFY22 RFP Questions

All the answers are provided in red and italic.

Administrative

1. We have a question on the referenced RFP (Weight-Volume Relationships and Conversion Factors for Soils and Aggregates of Wisconsin). Is this RFP exclusively for academic researchers?
No.
Would you accept any industry proposals for this RFP?
Yes.

Flexible Pavements

Balanced Mixture Design Pilot and Field Test Sections

1. How will the instrumentation be used to support the research objectives?
Stress and strain measurements will be used to compare pavement responses to:
 - *traffic loading and performance test results for each mixture, and*
 - *the resulting surface distress between different test sections.*
2. What type of pavement construction is expected (i.e., new construction, mill-fill, overlay) for the field test sections? This is critical for sensor selection, traffic control considerations, and type of distress(es) to design the experiment around.
It is expected that the study will be conducted on a new pavement construction project.
 - a. If it is a new construction project, can the researchers assume that the only difference between the multiple test sections will be the surface mix (i.e., mixes designed using BMD versus regressed air voids approach)?
Yes, the only difference is expected to be the surface mix.
3. The RFP states that the project (site) will be selected prior to the research start date. For planning purposes, we would like to know the expected time frame that the research team should be ready to install instrumentation. In other words, can the researchers expect (plan) to install the hardware between 6/2021 and 9/2021?
No, the project start date will be October 2021 and the field installation will occur during the 2022 construction season.
4. Is it correct to assume that WisDOT will conduct pavement condition surveys of the test sections?
Yes.
 - a. If so, when would those surveys begin?
Surveys are a continuous effort for all projects.
 - b. What is the frequency of the surveys?
Every 3 years or as requested by DOT staff.

Geotechnics

Weight-Volume Relationships and Conversion Factors for Soils and Aggregates of Wisconsin

1. Section IV. Required Testing lists direct shear test as one of the required tests. It is not clear how this test is related to the goal of this project. Can this be clarified? Is this test requested for evaluating certain types of soil/rock/geomaterials?

From II. Objectives section of the RFP, "The researcher will also be asked to look for correlations between weight-volume relationships and commonly measured properties of soils to reduce the need for complex testing when determining weight-volume relationships."

2. How many different types of sand/clay/silt/and gravel types throughout Wisconsin are expected to be evaluated and tested? In addition, would WisDOT provide the locations of these borrow pits/sources?

Since the predominant soil types vary in different regions, the number of samples predominantly sand, clay, silt or gravel will vary by region. A sufficient number of samples should be collected and tested to quantify the weight-volume relations of the different regions and geological areas of the state.

WisDOT Central Office Geotechnical Engineers and Regional Soils Engineers will assist the researcher with determining sample locations.

3. What sizes of RIP-RAP materials are typically used by WisDOT?

Per Std. Spec. 606, the standard rip rap sizes are Extra-Light, Light, Medium, Heavy and Extra-Heavy.

Note: *Specific Gravity testing (AASHTO T100) should be added to the list of required laboratory testing in Section IV of the RFP.*

Wind-Loaded Structures

1. The WHRP 0092-08-14 and 0092-09-07 projects included field monitoring, lab tests and finite element analyses of sign structures. How much of this RFP was motivated by those projects?

While the RFP was not motivated from earlier projects, the research team should consider previous relevant research projects.

2. The national building code changed the load calculation in 2010, does WisDOT believe it is time to upgrade the wind design specifications? How much of the new RFP was motivated by that kind of needs?

This project was motivated by AASHTO LRFD changes.

3. There was a derecho in Northern Iowa in August of this year and an Internet shows quite a few damage to power lines and sign structures on highways. How much of the new RFP was motivated by that kind of damage?

We are aware of this event but it did not motivate this project.

4. Literature review - Will WHRP assist with locating / getting access to the current literature, especially with other transportation agencies?

No. This is the responsibility of the researcher. WHRP will share the preliminary literature search with the selected research team, but it is the responsibility of the researcher to conduct a comprehensive literature review.

5. Monitoring plan

- a. What are the preferred two types of wind-loaded structures for study?

Structures with single-drilled shaft foundations, including two different soil types.

- b. Will WisDOT select the two (minimum) structures to be monitored? Have they already been selected, and if so, what are they and where are they located? If not, how can we know how much to budget for travel? Is it likely WisDOT can locate the structures reasonably close to my location?

The structures have not been located and will depend on the projects under construction during the research period. Although we will work with the researcher to determine the selected structures, the researcher should include travel in their budget.

- c. As both structures must have different soil types in the foundations, where can I locate a map or database of soil types across Wisconsin? Does WisDOT have preferred end-member soil types (e.g. low and high strength soils, or two low strength soils with varying other properties)?

The structure locations have not been located at this point, so the researcher should consider and budget for sites with low and/or high strength soil properties.

6. Deployment

- a. Will WisDOT conduct traffic blocking as needed to safely instrument the structures? Does this need to be included in the budget? If so, will WisDOT help to determine this cost?

We anticipate instrumentation will be installed during foundation construction.

However, if additional traffic control is required (e.g., for monitoring, readings, etc.) the research team will be responsible for the associated cost. Once the project begins, WHRP will help with associated traffic control logistics by providing contact information, but traffic control coordination and scheduling will be the responsibility of the research team.

- b. At what frequency does data need to be collected over the twelve-month period?

Data collection frequency to be determined by the research team.

7. Is the 40-hour maximum expected contribution from WisDOT staff/TOC members the amount of time that can be assumed without a letter of commitment? Or are the activities outlined in V-A, V-B of the RFP totaling less than 40 hours and any more time commitment up to 40 hours requires a letter of commitment?

Yes, 40 hours is the maximum amount of time the TOC should be expected to contribute to the project.

8. This call for proposal is opened to other states. As outsider University/entity, what are the minimum in-situ visits that the agency thinks is needed and that should be reflected in the budget? Any percentage?

At a minimum, the researcher should plan to be on site during instrumentation installation at both sites. The number of other site visits will depend on the researcher's monitoring plan and should be addressed in the researcher's proposal.

9. Can a team include a collaborator/co-PI that comes from a small teaching institution?

Yes.

10. Is the agency encouraging to explore/develop new sensing systems or prefer to use traditional sensors for the scope of work?

The sensing system should be determined by the researcher and will be evaluated as such.

11. Does the project expect a modified analysis algorithm or recommended modification on AASHTO parameters? Modifying AASHTO would need a lot of test data.

The purpose of the study is to evaluate WisDOT sign structure design methodology.

12. Besides the type of soil of the two foundations, is there any limitation regarding the location of the wind loaded structures?

No. The Project Oversight Committee (POC) will work with the researcher to determine the two structure locations. Refer to Question 5b.

Rigid Pavements

Field Investigation of Dowel and Tie Bar Placement

No questions were submitted for this project.

Timely and Uniform Application of Curing Materials

1. What is the size of WisDOT's existing dataset on curing conditions (product, timing, etc.) and field performance (cracking, scaling, delamination and timing thereof) for existing projects? Will that dataset be shared with the project team? Is the project team expected to account for that dataset fully?

WisDOT has collected and maintained field performance data (PCI and individual cracking data). That data will be shared with research team. WisDOT does not have an existing dataset on curing materials.

2. How many field projects does WHP intend for the project team to visit and document curing application and follow up on the performance (cracking, scaling, delamination, warping, etc.)? Are they to be exclusively state roads or would they include local roads? How many visits per field project does WHP expect (monthly, yearly)?

Researcher should plan for the appropriate number of field projects and site visits within the allowable budget. The research team will be expected to visit field sites when the curing material is applied and monitor early cracking. Yes, field projects should be exclusively on state roads.

3. For field surveys, will state/local agencies provide traffic control or are these services to be covered by the project research funds?

The research team is responsible for all cost associated with traffic control. For this project, it is expected that most of the field work will occur during construction, then no traffic control will be required. If the research team plans for performance visits after construction, traffic control costs will be covered by the research team.

4. What will be the timeframe and anticipated funding for the separate contract involving the data management plan?

The selected research team will be asked, during contract negotiations, to develop a plan to secure and make the data and analysis obtained during this project available to WisDOT engineers and the public. There is no separate funding for the data management plan and the plan will be part of the project contract.

5. Is the project entirely based on new data collection? Any data available from previous WisDOT projects?

WisDOT has collected performance data. If required, the data will be shared with the research team. The research team is responsible for collecting new curing material application data at the field.

6. Are the researchers able to work with the contractor/DOT to set up an experimentation program during construction/application (e.g., varying application time) or researchers will be merely observers and collect data at the select projects?

Project tasks involve:

- 1) observe and collect the data related to how contractors determine the optimal application times and assess the coverage of curing materials, and*
- 2) suggest innovative methods/tools to identify the optimal timing and assess the coverage of curing applications in the field.*

Researchers may work with contractors and WisDOT to attempt new methods to find the optimal application time in the field.

Structures

Improving Bridge Concrete Overlay Performance

1. Is the scope of work that is included in the RFP the only items the researchers should focus on or can the researchers suggest other task that may potentially offer additional value to the research?

The research team may suggest additional tasks. For example, the research team might consider including a field component into the list of tasks.

2. If this added value sections is permitted, could a higher budget be justified as well?

No

3. If the research will require local materials (e.g., aggregates) for evaluation should shipping be included in the budget?

Yes, include shipping costs in your budget.

Will WDOT help in finding the material suppliers as well?

WisDOT can help find material suppliers.

4. Task 3 mentions at least 2 site visits but Task 7 raises “field data analysis.” Does this imply that WisDOT will provide additional field data to supplement the Task 3 field study and this composite dataset will require analysis under Task 7?

No, Task 7 refers to any collected data and developed analyses completed during the completion of the project.

5. Will WHPR prioritize the objectives to improve the proposals received? Given the request for specifications development, cataloging mix designs, literature reviews, performing experimental work in both Task 4 and 5, performing field surveys and/or analysis of existing field data again, etc., there is a concern about the project scope relative to the project resources (time and funding).

The proposal may recommend prioritization.

6. For field surveys, will state/local agencies provide traffic control or are these services to be covered by the project research funds?

WisDOT/TOC Contribution, items D & E cover this.

7. What will be the timeframe and anticipated funding for the separate contract involving the data management plan?
The selected research team will be asked, during contract negotiations, to develop a plan to secure and make the data and analysis obtained during this project available to WisDOT engineers and the public. There is no separate funding for the data management plan and the plan will be part of the project contract.
8. Regarding the raw materials for conducting experiments, do researchers need to purchase them by themselves, or will DOT provide them for researchers? The cost of materials, including shipping, is the responsibility of the researcher.
WisDOT can help find material suppliers.
9. What is the motivation for WisDOT to implement low-slump concrete overlay?
WisDOT currently uses a low-slump concrete overlay. We are looking for improvements to the current mix, application and cure.
10. What is the main construction method for low-slump concrete overlay, is roller-compacted concrete (RCC) paving or slip form paving method used for construction?
Please refer to <https://wisconsindot.gov/rdwy/stndspec/ss-05-09.pdf>
11. Is there any requirement for the production of lab cast specimens? Specifically, do you stipulate mobile mixer batching for the Grade E concrete/control mix?
Mobile mixer batching is required for Grade E concrete.