

# PROPOSAL

## Pooled Fund Project for Development Of a Research Project Tracking System Updated – January 4, 2021

### Background

Each state in the U.S. has a transportation research program, typically managed by designated staff in the state DOT (or equivalent agency). While these programs vary substantially in size, complexity, staffing level, and resource availability, there are certain needs that are generally common to all programs. One of these needs is a tracking system for active and completed research projects. The tracking system can be used for numerous functions, including (but not necessarily limited to):

- Tracking of active projects
  - A centralized source of key information for each project (name of PI and project manager, contact information, start date, planned completion date, budget, account number, etc.)
  - A centralized source of up-to-date status information for each project (status of tasks and deliverables, work accomplished, funding spent/remaining, etc.)
  - Flagging of issues/problems (behind schedule, work versus spending, problems encountered, intervention required, etc.)
- Tracking of research implementation
- Tracking of submissions and approvals (initial work plan and budget, revisions to work plan and budget, deliverables, etc.)
- A historical record of completed projects
- Reporting
  - Generating program-wide reports for research program management
  - Generating periodic progress reports (e.g., quarterly reports) for individual projects
- A repository for key project-related documents (proposals, work plans, budgets, meeting agendas and minutes, interim deliverables, final reports, etc.)

In 2013, the Kentucky Transportation Cabinet (KYTC), in cooperation with the Kentucky Transportation Center (KTC) at the University of Kentucky, initiated an SPR project to develop and implement a web-based project management tool for research projects. This tool would provide easily-accessible, up-to-date information on project accomplishments and milestones, the current status of each project, and quick links to key project documents and deliverables. In

addition to tracking the progress of active projects, the system would track and report the implementation of research results, following project completion. KYTC and KTC formed a Study Advisory Committee, developed functional requirements for the Research Project Tracking System (RPTS), hired a web developer/programmer, and developed the system, going live in July of 2015. The final report for that SPR project can be accessed here:

[https://uknowledge.uky.edu/ktc\\_researchreports/1678/](https://uknowledge.uky.edu/ktc_researchreports/1678/)

Over the past four years, KTC has continually enhanced the online system through a series of task orders issued to the original web developer/programmer. The result is a highly-functional system that is easy to use and meets most of Kentucky's needs. It is accessible from any device with Internet access, and it works with virtually any web browser. However, because the system was internally developed using a single programmer, it is not easily updated to more state-of-the-art software packages, and Kentucky's long-term ability to maintain and upgrade the system is highly dependent on the continued availability of the original developer. Thus, it is Kentucky's desire to redevelop the system from scratch, using the most up-to-date software and industry standards and a stable, well established software development firm.

The primary barrier to redeveloping the RPTS from scratch is the cost. For Kentucky to bear this cost alone would be challenging, perhaps even a show-stopper. However, Kentucky is not the only state that could benefit from such a system. So, we are proposing to carry out this development as a pooled-fund effort. We believe it is possible to develop common functional requirements that will meet the needs of multiple states and then use those functional requirements to guide development of a flexible, state-of-the-art system. With funding from multiple states, it should be possible to hire a top-notch developer without placing a financial burden on any individual state.

### **Scope of Work**

By necessity, this project will be conducted in three phases. The success (or lack thereof) of Phase 1 will determine whether the project ceases at that point or continues into Phase 2.

#### **Phase 1: -- Development of Common Functional Requirements**

For Phase 1, a project steering committee will be formed, with representation from all participating states. KYTC intends to task the Kentucky Transportation Center with facilitating the development of common functional requirements for the new RPTS. Through web-based meetings and face-to-face meetings (if feasible) with the steering committee members, this effort will attempt to develop consensus on the functionality that the system must have to meet the states' needs. Functionality that is desired (but not essential) will be identified as well. There may also be cases where an individual state (or a couple of states) want functionality that is of no interest to the remaining states. In such situations, a couple of options will be presented and considered by the state partners:

1. Go ahead and include this functionality in the core system, with the understanding that only one or two states will use it; or
2. Plan to provide this functionality as an add-on module, to be funded separately by the states that will use it.

The product of Phase 1 will be a Functional Requirements Document (FRD) for the new RPTS. Each partner state will be involved in the review and approval of this document.

The end of Phase 1 will be a decision point for the pooled-fund project. If, at this point, we have a sufficient number of states wanting to proceed into Phase 2, we will proceed. If not, the project will end at this point. In any case, each state will decide if they want to proceed with Phase 2. No state will be compelled to participate in (or provide funding for) Phase 2 if they choose not to participate.

### Phase 2 – Procurement of Software Developer and Development of RPTS

The first step in Phase 2 will be development of a Request for Proposals (RFP) or Request for Qualifications (RFQ) to be used to solicit a software developer for development of the RPTS. Upon approval of the RFP/RFQ by the project steering committee, it will be advertised/distributed, and proposals/qualifications will be received. The project steering committee will review the proposals/qualifications and will select the vendor to develop the RPTS. A contract will be developed, specifying the work to be performed, system specifications, schedule, budget, acceptance and payment terms, software ownership and licensing requirements, training requirements, and methods of settling any conflict that may arise. The contract will also include a requirement for ongoing system support for a specified time period (to be determined by the steering committee). That support will be provided in Phase 3, described below.

Once the contract has been approved and signed by both parties, the RPTS development will begin. Periodic status reports, demonstrations, and testing will be scheduled to ensure consistent oversight by the steering committee members. The development will proceed until the system is completed and accepted by the steering committee. At that point, each participating state will receive a license for unrestricted use of the system and training for system users (per the details spelled out in the contract).

### Phase 3 – Ongoing System Support

Once the system has been delivered and is operational in each of the participating states, there will be a need for the system developer to provide ongoing support. This will include bug fixes, minor enhancements, and general technical assistance and follow-up training. A contract will be established (possibly a continuation of the original development contract) for this ongoing support. Each participating state will contribute to the cost of this support, thus minimizing the cost to each state.

In the event that major enhancements are desired by one or more states, it may be necessary to establish a contract modification (with appropriate funding) to accomplish those enhancements. Decisions of how to fund such enhancements will depend on whether the enhancements will benefit all states or just one or two states. Such decisions will be made at the time by the project steering committee.