SOLICITATION ADDENDUM 1
QUESTIONS AND ANSWERS

SOLICITATION NUMBER: RFP R423-25
Falling Weight Deflectometer (FWD) Testing, Roadway Coring and Ground Penetrating Radar (GPR) Services
Opening Date: June 30, 2025, 2:00 P.M. CST
Addendum Effective Date: June 16, 2025

Questions and Answers

Following are the questions submitted and answers provided for the above-mentioned solicitation. The questions and answers are to be considered as part of the solicitation. It is the responsibility of bidders to check the State Purchasing Bureau website for all addenda or amendments.

Question Number	RFP Section Reference	RFP Page Number	Question	State Response
1.	D. Work Plan 1. Scheduled Work Project Services	21	*"In the event services are unable to be performed as scheduled and an additional date must be set up to perform the specified work at one of the grouped locations, the Contractor will be allowed to bill at the secondary rate per location."* **Where does this secondary rate go on the cost proposal?**	The Cost Proposal Sheet provides "Additional Locations" and pricing for those services. This will be considered the "secondary rate."
2.	D. Work Plan 1. Scheduled Work Project Services	21	*"Coring and FWD work will be done under the same traffic control lane closure; it is the Contractor's responsibility to determine means and methods to perform coring and FWD work in a single trip with the same traffic control."* **FWD testing (1 min per location) is significantly faster than the coring operation (15 - 30 mins).**	No. The intent of combining the Coring and FWD testing together under the same traffic lane closure is to minimize the amount of times traffic is impacted.

			Can it be done separately from coring for more efficiency and not idling while coring being done?	
3.	D. Work Plan 1. Scheduled Work Project Services	21	*"Contractor shall work with M&R personnel and District staff to coordinate a specific date for the Contractor to perform the testing and coring services at specific locations in a single trip. Coring and FWD work will be done under the same traffic control lane closure; it is the Contractor's responsibility to determine means and methods to perform coring and FWD work in a single trip with the same traffic control. Travel costs are included in the contract pricing for single trip services. In the event services are unable to be performed as scheduled and an additional date must be set up to perform the specified work at one of the grouped locations, the Contractor will be allowed to bill at the secondary rate per location."* **Each district needs to be tested separately and coordinated with district staff? Can FWD testing be done separately for all districts in one mobilization, since FWD testing is fast and can be completed for all districts in about two weeks?**	Yes. The Contractor will need to contact District personnel before performing services in the area as a courtesy of letting staff know what is going on in their areas. Coring and FWD Testing shall be done under the same lane closure.
4.	G. Technical Requirements	23	*"The FWD shall be used to measure deflection data on the selected lanes of proposed projects at a 0.1-mile interval (or other*	One direction unless otherwise noted. One centerline mile needs 10 FWD tests.

			intervals after review and approval by M&R), on the evaluated lanes for each traveling direction to obtain a representative coverage of the entire roadway." **Is the FWD to be done at 0.1-mile intervals in "each" traveling direction in the selected lanes or one direction? One centerline mile needs 10 or 20 FWD tests?**	
5.	H. Falling Weight Deflectometer (FWD) Testing	24	*"The Falling Weight Deflectometer (FWD) will be used to measure deflection data on the selected lanes of asphalt projects. Testing will be performed in one direction of travel. Testing will be spaced at 0.1-mile intervals (or other intervals after discussion with NDOT), on the evaluated lane in the traveling direction to obtain a representative coverage of the entire roadway. The FWD data collection system should be linked to GPS coordinates."* **How many drops per location and what load levels are required for FWD testing?**	Refer to AASHTO R32-20 for calibration. One drop sequence at each location. Record Load Level 2 and 3.
6.	I. Pavement Core and Soil Samples	24	*"Cores shall be obtained from the same lane from which the FWD was performed, alternating from 6-foot to 9-foot offsets from the centerline."* **In the Attachment A - Projects List, some cores are required to be taken on the shoulders. We assume**	FWD Testing will not be required for the ramps or shoulders. Cores will be taken from the same lane as the FWD Testing is performed.

			that FWD is not required on the shoulders, and it is implied by the statement that the travel lane cores should be taken from the same lane FWD testing was performed on. It is also our assumption that FWD testing will only be done in travel lanes and not on ramps or shoulders. Please confirm.	
7.	I. Pavement Core and Soil Samples	24	*"On composite roadways, a 2.5-inch pavement core shall be collected using a 2.75-inch diameter barrel"* **The coring diameter of 2.5" is too tight to extract soil samples with a hand auger. Can 4" diameter cores be obtained on all the coring locations?**	Yes. A 4" Core diameter is acceptable.
8.	I. Pavement Core and Soil Samples	24	**Do the core samples need to be delivered to NDOT? Or just the photos?**	Just photos of the cores as shown in Exhibit A of the RFP.
9.	J. Ground Penetrating Radar (GPR) Service	24	*"GPR testing shall be performed in the same lane as coring and FWD testing"* **Is the GPR testing required in both travel directions?**	No. GPR Testing will be performed in one direction and in the same lane as the Coring and FWD Services.
10.	J. Ground Penetrating Radar (GPR) Service	24	*"Running GPR reports of bituminous layer thicknesses averaged and synchronized with mile posts."* **If the pavement is composite, just the thickness of the bituminous overlay is required?**	GPR Testing is not required on composite Portland cement concrete pavements. GPR Testing is only required on full-depth asphalt to include bituminous sand, hydrated lime slurry stabilization of asphalt, and full-depth reclamations. We want to get down to the bottom of the asphaltic bound materials.
11.	J. Ground Penetrating Radar (GPR) Service	24	*"GPR testing shall be performed in the same lane as coring and FWD testing"* **Since the cores are**	Yes. GPR Testing results will be measured at the midpoint of the traveled lane. GPR readings are taken at 6-inch intervals and averaged at a length of 50 ft segments.

			supposed to be staggered (alternating from 6-foot to 9-foot offsets from the centerline), is GPR needed for both wheelpaths of the testing lane?	
12.	J. Ground Penetrating Radar (GPR) Service	24	*"Running GPR reports of bituminous layer thicknesses averaged and synchronized with mile posts"* **Please elaborate on what averaging over MP means. Is there a specific MP interval over which the thicknesses are to be averaged?** **Do we need to locate the physical mile markers on the side of the roads, or are there Straight-Line Diagrams (SLD) available for referencing mileposts (MP)?**	The bituminous layer thickness is measured at the midpoint of the traveled lane. GPR readings are taken at 6-inch intervals and averaged at a length of 50 ft segments. The intent of using a Mile Reference Post is to have a physical location of where the data was taken. Because the Cores are taken at the Mile Reference Post and the thickness of the core is used to calibrate GPR results, the GPR report must be synced to match the physical Mile Reference Post. See the attached Exhibit D – GPR Data and Plot.
13.	V. G.	23	*In the technical section it says "The FWD shall be used to measure deflection data on the selected lanes of proposed projects at a 0.1-mile interval (or other intervals after review and approval by M&R), on the evaluated lanes for each traveling direction to obtain a representative coverage of the entire roadway." This contradicts the first line of second paragraph of Section H (Page 24) "Testing will be performed in one direction of travel". Is FWD testing required in each travel lane direction? Or just in one direction of travel?*	FWD Testing is only required in one lane in only ascending or descending direction. The language in the contract refers to a divided highway. There are no projects with divided highways that require FWD Testing in this contract.
14.	V.H.	24	*What is the desired FWD load plan? Is there a desired drop weight and number of drops at each location?*	Refer to AASHTO R32-20 for calibration. One drop sequence at each location. Record Load Level 2 and 3.
15.	V.H.	24	*Is it acceptable to use a mobile operation for the FWD testing on projects where it*	It is recommended to follow the appropriate traffic control method listed on the Project

			states a flagging operation is needed? FWD testing takes approximately 1-2 minutes per drop location, so a mobile operation would be more efficient, as it would: reduce the size of flagging zones required throughout the project, limit the zones to core locations only, reduce the closed portion of roadway, and reduce the impact on roadway traffic. Additionally, it would reduce the time to setup and tear down the flagging zone.	List. A Mobile Operation Plan may be used for FWD Testing on low-volume 2-Lane roads (less than 1,000 ADT)
16.	V.J.	24	*How many lines of data need to be collected for the pavement layer thicknesses? Is a single line of GPR data in the center of the travel lane adequate (collected concurrently with FWD)? Or does NDOT require two lines of data, one in each wheel path (collected separately from FWD)?*	The GPR data is measured at the midpoint of the traveled lane. GPR readings are taken at 6-inch intervals and averaged at a length of 50 ft segments. GPR and FWD testing can be done separately.
17.	V.K.	24	*Will the Kickoff meeting be a virtual or in person meeting?*	That will be determined between the Contractor and M&R when it is scheduled.
18.	V.G.	23	In the technical section it says "*The FWD shall be used to measure deflection data on the selected lanes of proposed projects at a 0.1-mile interval (or other intervals after review and approval by M&R), on the evaluated lanes for each traveling direction to obtain a representative coverage of the entire roadway*." This contradicts the first line of second paragraph of Section H (Page 24) *"Testing will be performed in one direction of travel"*. Is FWD testing required in each travel lane direction? Or just in one direction of travel?	See answer for Question No. 13.
19.	V.H.	24	What is the desired FWD load plan? Is there a desired drop weight and number of drops at each location?	See answer for Question No. 14.

20.	V.H.	24	Is it acceptable to use a mobile operation for the FWD testing on projects where it states a flagging operation is needed? FWD testing takes approximately 1-2 minutes per drop location, so a mobile operation would be more efficient, as it would: reduce the size of flagging zones required throughout the project, limit the zones to core locations only, reduce the closed portion of roadway, and reduce the impact on roadway traffic. Additionally, it would reduce the time to setup and tear down the flagging zone.	See answer for Question No. 15.
21.	V.I.	24	If a field crew takes a 2.5-inch core from a full depth asphalt portion of roadway by mistake (an asphalt patch for example), is an additional 4-inch pavement core still required?	The field crew will need to take a core outside of the patched area as close to the Mile Reference Post as possible. The core report should note the location of the core taken. Example: core taken at 73.1 instead of 73.0
22.	V.J.	24	How many lines of data need to be collected for the pavement layer thicknesses? Is a single line of GPR data in the center of the travel lane adequate (collected concurrently with FWD)? Or does NDOT require two lines of data, one in each wheel path (collected separately from FWD)?	See answer for Question No. 16.
23.	V.K.	24	Will the Kick off meeting be a virtual or in person meeting?	That will be determined between the Contractor and M&R when it is scheduled.

This addendum will be incorporated into the solicitation.