

NHDOT SPR2 PROGRAM

RESEARCH PROGRESS REPORT

Project # SPR 42372J		Report Period: Year 2021 <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: Concrete Slab Jacking			
Project Investigator: Chris Turgeon Phone: 603-448-8951		E-mail: Christopher.L.Turgeon@dot.nh.gov	
Project Start Date: 4/22/2021	Project End Date: 12/31/2022	Project schedule status: <input checked="" type="checkbox"/> On schedule <input type="checkbox"/> Ahead of schedule <input type="checkbox"/> Behind schedule	

Brief Project Description:

NHDOT's concrete road sections are a chronic problem to our maintenance Districts. The prime culprit for these conditions is poor quality base materials. The deteriorated base conditions result in excessive vibrations and noise from vehicles driving over these roadway sections. Surficial repair is virtually pointless and driver satisfaction is zero.

Discussions with URETEK, a company that specializes in subsurface injection of polyurethane foam for jacking and sealing purposes, indicate that it is feasible to treat the existing bases through the pavement. Polymer injection would fill the void spaces under the concrete slab. Expectations are similar to the benefits of cement-stabilization of soils, but without the need for total reconstruction of the roadway. In an atmosphere of pavement preservation, a reasonable initial cost to improve these roadways will save money long term, while improving its service to the public.

The purpose of this project is to evaluate the effectiveness of injectable polyurethane foam (such as that used for subsurface jacking applications) as a means of stabilizing unconstructed roadway base materials.

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

Preliminary test readings have been taken of background vibration. Tweaks are being made to the seismograph for when actual collection initiates. Communications have been progressing with URETEK about probable costs and schedule.

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

Tuned seismograph. Waiting on final polyurethane costs from contractor.

Anticipated research next three (3) months:

Once the seismograph is tuned, pre-injection readings will be recorded. Contractor is anticipated to perform the injection.

Circumstances affecting project:

Product prices are currently high and may affect the budget but preliminary estimates seem to fall within. It was decided to work with another bureau to request injection services with the goal of a better price.

Tasks (from Work Plan)	Planned % Complete	Actual % Complete
Schedule initial technical data	50	50
Complete polyurethane foam injection	0	0
Schedule post-injection tech data collected by the ride quality van	0	0

Barriers or constraints to implementing research results

None anticipated