



Request for Proposals

Date: August 21, 2019

Synthesis of Practices for Management and Enhancement of Terrestrial Roadway Ecology

Deadline: 13:00 ET, October 3, 2019

A. INTRODUCTION

Canadian roadways provide for the movement of people, goods and services through rural and urban spaces. The location, design and operation of roads can be highly influential to the character, function and livability of adjacent communities and land uses. In both urban and rural settings roadways have strong linkages with the natural environment. Fish, wildlife, birds, waterbodies, vegetation communities and local air and water quality are affected by roads and vehicular traffic. Roads can alter habitats, increase wildlife mortality, and facilitate the spread of invasive weeds. The concept of “road ecology” is relatively new and its primary focus is on the potential effects of roadways on natural landscapes and processes as an element of sustainable transportation systems.

Previous TAC initiatives have included the development of the *Synthesis of Environmental Management Practices for Road Construction, Operations and Maintenance Roadways* (2014), the *Canadian Guide to Greener Roads* (2015) and the *Migratory Birds Practices and Operational Guidance Documents* (2019). The information presented in those documents offers guidance on achieving environmental protection and compliance objectives for road construction and operations. While the subjects of habitat protection, roadside vegetation management and “holistic landscaping” of rights-of-way are addressed, the information tends to be high level and guidance is oriented to meeting compliance requirements. A current gap in knowledge exists as to where and how these emerging notions and practices have been applied in recent years, how successful they have been, and at what difference in effort and cost from more conventional approaches.

TAC’s Environmental Issues Management Standing Committee (EIMSC) has initiated this study to fill that gap, with several related areas of design and management being the focus: what practices are being used successfully and cost effectively to minimize adverse effects of roads on ecosystems, and to support the conservation or enhancement of native plant and animal biodiversity? Additional key considerations and context for this study would include road user safety, regulatory compliance, and visual aesthetics. There is a growing body of directly related information (e.g. *Technical Manual for Maintaining Roadsides for Pollinators Establishment, Restoration, Management and Maintenance - A Guide for State DOT Managers and Staff*; several current Road Ecology projects and partnerships through Montana State University’s Western Transportation Institute; US National Academy of Sciences Committee on Effects of Highways on Natural Communities and Ecosystems; and, outputs from the Staying Connected Initiative). However, there is little guidance that is specific to Canada’s transportation system and regulatory environment, and relevant to both typical (rural and urban) and alternative/seasonal (winter and ice) roadways.

B. SCOPE

Road ecology is a complex subject that can be considered very broadly in spatial, temporal, and thematic scope. To achieve the objectives of this project, a multi-disciplinary team will be required to conduct literature reviews and other research, and to collect and compile information from academia and practitioners who are at the forefront of this type of work in North America and internationally. The

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study team will draw from this information to identify best available technologies and beneficial management practices at a local scale (i.e. applicable for spot locations and short sections of major urban road or rural highway) for the management and enhancement of terrestrial roadway ecology. Aquatic components, such as fish passage and beaver management, are already well studied and will therefore not be addressed in this study. The focus of this study will be on emerging and evolving practices specific to terrestrial roadway ecology. Roadside vegetation management, pollinators, and wildlife movement together represent a tightly coupled nexus that require thoughtful approaches to roadway planning, design, and operation.

The scope of this project is to address:

- Rural, major urban and seasonal roadways (i.e. highways, parkways, skeletal and arterial roads, ice and winter roads)
- Roadside vegetation management
- Pollinator habitat enhancement opportunities along roadways
- Interactions of wildlife (mammals, reptiles, amphibians) with roadways i.e. foraging along and movement across roadways, and potential means of conflict avoidance and mitigation
- Regulatory compliance obligations e.g. species-at-risk, migratory birds, weed control
- Road safety requirements and considerations
- Public perception of visual aesthetics
- Feasibility and operational considerations
- Cost considerations
- Decision-making criteria for planning, design, and operational mitigation options

Key tasks will include, but are not limited to:

- Conduct a literature scan of typical (rural and urban), alternative/seasonal (winter and ice) roadway and innovative roadway ecology practices
- Contact and solicit case study information from North American academia and practitioners (agency staff, stakeholder groups and specialists) to identify and elucidate best available technologies and beneficial management practices and considerations for the management of roadway ecology
- Conduct analysis and synthesis of the compiled information by a multi-disciplinary team to provide insight to matters of planning, design, operational feasibility, cost and risk management
- Prepare a compendium of current and emerging practices relating to roadway ecology

C. DELIVERABLES

The major project deliverable will be a synthesis of practices for the management and enhancement of roadway ecology. The report will contain an executive summary, table of contents, list of figures, list of tables, introduction, background, compilation of detailed findings and references. All information compiled throughout the project should be included, with appendices containing content not appropriate for inclusion in the body of the report.

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Other deliverables will include:

- Case study scan summary document giving an overview of typical (rural and urban) and seasonal/winter/ice roadway ecology practices.
- Monthly reports on study progress, task and schedule status, and any perceived challenges.
- In-person meeting presentation PowerPoint decks to be presented and circulated to the PSC, inclusive of presenters notes.
- A PowerPoint deck describing the work undertaken, results and overview of the 100% draft report. The deck will be presented in-person by the consultant's lead team member to the Project Steering Committee, Environmental Issues Management Standing Committee and Environment Council. The deck is to be circulated to the PSC, inclusive of presenters notes.
- An approximately five-page primer providing a high level synopsis of the key information about the report subject, to be published by TAC.
- Learning material PowerPoint deck suitable for a one-hour webinar on the topic, to be delivered by the consultant through TAC's webinar platform after the project is completed.
- A table summarizing comments received during PSC review of deliverables, tracking who submitted the comment and specifying how the comment was addressed. This table is to be updated after each subsequent commenting period.

The consultant will provide electronic files for all text, tables and figures, including:

- Microsoft Word version of all deliverables.
- Adobe InDesign (as applicable) and PDF versions of the complete final draft report, inclusive of text, graphics, appendices, etc.
- All report graphics (e.g. tables, figures, photos) in Adobe Illustrator or Adobe Photoshop format, making all associated text accessible and editable by TAC. Embedded graphics in Word documents are not acceptable. The consultant should provide credit for each graphic, and confirm appropriate permissions for publication.
- Spreadsheets in Microsoft Excel format.
- Three to four high-quality colour photographs in TIF, JPG or EPS format, no less than 2400 pixels wide by 1800 pixels high, for use on the report cover. The consultant should provide credit for each photo, and confirm appropriate permissions for publication.

Deliverables must be submitted in English and must adhere to the guidelines outlined in TAC's *Project Handbook*.¹ The Handbook contains an electronic template, pre-set with TAC format standards including fonts, headers, footers and references. Consultants must adhere to the template standards, and variations will be subject to TAC approval. Moreover, the selected proponent must adhere to TAC's *Publication Guidelines*² and *Pooled Fund Project Guidelines*³.

¹ <http://tac-atc.ca/sites/tac-atc.ca/files/site/doc/projects/docs/handbook-authors.pdf>

² https://www.tac-atc.ca/sites/tac-atc.ca/files/site/doc/projects/docs/tac_publications_guidelines_2015-01-01_en.pdf

³ <https://www.tac-atc.ca/sites/tac-atc.ca/files/site/doc/projects/docs/pfp-guidelines.pdf>



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D. SCHEDULE

The consultant should propose a project schedule that will deliver a high-quality, comprehensive report in a reasonable timeframe taking into account minimum expected milestones as outlined below.

Milestone	Date
Proposal due	October 3, 2019
Contract award	October 25, 2019
Initial meeting with PSC (Teleconference)	Early November, 2019
Submission of case study scan summary document	January 6, 2020
Teleconference	Late-January, 2020
Submission of 50% draft report	March 13, 2020
In-person meeting with PSC during TAC 2020 Spring Technical Meetings (Ottawa)	April 1-7, 2020
Submission of 90% draft report	June 30, 2020
Teleconference	Late July, 2020
Submission of 100% draft report, primer and webinar learning materials	August 21, 2020
Presentation of 100% draft report to the PSC, the EIMSC and the Environment Council during the TAC 2020 Fall Technical Meetings (Vancouver)	September 24-28, 2020
Submission of final report	October, 2020

The PSC, made up of project funding partners, wishes to be an active participant in the project development by reviewing draft deliverables, with the consultant expected to address all comments. A minimum of 15 working days should be allocated for PSC members to review interim drafts prior to meetings or teleconferences. At least four weeks should be provided for PSC, EIMSC and Environment Council members to review and provide comments on the 100% draft report. It is required that the consultant Team Lead (i.e. Consultant Project Manager/Coordinator) be present in room for the spring and fall project meetings. The consultant team is responsible for giving final in-person presentations to the listed committees over multiple days during the technical meetings. Teleconference meetings (minimum of two) are to be scheduled between in-person meetings, with an allowance for additional teleconference meetings as required.

E. LEVEL OF EFFORT

This project's maximum budget is \$100,000 plus applicable taxes. A detailed cost breakdown will be requested at the beginning of the project. Invoices will be processed only for completed and approved items, with 10% of each invoice payment to be held back until final deliverables have been accepted by the Project Steering Committee and approved by the Environment Council. A minimum value of \$45,000 worth of work is to be completed and invoiced by March 31st, 2020.

F. PROPOSAL REQUIREMENTS

The following key proposal elements are reflected in the Evaluation Criteria shown in Appendix A.



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Project understanding – Proposals will demonstrate a clear understanding of the project’s objective/scope and describe challenges that might be encountered in its execution.

Methodology – Proposals will describe an approach to satisfy key objectives and create deliverables, including major tasks, resources to be applied, major sources of information, planned analyses and means for developing recommendations. Although the working language for this project is English, the consultant is expected to review French literature as part of the study.

Project schedule and resources – Proposals will show person-hours budgeted for each team member by task, and a schedule with key milestones enabling required approvals. Proposals will identify a total cost with fees broken down by task and team member, as well as travel or other expenses. A fee breakdown should also consider the need to invoice for all work completed in the preceding 12 months by March 31 of each year. Proposals stating a total cost greater than the specified maximum budget will be disqualified.

Consultant team – Proposals will identify a project leader and supporting multi-disciplinary team members (including subconsultants) appropriately qualified in transportation engineering, landscape ecology, wildlife biology, fisheries biology, botany and forestry, and will include résumés (no more than four pages per team member) showing experience on similar projects. Proposals will highlight the project team’s experience with TAC projects and processes, if applicable.

References – Proposals will identify three organizations for which the proponent has completed projects of a similar scope and/or size, including the organization’s address and the name and telephone number of an individual familiar with the proponent’s work.

Conflict of interest declaration – Proposals will include a disclosure statement including information on possible sources of significant financial or organizational conflicts of interest in conducting the project. For example, under certain conditions, ownership of the proposing organization, other organizational relationships or proprietary rights and interests could be perceived as jeopardizing an objective approach to the project. Proponents are asked to disclose any such circumstances and identify effective mitigating strategies.

G. PROPOSAL SUBMISSION

One **electronic copy** of the proposal (ideally in Adobe Acrobat format) shall be delivered to the undersigned **no later than 13:00 ET on October 3, 2019**. TAC reserves the right to interview any or all candidates prior to selection of a preferred consultant.

The proposal’s main body should not exceed 10 single-sided pages using one-inch margins, single-spaced text and 12-point type. Proposals may include additional pages for a covering letter, detailed



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pricing form, project schedule chart, conflict of interest declaration, organizational diagram and résumés, though total proposal length should not exceed 50 pages.

H. PROPOSAL EVALUATION

Proposals will be evaluated by the PSC based on criteria provided in Appendix A. When top proponents are within five points of each other, based on average PSC scores out of 100, it will be deemed a tie and resolved by PSC majority vote.

I. PROJECT ADMINISTRATION

TAC's Project Manager will act as liaison between the PSC and the consultant for this project. Together with the PSC, the Project Manager will be responsible for reviewing project deliverables and ensuring that the consultant successfully accomplishes the objectives set out herein. All technical and administrative enquiries should be addressed to the undersigned.

TAC will administer an online collaborative platform to enable documentation sharing for this project. The working language for this project is English.

A contract for consulting services must be established with the consultant before work can begin.

For more information, contact:

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Appendix A: Evaluation Criteria for Project Proposals

Evaluation Criteria	Weight
Understanding of project's scope and desired deliverables	25
General approach and methodology	25
Adequacy of resources to ensure quality within required timeframes	25
Qualifications and experience of consultant team and project coordinator, and their proven competence in related work	25
<i>TOTAL ></i>	<i>100</i>