



University Transportation Research Center
RFP Cover Sheet

Title: Energy Harvesting on New Jersey Roadways
Proposal Number: 2018-03
Sponsor: NJDOT
Date Issued: July 8, 2018
Pre-Proposal Meeting: On request by Aug. 8
RFP Due at NJDOT: August 27, 2018 4:00 PM
RFP Closing Date: August 27, 2018

If you plan to apply:
(research.bureau@dot.nj.gov, 609-530-5637) with any questions.

If you plan to submit a proposal through UTRC, please notify us by email at peickemeyer@utrc2.org.
Also please indicate whether you are open to teaming up with faculty at other universities on this project.

Proposal submission guidelines:
When you apply, insert the UTRC cover sheet, <http://www.utrc2.org/resources>.

Note that matching funds will not be made available from UTRC for this project.

Please visit the NJDOT Research Website for important information about this RFP

http://www.state.nj.us/transportation/refdata/research/research_procurement.shtm



**New Jersey Department of Transportation
Bureau of Research
RESEARCH PROJECT
Request for Proposal
2018-19 Program**

Project Title: Energy Harvesting on New Jersey Roadways
Posting No.: 2018-03
Date of RFP Announcement: 7/18/2018
Closing Date: 8/27/2018

Proposals must be prepared in accordance with NJDOT's *Supplemental and Proposals guidelines*. Please visit <https://www.state.nj.us/transportation/refdata/research/guidelines.shtm> for the most current version.

1 - RESEARCH PROBLEM STATEMENT AND OBJECTIVES

1.1 Problem Statement

Recent research shows that transportation infrastructure is a possible source of renewable energy. NJDOT is looking for the possibility of implementing these technologies on its roadway infrastructure. The roadway infrastructure is exposed to light, heat and vibrations under normal working conditions, which make it an ideal candidate for energy harvesting. Advance research in pavements also shows the possibility of energy harvesting in terms of embedded innovative materials and mix-designs. These technologies may also be useful to collect traffic information, monitor pavement structure condition, and potentially redirect the collected energy to various transportation infrastructures, such as snow removal, electricity, utility and data management.

1.2 Research Objectives

The objectives of this study are identify potential technologies/methodologies/materials for energy harvesting on NJDOT roadways and a feasibility study (include cost, durability, maintenance, environmental and safety impacts) of such technologies for application on NJDOT roadways. Further, implementation of the research outcomes.

At minimum the proposed research shall include

Phase1: Complete literature review and feasibility study for applications on NJDOT roadways. An interim report should be submitted after completion of this phase. The tasks may include literature search, identification of various methods and feasibility study which may include lab testing.

Phase2: Implementation of research outcomes in phase1 on NJDOT roadways as directed by the NJDOT Technical Advisory Panel (TAP). A preliminary implementation plan should be provided during the proposal stage and a detailed plan will be required at the beginning of this phase.

Note: *Phase2* will start only after NJDOT Bureau of Research approval of *Phase1*.

1-3. Type of Contract.

It is proposed that if the Issuing Office enters into a contract because of this Request for Proposal (RFP), it will be a **Cost Reimbursement, Deliverable-Based** contract containing the Standard Contract Terms and Conditions.



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2 - BUDGET and CONTRACT TIME

The **TOTAL** project budget shall not exceed **\$350,000** and the *Phase I* budget shall not exceed **\$150,000**. The PI must provide the anticipated research study duration based on the proposed tasks. Consideration should be given to potential impediments so that adjustments are incorporated into the schedule minimizing the need for time extensions. Contract time shall include sufficient time for the procurement of subcontractors, as well as no less than three months for Final Report review and acceptance. Please be advised that going forward, new task orders having permissible justification will be allowed no more than one time extension with the advent of 2 CFR 200.

A 24 - 30 month total project duration is preferred.

3 - Oral Presentations. Oral presentations may be requested as part of this RFP. If required, you will be notified by the Bureau of Research to schedule your oral presentation. They will be held at NJDOT headquarters in Trenton, NJ, attended by the Technical Advisory Panel, and be limited to no more than an hour, including time for questions and answers.

4 – DEADLINE

Proposals (10 single-bound copies) are due at the NJDOT Bureau of Research no later than **4:00 p.m. on August 27, 2018**

Approximate Start Date: 11/15/2018. The official start date is the date that the Bureau of Research obtains a signature from the Assistant Commissioner. This date can be utilized for project schedule preparation in the proposal.

5 – CONTACTS

Interested parties shall send all questions related to this RFP to the Bureau Manager by sending an e-mail to Research.Bureau@dot.nj.gov or by phone (609-530-5966). Questions on this topic **shall not** be directed to any Research Project Manager, Research Customer, or any other NJDOT person. All questions must be received **on or before 7/28/2018 in order to be answered.**

A pre-proposal meeting may be scheduled with interested parties upon the request of *more than one* Institution of Higher Education. **This must be requested on or before 8/8/2018.**



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PROPOSAL DELIVERY INSTRUCTIONS:

For private, paid messenger services such as Federal Express, DHL, UPS, etc., or for hand-carried deliveries:

RFP No.2018-03 PROPOSAL-NJDOT
New Jersey Department of Transportation
Bureau of Research
1035 Parkway Avenue
Trenton, New Jersey 08625-0600

For U.S. Postal Service mail:

New Jersey Department of Transportation
ATTN: Manager, Bureau of Research
P.O. Box 600
Trenton, New Jersey 08625-0600