

Region 2  
University Transportation Research Center



RFP Cover Sheet

**Title:** Biological Control Targeting Invasive Black and Pale Swallow-worts

**RFP Number:** C-18-01

**Sponsor:** New York State Department of Transportation

**Date Issued:** March 8, 2018 (Revised for weighting of selection criteria March 19, 2018)

**Final Proposal Due at UTRC:** April 27, 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.

Sixteen 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 27, 2018**

**If you plan to apply:**

Please contact Penny Eickemeyer at [peickemeyer@utrc2.org](mailto: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 \$450,000 (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](mailto:Deborah.Mooney@dot.ny.gov)

**For questions about budget preparation, please contact: Penny Eickemeyer,**  
[peickemeyer@utrc2.org](mailto:peickemeyer@utrc2.org)

**New York State Department of Transportation**  
**Request for Proposals**  
**SPR # C-18-01: Biological Control Targeting Invasive Black and Pale Swallow-worts**  
**March 8, 2018**

**RESEARCH PROBLEM STATEMENT**

Swallow-wort species in the genus *Vincetoxicum* (henceforth referred to as swallow-worts) are aggressive, non-native invasive vines that establish in New York State Department of Transportation's (NYSDOT's) rights-of-way (ROWs) and, ultimately, invade other areas of concern. Swallow-wort's rapid growth and expansion causes negative impacts to the environment, public safety, and NYSDOT maintenance and operations. More specifically, the growth and expansion of swallow-wort interferes with the following NYSDOT policies:

- Landscape Stewardship Policy to promote biodiversity,
- Promotion of roadside re-vegetation with native plant species,
- Improvement of pollinator habitat along NYS roadsides,
- Protection and enhancement of the environment, by:
  - Increasing habitats for threatened and endangered flora and fauna species on state highway ROWs,
  - Increasing habitats for native fauna, including pollinators, and
  - Reducing herbicide use.
- Increase safety and security of the transportation system,
- Reduction of NYSDOT roadside maintenance costs.

Current practices to control swallow-wort include the application of herbicides or mechanical removal. These practices strain NYSDOT maintenance budgets and can have negative ecological side effects. The ability of these control measures to successfully eradicate expansive infestations of swallow-wort is low, and regrowth is likely.

Finding a practical, cost-effective and ecologically sound solution to control swallow-wort populations has the potential to:

- Increase safety and security of the transportation system: prevent highway signs from being obscured by the dense, high growth habit of this plant; improve sight distance and safety where the plant is present,
- Reduce the need for ongoing, routine NYSDOT roadside maintenance, such as mowing,
- Promote consistency with NYSDOT's Landscape Stewardship Policy goal to promote biodiversity, protect threatened and endangered species and promote pollinator habitat,
- Reduce potentially objectionable herbicide use, and yield cost savings when compared with labor-intensive control methods such as excavation and removal.

If a host-specific agent is found to be successful in reducing or eradicating swallow-wort populations, NYSDOT can consider using this control method on state highways. This information can also: be shared with other state agencies; result in increased cost savings; and avoid the potential negative side effects of chemical treatments.

**OBJECTIVE(S)**

The project objective is to reduce the transportation, economic and ecological impacts of swallow-worts on highway ROWs by furthering research efforts to assess the utility of biocontrol agents. The project research will be limited to the following biocontrol agents: *Hypena opulenta* (a defoliating moth), *Eumolpus asclepiadeus* (a root-feeding beetle), *Abrostola asclepiadis* (a defoliating moth) and *Euphranta connexa* (a seed destroying fly).

## **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:**

1. Coordinate and collaborate with appropriate government agencies (U.S. federal and state, and foreign) and research universities (domestic and foreign) to secure permissions, permits, and/or approvals to obtain and research the biology, impact and host range of potential biological control agents of swallow-worts.
2. Sign a contract with a laboratory (domestic or foreign, such as the Center for Agriculture and Biosciences International (CABI) in Switzerland) to maintain or expand captive colonies of potential biological control species in preparation of future importation for US domestic testing and evaluation.
3. Conduct full host range testing following standard protocols and best management practices for ascertaining biological safety to non-target native species.
4. Petition the United States Department of Agriculture (USDA)/Animal and Plant Health Inspection Services (APHIS) and State agencies to obtain necessary permits and approvals to conduct experimental releases of potential biological control agents of swallow-worts in New York State (NYS). This includes review by the Technical Advisory Group (TAG).
5. Identify and gain access to test and control sites (locations) in New York State for the release of potential biological control agents of swallow-worts. Selected sites should represent the suite of environmental conditions where swallow-worts are most problematic.
6. Conduct benchmark ecological assessments of the abundance and diversity of plants and insects at test and control sites prior to release of biological control agents. Compile and document the findings of the analyses. Documentation may include an interim report for publication.
7. Following successful host-range testing, expand the potential biological control agents developed in Step 2 to support populations needed for field testing. Maintenance and expansion of insect colonies may entail the development/refinement of mass rearing methods specific to individual species.
8. Undertake field testing by importing and releasing the potential biological control agents at the test and control sites (locations) identified in Step 5. Researchers shall take the necessary precautions to ensure that the biological control agents are clean of other organisms (e.g. parasitoids and/or other pathogens). Provide information to NYS iMap Invasives so these locations can be uploaded into the database.
9. Assess the potential biological control agents' abilities to control swallow-worts growth and spread by conducting demographic analyses to measure fitness costs, relative stem densities, cover, and other plant metrics. Quantify population parameters for the potential biological control agents (fecundity, survival, rates of spread) at test sites post-release. Evaluate changes in the abundance and recovery of competing native and non-native vegetation and insects. Conduct statistical analyses on the efficacy of the biological control agent(s) and evaluate and adjust protocols as needed. Documentation may include an interim report for publication.
10. Write a final report summarizing the research project for publication.

## **RESEARCH PRODUCTS**

- Technical petition documentation
- Environmental Documentation (Environmental Assessment or Environmental Impact Statement, to comply with NEPA and SEQR, depending on what is required)

- All necessary permits including, but not limited to, United States Department of Agriculture (USDA) permit, NYSDOT highway work permit, and other agency permits, if required
- GPS mapping (shapefiles) of test sites and control sites
- Benchmark ecological assessments of native plants and insects at test sites prior to the release of the biological control agents
- Monitoring data and reports on the biological control agents impact on swallow-worts at all test site locations after their release
- Quarterly project status reports, based on a calendar year basis
- Annual interim technical reports summarizing project progress
- Presentations to the NYS Invasive Species Council (ISC or Council), NYS Invasive Species network (e.g. Partnerships for Regional Invasive Species Management (PRISMs), etc.) and an Environmental Landscape Architecture Training Series (ELATS) training session to DOT employees
- 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**

Swallow-worts are aggressive invasive perennial weeds that out-compete native plants for resources by forming dense patches in a wide variety of habitats, smothering restoration plantings. Swallow-worts contain a compound that is toxic to humans and other mammals. Swallow-worts are closely related to milkweeds and have been shown to have negative impacts on monarch butterfly populations. Monarchs readily lay eggs on swallow-worts, but all larvae that hatch on the plant perish.

Infestations by swallow-worts are increasing in New York State. Investment in biological control agents has been shown to be one of the most cost-effective steps the State and the Federal Highway Administration (FHWA) can employ to control swallow-worts. NYSDOT invests a significant amount of funds annually, both mechanically and chemically, controlling invasive plant species. Finding an effective biological control agent can dramatically reduce those costs. Moreover, many researchers feel that current control measures are short-term and will have collateral effects on native species and surrounding habitats. Researchers indicate that the only viable option for the long-term reduction in swallow-wort populations is the use of biological control agents.

### **RESEARCH PERIOD**

The estimated research period is three (3) years, or 36 months.

### **FUNDING**

**\$450,000** has been budgeted for this project, exclusive of RFCUNY and UTRC 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, 6<sup>th</sup> 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, [Friday, April 27, 2018](#).** This Request for Proposals 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.
- **Sixteen (16) 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 as to 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, 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.
- 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** (page 6).
- 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](mailto:Deborah.Mooney@dot.ny.gov)

## CRITERIA FOR SELECTION

- **Expertise / Understanding / Approach** (Weight: 60%)
  - 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: 20%)
  - 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 invasive species, biocontrols and biological monitoring.
- **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** – **Sixteen (16) 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