

NHDOT SPR2 PROGRAM

RESEARCH PROGRESS REPORT

Project # SPR 42372G	Report Period Year 2023 <input type="checkbox"/> Q1 (Jan-Mar) <input checked="" type="checkbox"/> Q2 (Apr-Jun) <input type="checkbox"/> Q3 (Jul-Sep) <input type="checkbox"/> Q4 (Oct-Dec)	
Project Title: Advancing Subsurface Investigations Beyond the Borehole		
Project Investigator: James Degnan Phone: (603) 226-7826 E-mail: jrdegnan@usgs.gov		
Project Start Date: June 30, 2021	Project End Date: September 30, 2023	Project schedule status: <input type="checkbox"/> On schedule <input type="checkbox"/> Ahead of schedule <input checked="" type="checkbox"/> Behind schedule

Brief Project Description:

Geotechnical site characterization sometimes fails to fully characterize the below-ground bedrock surface and hydrologic conditions using conventional borings. By combining passive Horizontal-to-Vertical Spectral Ratio (HVSr) seismic and multi-frequency electromagnetic induction geophysical methods and boring data analysis, a more thorough and accurate representation of geotechnical subsurface conditions can be produced. This effort will contribute to the overall goal of improving efficiency of the Department by reducing the disruption work plans, forced revision of designs, and cost increases from schedule delays, claims, or change orders.

Progress this Quarter (include meetings, installations, equipment purchases, significant progress, etc.):

The second data release, with GPR and EM data, is published online at <https://doi.org/10.5066/P98LMISO>. An abstract for the 72nd Highway Geology Symposium (HGS) has been approved by HGS. A draft HGS manuscript was submitted to Krystle Pelham for coauthor and cooperator review and has been through USGS peer review. The manuscript will be submitted for internal approval when it returns from HGS review.

Items needed from NHDOT (i.e., Concurrence, Sub-contract, Assignments, Samples, Testing, etc...):

Updates on any further HGS manuscript deadline changes or extensions.

Anticipated research next three (3) months:

Report presented and published with HGS.

Circumstances affecting project:

HGS changed the final deadline for manuscripts from 7/31 to 7/14. Meeting this deadline with internal approvals will be a challenge.

Tasks (from Work Plan)	Planned % Complete	Actual % Complete
Task 1. Compile and assess literature and sites	100	100
Task 2 Collect geophysical data	100	100
Task 3 Conduct analysis	100	100

Barriers or constraints to implementing research results:

Meeting new HGS deadline with an internally approved product.