ILLINOIS CENTER FOR TRANSPORTATION

REQUEST FOR PROPOSAL #25-04

Replacing the Illinois Traffic Projection Tool

PROJECT INFORMATION

Funds: $400,000 total (includes a required 25% cost share of $100,000 from proposing agency)

Estimated Contract Term: 24 months

Projected Start Date: 8/16/2025

Posted Date: 04/01/2025
Close Date: 04/30/2025 at 11:59 p.m. CST

Submit Proposals to:
ICTProjectManagement@illinois.edu

BACKGROUND

The Illinois Department of Transportation's current traffic tool uses VBA code to access database back end to provide a simple and compound projection based on historical data. The previous Illinois Traffic Projection Tool was utilized by both the central office and district staff regularly. Since the original tool stopped accepting traffic count data in 2021, the requests for creating a replacement for it have been numerous. This proposed research will enable IDOT to meet future traffic reporting requirements efficiently, addressing technical challenges posed by outdated technology in the current tool.

The tool supports our Highway Performance Monitoring System future annual average daily traffic reporting as well as simple traffic studies. Cost savings are expected from reduced manual forecasting efforts and more efficient project designs. In addition, life-cycle benefits, include extended infrastructure durability through precise traffic forecasting, could be realized while minimizing environmental impacts and enhancing safety for users via optimized transportation planning.

Therefore, to improve forecast accuracy, leading to better infrastructure planning and resource allocation, IDOT would like to upgrade its existing traffic projection tool. The updated tool shall allow users the ability to view historical traffic counts within a segment of roadway. In addition, it shall advance policy to include enhanced traffic management and compliance with federal reporting standards. IDOT is not looking to replace the current travel demand model that has been developed as part of this project, not using artificial intelligence or machine learning to develop travel demand models.

OBJECTIVE

The objective of this study is to upgrade IDOT's existing traffic projection tool. The outcome of the project shall provide a means for IDOT staff to create future-year traffic count projections in addition to making it possible to review historical traffic count data on any given roadway or HPMS segment. The new tool shall streamline the process of long-range traffic forecasting and allow for more accurate projections, directly benefiting IDOT by reducing the manual effort required to update data and process forecasts.

RESEARCH TASKS AND REQUIRED DELIVERABLES

To improve accuracy in highway planning and construction projects, benefiting the state of Illinois in terms of mobility and infrastructure sustainability, the following tasks are required in updating the traffic projection tool.

Task 1 — Replace the current projection tool that utilizes historical traffic count data to project future year traffic count numbers up to 25 years beyond the current year.

a) The tool must utilize traffic counts on existing key routes or HPMS sections. The current tool has historical counts loaded within an Access database going back to the 1970s.
b) The tool shall provide a means to calculate weighted AADT averages for multiple roadway segments, such as HPMS sections.
c) The tool shall have a simple interface to select the type of forecast (key route or HPMS), projected year, and necessary data fields to generate the projection.

d) The tools shall include the following: a chart of the actual data along with the projection lines, a table of actual data points along with the projected data points.
e) The tool should allow for future updates to projected years without requiring complex and a simple process developed to update the tool with AADT data points annually.

Task 2 — Final report

The final report shall include details on the updating of the tool. This may include leveraging Microsoft-based technologies such as Excel, Power BI, SQL Server, and Azure for smoother data retrieval and management.

INSTRUCTIONS FOR SUBMITTING A PROPOSAL

The proposal shall be prepared in accordance with the guidelines presented in Appendix A.

By submitting a proposal, potential principal investigators are acknowledging they have read and understand the IDOT-ICT PI responsibilities and Guidebook and terms and requirements under the current IDOT-ICT Intergovernmental Agreement (IGA).

Technical questions regarding the research project or RFP procedures should be submitted to the ICT Project Management team via email at ICTProjectManagement@illinois.edu within 14 days of the posting date. Technical questions and answers will be posted on ICT's website as they are received.

SPECIAL CONDITIONS FOR REVIEWING PROPOSALS AND AWARDING ICT FUNDS

Please note that the following conditions will be applied when reviewing all received proposals and in awarding ICT funds:

1) Preference will be given to Illinois universities (both public and private) when multiple proposals from this solicitation are reviewed and have identical scores.

2) The award of this project is contingent upon the availability of funds at the time of award.

APPENDIX A:
Guidelines for Preparing Proposals for the Illinois Center for Transportation

Please use the following format when submitting Illinois Center for Transportation proposals for consideration. Proposals should be a maximum of 15 pages (excluding the cover page, itemized budget, budget justification and optional appendices) with a minimum 11pt font, standard margins, and in an Adobe PDF file format.

1. Cover Page

Please include the following information on the proposal cover page:

- RFP Number (e.g., RFP #25-XX)
- Proposal title
- Proposed Principal Investigator (and co-investigator, if any), along with associated organizations and email addresses.

2. Research Plan

Clearly and concisely address the proposed approach for solving the issue described in the problem statement. The research plan should be subdivided into the following sections:

(a) Introduction, Including Research Objective

Introduce the proposal and provide a concise overview of the research approach. Outline the objectives of the research project and explain the questions that will be answered by the research.

(b) Research Approach/Work Plan

Include details of the research project and strategies to accomplish the project objectives. Itemize the tasks and provide clear explanation of the research approach, deliverables and identify the research team lead for each task.

(c) Anticipated Research Results

State the anticipated research results and deliverables.

(d) Expected Implementable Outcome(s)

All IDOT-ICT research is expected to be implementable. Describe what implementable outcomes (e.g., specification, test, recommendations, etc.) are anticipated that will facilitate implementation of the research results.

3. Qualifications and Accomplishments of the Research Team

Identify who will perform the research and provide a brief explanation of each researcher’s qualifications and related research efforts.

4. Other Commitments of the Research Team

Outline the other commitments of the research team to demonstrate the ability to fulfill the commitments of the proposal.

5. Facilities and Equipment

Describe the facilities and equipment available to conduct the research.

6. Timeline Requirements

Include a timeline of the research project's tasks in this section. Describe the required time to complete the research, including final report preparation, ICT's editing process, review of the report by the Technical Review Panel and publication of the report. Please note the final report must be submitted in Section 508 compliant format at least three months before the project's end date. Below is an example of a project timeline.

Project Milestones (Assuming an August 16 Start Date, and a 24-month project)		2025					2026											2027							
		8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8
1	**Kickoff Meeting**																									
2	**PI conducts Project Task X**																									
3	**PI conducts Project Task XX**																									
4	**PI conducts Project Task XXX**																									
5	**PI conducts Project Task XXXX**																									
6	**PI conducts Project Task XXXXX**																									
7	**PI writes DRAFT report**																									
8	**PI Submits Final DRAFT report to ICT for editing**																									
9	**ICT Preliminary editing phase**																									
10	**PI/TRP editing phase**																									
11	**Final editing phase**																									
12	**Report published**																									
	(Quarterly Progress Reports Due)																									
	(TRP Meetings)																									

7. Itemized Budget

Provide an itemized project budget including the cost of personnel, consultants, subcontracts, equipment, materials, travel, indirect costs and cost share.

A minimum of 25% of the total project budget must be cost share from the proposing agency. Under the IGA effective July 1, 2024, the indirect cost rate used for institutions with a federally negotiated F&A rate cannot exceed 42.97% of the modified total direct costs. If the proposing agency does not have a federally negotiated rate, a 10% de minimis rate must be used.

Subaward costs from outside the proposing agency cannot exceed 50% of the total project budget without prior approval.

A part of the cost share requirement may be fulfilled using unrecovered indirect costs. Any proposal submitted by an agency outside the University of Illinois system that plans

to use unrecovered indirect costs as cost share must submit a request for approval to IDOT/Federal Highway Administration. More information on this letter will be provided if a proposal is selected for funding.

Please utilize ICT's budget templates when submitting a proposal: UIUC Budget Template and Subawardee Budget Template.

8. Budget Justification

Include a budget justification that explains the itemized budget in narrative form. The budget justification shall provide sufficient detail so there is a clear understanding of how the project costs were calculated and why they are necessary. The narrative discussion of the project cost categories and related line items should be presented in the same order as they appear in the itemized budget. If the project requires the purchase of equipment, out-of-state travel, or out-of- or in-state conference registration/attendance expenses, please list and explain here.

*Under the terms of our IGA, equipment is defined as any tangible or intangible product, having a useful life of **two years or more**, an acquisition cost of at least **$500**, and solely purchased for use in the IDOT-ICT project. Equipment purchased on IDOT-ICT projects is to be returned to IDOT at the conclusion of the project, unless otherwise agreed upon. Equipment purchases on IDOT-ICT projects must have a **signed** pre-approval.*

*Travel expenses should include, but are not limited to, travel to TRP meetings, travel for testing / sampling, etc. Any out-of-state travel expenses and **any** conference expenses charged to the project must have a **signed** pre-approval.*

Inclusion of equipment and travel expenses in the project budget and workplan does not meet the requirement for pre-approval. Signed, pre-approval request forms must be submitted prior to purchase of any equipment or travel meeting the above criteria to be considered allowable expenses on the project. Expenses not meeting this requirement may not be reimbursed.

9. Cooperative Features (if appropriate)

If assistance or cooperation is required from other agencies, public or private, to complete this proposed research, describe the plans for securing this assistance.

10. Appendices (if appropriate)

References or any additional materials deemed necessary may be provided here.