

Region 2
University Transportation Research Center



RFP Cover Sheet

Title: Develop Manufactured Topsoil Mixes to Support the Growth of Pollinator-Friendly Vegetation in Roadside Settings

RFP Number: C-16-02

Sponsor: New York State Department of Transportation

Date Issued: January 29, 2018

Final Proposal Due at UTRC: April 16, 2018 (COB)

Please submit electronically through the UTRC online submission system at

<http://www.utrc2.org/welcome-utrc-ii-submission-system>. Do not send electronic copies directly to NYSDOT.

Fourteen hard copies are also required within one week of electronic submission. You may send the hard copies to:

Ms. Deborah Mooney
Head, Research & Policy Studies Section
Statewide Planning Bureau | Policy & Planning Division
New York State Department of Transportation
50 Wolf Rd, 6th Floor, Albany, NY 12232

RFP Closing Date: April 16, 2018

If you plan to apply:

Please contact Penny Eickemeyer at peickemeyer@utrc2.org to let us know you are assembling a proposal. We will make sure you receive any additional information that becomes available about this RFP.

Proposal submission guidelines:

Please submit your technical and budget proposals electronically to UTRC. All proposals must include the UTRC cover page, <http://www.utrc2.org/resources>.

Budget forms can be downloaded at <http://www.utrc2.org/sites/default/files/budget-Template.xls>

Funding available:

Up to \$500,000 (Exclusive of RFCUNY and UTRC administrative fees) is available from NYSDOT.

For questions about this proposal, please contact:

Deborah Mooney, Deborah.Mooney@dot.ny.gov

For questions about budget preparation, please contact: Penny Eickemeyer,
peickemeyer@utrc2.org

New York State Department of Transportation
Request for Proposals
SPR # C-16-02: Develop Manufactured Topsoil Mixes to Support the Growth of
Pollinator-Friendly Vegetation in Roadside Settings
January 29, 2018

RESEARCH PROBLEM STATEMENT

Federal Highway Administration (FHWA) regulations (Section 130 of the Surface Transportation and Uniform Relocation Assistance Act of 1987 (STURRA) require that at least one-quarter of one percent of funds expended for a landscaping project must be used to plant native wildflowers.¹ A landscaping project is defined as “an action taken as part of a highway construction project or as a separate action to enhance the esthetics of a highway through the placement of plant materials consistent with a landscape design plan.”²

In addition, concerns about declining pollinator populations in North America have increased interest in investigating and promoting habitat that can support pollinators. Research has shown that the maintenance of native wildflowers on roadsides is beneficial to pollinators; roadsides with native plants have been found to support many species of both bees and butterflies. Roadsides form one of the most extensive networks of linear habitats. They extend across a variety of landscapes, providing an opportunity to increase pollinator habitat, offering forage for food and breeding or nesting opportunities, and aiding in the dispersal of pollinators by linking fragmented habitats. The restoration and management of roadside habitat can benefit a broad suite of pollinators.

NYSDOT’s current standard topsoil mixes have been found lacking in their ability to reliably support the establishment of native, pollinator-friendly plant populations. There is a need to develop topsoil specifications that can facilitate the establishment and subsequent growth of pollinator-friendly plant material.

OBJECTIVE(S)

The objective of this research is to identify manufactured soil mixes that support the growth of native (ideally local ecotype), pollinator-friendly vegetation in roadside settings.

PROPOSED RESEARCH TASKS

Task descriptions are intended to provide a framework for conducting the research. NYSDOT is seeking the insights of proposers on how best to achieve the research objectives. Proposers are expected to describe research plans that can realistically be accomplished within the constraints of available funds and research period. Proposals must present the proposers’ current thinking in sufficient detail to demonstrate their understanding of the issues and the soundness of their approach to meeting the research objectives.

Possible Tasks:

Task 1: Using the U.S. Environmental Protection Agency’s (EPA) Ecoregions of North America for NY State (Levels III and/or IV) as a starting point, determine an appropriate number of representative subdivisions of the state to serve as a basis for further study.

¹ FHWA (1988) *Roadside Use of Native Wildflower Planting Requirement*.
(https://www.environment.fhwa.dot.gov/ecosystems/vegmgmt_rdus3_1.asp)

² H.R. 2 — 100th Congress: Surface Transportation and Uniform Relocation Assistance Act of 1987.
www.GovTrack.us. 1987. November 15, 2017 <<https://www.govtrack.us/congress/bills/100/hr2>>

Task 2: Partner with soil scientist(s) from the United States Department of Agriculture – Natural Resources Conservation Service (USDA-NRCS) to identify unique predominant soils within the ecoregional subdivisions determined in Task 1. Identify as many unique soils in each subdivision as appropriate.

Task 3: Find reference sites containing pollinator-friendly, native plant communities (annual, biennial and perennial herbaceous material) in each of the unique soils identified in Task 2.

Task 4: Obtain any available information (e.g. NYSDOT record plans) regarding disturbance and subsequent re-vegetation at each reference site.

Task 5: Take sufficient soil samples at each reference site identified in Task 3 to fully describe the entire soil profile. Use USDA-NRCS *Soil Survey Field and Laboratory Methods Manual: Soil Survey Investigations Report No. 51 Version 2* as the protocol for taking the soil samples and creating test pits. Test and document results for all soil horizons. Also, document root depth, fractures (clayey soils), site hydrology (ground and surface water analysis), slope and aspect. Testing parameters should include, but not be limited to:

Testing Parameters

Electrical Conductivity and Soluble Salts	pH
Soil Fertility and Humic Acid	Cation Exchange Capacity (CEC)
Particle-Size Distribution	Soil Morphology
Bulk Density	Structure and Consistence
Water Retention	Water Flow
Infiltration	Percolation Rate
Soil Stability, Dispersion and Slaking	Base Saturation
Atterberg Limits	Plasticity Index

Task 6: Document the plant species at each reference site identified in Task 3. Include nativity and wetland indicator status of each plant identified. Collect seeds from the plant material growing on the site during the appropriate date/season for each plant. If no seeds are collected, document why.

Task 7: Compare the soil test results from the reference sites identified in Task 3 with the corresponding parameters of the predominant USDA-NRCS soil type identified in Task 2. For reference sites where the test results and USDA-NCRS parameters do not match, compare the soils, document the results and proceed to Task 8. For reference sites where the soils match, proceed to Task 9.

Task 8: Repeat Tasks 3, 4, 5, 6 and 7 until reference sites matching each of the corresponding predominant USDA-NRCS soil type identified in Task 2 have been found.

Task 9: Develop soil specifications for each reference site. Develop different specifications for each soil horizon, as appropriate.

Task 10: Work with suppliers (soil manufacturers) to manufacture sample quantities of the soils identified in Task 9. Test to verify that each meets the corresponding specification. The purpose is to demonstrate that each can be cost-effectively manufactured. Document any complications or concerns which might affect commercial viability.

Task 11: Prepare a final report that details the accomplished tasks. The report should include specifics on the soil testing, plant species, specifications and efforts to work with suppliers.

RESEARCH PRODUCTS

- Maps of reference sites and test pits locations selected in task #3 above. Provide GPS database compatible with NYSDOT's GIS program (electronically) for reference sites and test pits.

- All test results for each reference site.
- Lists of plant species found at each reference site. Include genus and species and, if applicable, common name, nativity and wetland indicator status.
- Soil specifications (including for various horizons). Include gradation, pH, organic content, nutrient content (macro and micro), soluble salts and cation exchange capacity (CEC).
- Report summarizing new soil compositions including methods of manufacturing or acquiring.
- Final report summarizing the research and results, including all tasks, deliverables, findings, recommendations and an implementation strategy, as applicable. Final reports are to adhere to **Attachment A, Requirements for the Final Report** (page 6).

URGENCY / EXPECTED BENEFITS

This project has been initiated based on the policy guidance from the Federal Government, Federal Highway Administration (FHWA) and New York State on the importance of creating and maintaining pollinator habitat in state rights-of-way. The 2015 New York State Pollinator Task Force was formed with the goal of increasing pollinator habitat on NY rights-of-way.

RESEARCH PERIOD

The research period will be approximately thirty-six (36) months.

FUNDING

\$500,000 has been budgeted for this project, exclusive of administrative fees. New York State believes this is a reasonable estimate for the total cost of the work being requested.

The net cost to New York State is one of the selection criteria. When compared to competing proposals, a proposal that requires fewer New York State dollars will receive a higher score on the cost component of the selection criteria. The value of New York State funds required could be reduced through efficiencies (fewer hours per task and / or lower cost per hour) or through cost-sharing where other funds substitute for New York State funds.

Proposals with a New York State cost over the budgeted amount will also be considered, provided the New York State cost, exclusive of administrative fees, does not exceed the budget estimate by more than 10%. (Note: Cost-sharing funds may increase the total project cost further.)

If a sufficient number of potential Principal Investigators indicate in writing that they believe the research cannot be reasonably conducted within these funding constraints and there are only a limited number of proposals submitted within the funding constraints, New York State reserves the option of not proceeding with the work or revising the budget estimate and issuing a new Request for Proposals. Potential Principal Investigators who believe the budget estimate is unreasonable should write to:

Deborah L. Mooney, SPR Program Administrator
 Head, Research and Policy Studies Section, 6th Floor
 Statewide Planning Bureau, Policy and Planning Division
 New York State Department of Transportation
 50 Wolf Road, Albany, NY 12232

SPECIAL NOTES

- **Proposals are due by close of business, [Monday, April 16, 2018](#).** This Request for Proposals (RFP) is being offered to the University Transportation Research Center (UTRC) members only. UTRC members must submit both a technical and a cost proposal through the UTRC research consortium RFP online submission system. The receipt of an electronic PDF copy of the proposal by NYSDOT on or before the above due date is satisfactory, providing hard copies follow within a week.
- **Fourteen (14) hard copies** of the proposal should be provided.
- NYSDOT and the City University of New York Research Foundation (RF-CUNY) on behalf of the UTRC have an executed University Transportation Research Consortium Agreement, Contract #C030793, in place. RF-CUNY/UTRC is the prime consultant for NYSDOT Task Assignments executed under this prime contract agreement. All sub-consultants (UTRC consortium members included) and sub-contractors performing work under the prime consultant contract shall be bound by the same required contract provisions as the prime Consultant. All sub-agreements between UTRC and a sub-consultant or sub-contractor shall include all standard required contract provisions, and such agreements shall be subject to review by the State.
- Publicity, including any material, data, information or analyses other than Confidential Information, that derive from activity under the Project; State materials; the State's name or other references to the State or NYSDOT ("Project Information"), in any document or forum disclosed to the public, is subject to the publicity and disclaimer terms and conditions of the NYSDOT/RF-CUNY UTRC prime contract agreement #C030793-01, Supplemental Agreement #1, Article 8, Section 8.05, Publicity, and Article 2, Section 2.03, Disclaimer.
- Proposals should indicate direct and indirect costs, hourly rates and hours by task, travel costs, and material costs to assist NYSDOT in understanding how the total cost for the work was estimated. The winning proposal will result in a fixed cost contract based on the details provided in a supporting detailed budget.
- Please provide a Budget Chart which shows for each task the deliverable and cost. Task headings in the Budget Chart are to match the scope task headings.
- Please include a Gantt Chart, showing the duration (start to finish) for each task in terms of months (i.e. Month 1, Month 2, etc) since the actual start date is an estimate. This can be combined on one page with the Budget Chart.
- If the proposal involves a joint venture or sub-consultants, it must be clear how tasks will be distributed or shared in the scope of work.
- The Principal Investigator is required to submit quarterly project status reports to the NYSDOT Project Manager, as specified in the Task Assignment.
- The Principal Investigator is required to submit all project task deliverables, first, in draft formats for review and comment by the NYSDOT Project Manager and Technical Working Group (TWG). The Principal Investigator is required to revise draft task deliverables, based upon comments, as needed, and re-submit to the NYSDOT Project Manager for review. Upon acceptance by the NYSDOT Project Manager, the Principal Investigator is required to submit draft task deliverables to the NYSDOT Project Manager in final formats, as specified in the Task Assignment.

- NYSDOT will provide the researcher with information (e.g. NYSDOT record plans) regarding disturbance and subsequent re-vegetation at each reference site.
- The final report on the results of the research is to contain, at a minimum, the information described in **Attachment A, Requirements for the Final Report.**
- Principal Investigators should be familiar with and follow the requirements of New York State regarding the *Compliance Procurement Lobbying Law* and consultant contract procurement. Information can be found on the NYSDOT website under Business Center / Doing Business with NYSDOT / Consultants / Non-Architectural Engineering Information / Active Solicitations:
<https://www.dot.ny.gov/main/business-center/consultants/non-architectural-engineering/active-solicitations>
- **The designated contact for this solicitation is Deborah L. Mooney.**
Questions seeking clarification on the RFP will be accepted up to three (3) weeks prior to the due date for proposals and should be e-mailed to: Deborah.Mooney@dot.ny.gov

CRITERIA FOR SELECTION

- **Expertise / Understanding / Approach (Weight: 65%)**
Expertise: What is the extent of the relevant expertise of the Principal Investigator? What is the extent of the relevant expertise of others who will be involved in the research?

Understanding of the Problem: Does the proposal reflect an understanding of the problem and its relevance to New York State? Does the proposal reflect an understanding of existing data and the current state of knowledge in New York State?

Approach: Is the proposed approach clear, especially in how it will build upon and enhance the state of knowledge in New York State? Will it yield the deliverables called for in the RFP? Does the approach show insight that will lead to results that will sufficiently assist New York State in addressing the problem? Is the proposed approach practical given the schedule and total budget? Will the proposed research draw upon all critical sources of pertinent information?
- **Investigator's Previous Experience with Similar Projects (Weight: 15 %)**
Successful completion of previous projects by the Investigator(s) will be considered. These projects should be in the area of expertise required for successful completion of this project, such as wildflower establishment and topsoil specification writing.
- **Cost to New York State (Weight: 20%)**
The lower the New York State cost, the greater consideration a proposal will receive.

Requirements for the Final Report

Copies of Final Report – **Twenty-five (25)** color, hard copies of a bound, final report are required at the completion of the research study. An electronic PDF copy of the final report is required, as well. In addition to the final report, a one-page document or research brief, summarizing the project and project findings, shall be provided for technical transfer purposes. This is required in PDF format only.

Required Organization for the Final Report

Title Page (front cover) - that contains:

- The research number (C#) assigned by the Research & Policy Studies Section;
- The title of the research study as stated in the Task Assignment (contract);
- The words “Final Report;”
- The date (month & year) the final report is completed;
- The name(s) of the Consultant(s) / Principal Investigator(s), along with the name(s) of the organization(s) they represent and their address(es);
- A color photograph or design on cover to add professional appearance; and,
- If the final report has a security classification, it shall be noted on the title page.

Disclaimer (inside cover) - as follows:

DISCLAIMER

This report was funded in part through grant(s) from the Federal Highway Administration, United States Department of Transportation, under the State Planning and Research Program, Section 505 of Title 23, U.S. Code. The contents of this report do not necessarily reflect the official views or policy of the United States Department of Transportation, the Federal Highway Administration or the New York State Department of Transportation. This report does not constitute a standard, specification, regulation, product endorsement, or an endorsement of manufacturers.

Form DOT F 1700.7 – complete the standard form used throughout the country to summarize federally-funded transportation research

Table of Contents

Executive Summary - a non-technical summary of the research and its findings

Introduction – a discussion of the problem, its background, and a concise history of research previously completed on the topic, and a discussion of what NYSDOT policies, procedures, and practices are currently in place related to the research topic.

Research Method – a description of the methods used in conducting the research

Findings and Conclusions – a discussion on the analysis of the data (findings) and the conclusions reached based on the findings. Suggestions for additional research, if appropriate, would appear in this section.

Statement on Implementation – a brief discussion on what would need to occur to introduce the results into practice, and a discussion on possible technology transfer activities

Appendices – as appropriate