Illinois Center for Transportation

PRINCIPAL INVESTIGATOR RESEARCH GUIDEBOOK

July 2017

CONTENTS

DEFINITIONS/ACRONYMS

- **ATREL (Advanced Transportation Research and Engineering Laboratory)**—ICT's main headquarters, which houses the engineering laboratory, located in Rantoul, Illinois.
- **BR (Bureau of Research)**—bureau of IDOT that is responsible for administering the State of Illinois's transportation research program.
- **CEE (Department of Civil and Environmental Engineering)**—University of Illinois at Urbana-Champaign department of which ICT is a part.
- **FHWA (Federal Highway Administration)**—agency within the U.S. Department of Transportation that conducts research and provides technical assistance to state and local agencies in an effort to improve safety, mobility, and livability, and to encourage innovation
- **ICT (Illinois Center for Transportation)**—liaison between researchers and IDOT. ICT administers IDOT's research efforts.
- **IDOT (Illinois Department of Transportation)**—department of the Illinois state government that is responsible for sustaining, strengthening, expanding, and maintaining a multi-modal transportation system that includes roads, railways, airways, waterways, canals, and terminals such as airports, railway stations, bus stations, warehouses, and intermodal facilities.
- **IPW (Implementation Planning Worksheet)**—document used to organize implementation efforts for a research project.
- **NCTE (No-Cost Time Extension)**—time extension for a project that does *not* include any increases to the project's budget.
- **PI (Principal Investigator)**—person in charge of the project from the research side.
- **QPR (Quarterly Progress Report)**—federal reporting requirement for all ICT/IDOT projects; each project's PI completes and submits an online form.
- **R27-###**—number assigned to a research project by ICT.
- **R27-SP##**—the SP in this project's number signifies that it is a special project. These projects cannot exceed $36,000 in total project costs and do not last longer than 10 months.
- **RFP (Request for Proposal)**—annual research proposal requests posted to ICT's website, which are open to all who wish to submit a proposal.
- **TAG (Technical Advisory Group)**—determines the research needs and priorities of the nine different areas of transportation research that IDOT/ICT have identified.
- **TAG Chair (Technical Advisory Group Chair)**—responsible for leading semi-annual TAG meetings.
- **TRP (Technical Review Panel)**—group of subject-matter experts who work closely with the PI to provide technical guidance while also ensuring that IDOT's needs are met. The TRP consists of IDOT and Federal Highway Administration staff, as well as representatives from industry and other state agencies as needed.
- **TRP Chair (Technical Review Panel Chair)**—provides coordination between the TRP and the PI.

INTRODUCTION

ICT's Project Management team is available to help answer any questions or concerns about project administration. Please contact ictprojectmanagement@illinois.edu for help in any of the following areas:

- Project budget
- Project work plan
- Budget increase and time extension requests
- Travel and equipment requests
- Final reports
- Meeting requirements
- Quarterly Progress Reports (QPRs)
- Minute taking (email ictprojectmanagement@illinois.edu with meeting time and location)

Illinois Center for Transportation Contacts

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REQUIREMENTS OF A RESEARCH PROJECT

GENERAL REQUIREMENTS

- Research will be conducted as mutually agreed upon by the PI and TRP chair and based on the accepted proposal.
- TRP meetings are required to be held at least every six months.
- QPRs are required to be submitted every three months.
- The TRP chair and PI should maintain an open line of communication about project status, project deliverables, and all other relevant information that may affect the project.
- The project's final report is submitted to ICT's editor three months before the project end date to allow time for editing, TRP review, revision, and posting/publishing.

START OF A PROJECT

Work Plan and Budget

A work plan, budget (proposal), and budget justification is created by the project's PI. For more information on these items, please refer to the Work Plan and Budget Preparation section and the Implementable Research Outcomes section at the end of this document.

- The TRP chair reviews and approves the project's work plan and budget.
- ICT helps facilitate this process between the TRP chair and PI.

- An official cover sheet for the work plan must be signed by the TRP chair and BR's bureau chief. ICT provides this cover sheet.

Kickoff Meeting

The PI and TRP chair schedule the project's kickoff meeting within two weeks of the project start date.
- This meeting is an opportunity for the PI and the TRP to review the work plan.
- At the kickoff meeting, the IPW is reviewed by the PI and the TRP chair. Parts of this form will have already been completed by the TRP chair prior to the kickoff meeting, but it will be updated by the PI and TRP chair throughout the project. It is the responsibility of the TRP chair to make sure all parties necessary for implementation are informed of the research and to promote implementation within IDOT.

TRP Meetings

TRP meetings should occur quarterly or as necessary, with a face-to-face meeting held at least every six months. The kickoff meeting is the first of these meetings and typically occurs within two weeks of the project start date. At these meetings, the PI is expected to answer questions that the TRP may have regarding the research being conducted for the project. The PI is also expected to provide updates on the project's status at each meeting. Another key element of a TRP meeting is the IPW. This worksheet should be reviewed and updated at every TRP meeting by both the TRP chair and PI.
- When scheduling a meeting, the organizer should email ictprojectmanagement@illinois.edu with the date, time, and location (2 weeks' notice is appreciated). ICT will schedule a project manager to attend the meeting.
- Video conferencing (Go-To-Meeting) is an option for meetings. ICT can help facilitate setup of Go-To-Meeting, if requested.

Quarterly Progress Report

A QPR is required for each project. The PI is contacted by ICT at the end of each quarter (March, June, October, December) with instructions on how to complete this required document. To allow ICT staff adequate time for review and compilation of QPRs, submittal deadlines have been established as shown in the table below.

QPR Submittal Deadlines

Quarter	Period of Performance	QPR Submittal Date
Quarter 1	January 1 – March 31	No later than April 14
Quarter 2	April 1 – June 30	No later than July 14
Quarter 3	July 1 – September 30	No later than October 14
Quarter 4	October 1 – December 31	No later than January 14

Semi-Annual Evaluations

Semi-annual evaluations are required for each project. The PI is contacted by ICT with instructions on how to complete the evaluations. A more complete and detailed set of instructions on how to fulfill the semi-annual evaluation requirement is available on the ICT website.

Research

The PI conducts the research as agreed on with the TRP. The PI is also responsible for notifying the ICT project manager and the TRP chair if any problems, delays, or adverse conditions develop during the project.

Project Report

A report is required for each project.

- A final research project report, in accordance with ICT report guidelines, is required to complete the project. Reports should fulfill project objectives set forth in the work plan, show adequate documentation, and be presented clearly and concisely, the maximum page length is 75 pages (~35,000 words), not including appendices.
- ICT report guidelines are available on the ICT website. Complying with these guidelines in required because it minimizes publication delays.
- ICT sends an email reminder six months and four months prior to the project end date to remind PI's about the project report due date.

END OF A PROJECT

Three months before the project's end date, the PI must submit the project's completed report to ICT for editing (*before* submitting it to the TRP). The three-month editorial process is conducted in three phases as follows:

- PRELIMINARY EDIT PHASE (Month 1): The PI submits the complete report to ICT Project Management (ICTProjectManagement@illinois.edu) in MS Word format (a report template can be downloaded here). The PI should follow the ICT report formatting guidelines. Reports that do not follow ICT guidelines will be returned to the PI for resubmission. A comprehensive technical edit of the report will be performed and returned to the PI for review and revision. Additional useful documents and forms are on the Report Guidelines and Documents page.
- PI/TRP EDIT PHASE (Month 2): The PI reviews the ICT technical edits, accepts/rejects changes, addresses all comments, and forwards the edited report to the project's TRP chair for review. The TRP has one month to complete their review and provide comments.
- FINAL EDIT PHASE (Month 3): When the report is approved by the TRP chair, the PI forwards the final report and the Final Report Approval Form to ICT Project Management for final editorial review. Reports submitted without the TRP approval form will not be accepted.

NOTE: The PI should begin to write this report (at least) 6 months before the due date of the project. The three-month report editing and review process must be built into the project timeline. For example, if the project ends on December 31, the report should be sent to the ICT editor no later than September 30.

FORMS

BUDGET INCREASE

If the project requires an increase in budget resulting from a change in the work plan, the TRP chair or PI should contact ICT staff as soon as the need for an increase is known. ICT staff works with the PI to facilitate and review completion of the appropriate documents, which can be found on the Forms and Guidelines page of the ICT website. These documents are explained in detail below.

Important Items to Note
- The allowed percentage of the budget increase is based on the original ICT Executive Committee approved budget for the project.
- Budget increases of 15% or less of the original approved budget can be approved by the Bureau Chief of the Bureau of Research (BR).
- Budget increases more than 15% of the original approved budget must be approved by the ICT Executive Committee.

For any *budget increase*, the PI completes the following steps:
1. Fills out the appropriate sections of the IDOT Time Extension & Budget Change Request Form, clearly stating the reason(s) for the increase (and additional time requested, if applicable)
2. If the budget increase includes the purchase of equipment, an Equipment Purchase Request Form should also be completed at this time (see Equipment section below).
3. Prepares and submits a budget, budget justification, and work plan for the funds being requested (please use the same format as original budget).

For any *budget increase*, ICT completes the following steps:
1. Attaches the budget for the requested funds to the IDOT Time Extension & Budget Change Request Form.
2. Submits all documents for approval to BR.
3. After the budget increase is approved, performs all necessary internal steps to execute the increase and updates all necessary financial tracking measures.

NO-COST TIME EXTENSION (NCTE)

TRP chairs or PI's interested in requesting a NCTE should contact ICT staff as soon as the need for an extension is known. ICT staff works with the PI to facilitate completion of the appropriate forms and documents, which can be found on the ICT website.

Ideally, time extensions are requested at least six months in advance of the original end date of the project.

Time extensions are generally not granted solely for the purpose of allowing additional time for report writing, editing, and review. Completed draft reports must be submitted to ICT at least three months prior to the end date of the project (see End of a Project section on the previous page).

For any *no-cost time extension*, the PI completes the appropriate sections of the IDOT Time Extension & Budget Change Request Form, clearly stating the reason(s) for the time extension.

For any *no-cost time extension*, ICT completes the following steps:

1. Submits all documents for approval to BR.
2. After the time extension is approved, performs all necessary internal steps to execute the no-cost time extension and updates all necessary financial tracking measures.

EQUIPMENT

Under the rules of the Intergovernmental Agreement that governs all ICT/IDOT research projects, "equipment" means an article of nonexpendable, tangible personal property having a useful life of more than one year and an acquisition cost that equals or exceeds $500 or the lesser of the capitalization level established by the institution for financial statement purposes. Equipment costs should be itemized in the original project budget.

Equipment purchases above the $500 threshold must have an Equipment Purchase Request Form submitted *and approved* prior to purchasing.

For any equipment request, the following steps are performed:

1. PI completes Part I of the Equipment Purchase Request Form and sends the form to ICT.
2. ICT/IDOT completes Part II of the form:
    a. If Part II is approved, ICT returns the request form to the PI and informs him/her that the equipment may be purchased.
    b. So that accurate records can be maintained, the PI provides ICT with information about the equipment, such as its location, actual cost, and serial number.
3. At the end of the project for which the equipment was purchased, ICT sends the original completed equipment request form to the PI so that the equipment can be returned to either ICT or IDOT, as described in Part II of the form. ICT then sends the form to the TRP chair, who signs Part III.

TRAVEL

PI's requesting to travel using ICT/IDOT funds must fill out a Travel Request Form **before** traveling. Travel costs should be itemized in the original project budget.

A travel request form must be completed for the following:

1. Out-of-state travel
2. In-state conferences

For a *travel request:*

1. PI completes the appropriate sections of the travel request form.
2. PI submits the form to ICT.
3. ICT submits the form to the project's TRP chair for approval.
    Please note that it is good practice to keep all receipts when traveling because they may be required for reimbursement.

WORK PLAN AND BUDGET PREPARATION

TIMELINE INFORMATION

A timeline must be included with each work plan. The figures below are examples of timeline for a regular project and a special project. The timeline must include each task in the project, as well as the three stages of the editing process (see End of Project section on page 6 of this document). Other items to include are Quarterly Progress Reports, semi-annual evaluations, and TRP/PI meetings.

Sample Timeline for Regular Projects

Project Milestones (assuming a January 1 Start Date and a 2 year project)		2018												2019											
	month	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12
1 Kickoff meeting		▓																							
2 PI conducts research		▓	▓	▓	▓	▓	▓	▓	▓	▓	▓	▓	▓	▓	▓	▓	▓	▓	▓	▓	▓				
3 PI writes DRAFT report																				▓	▓				
4 PI Submits final DRAFT report to ICT for editing																						▓			
5 ICT preliminary editing phase																							▓		
6 PI/TRP editing phase																								▓	
7 Final editing phase																									▓
8 Report posted to ICT website																									▓
(Quarterly Progress Reports due)				🟥			🟥			🟥			🟥			🟥			🟥			🟥			🟥
(Semi-annual evaluations due)							🟩						🟩						🟩						🟩
(TRP / PI meetings)			🟨			🟨			🟨			🟨			🟨			🟨			🟨			🟨	

Sample Timeline for Special Projects

Project Milestones (assuming a January 1 Start Date)		2018									
	month	1	2	3	4	5	6	7	8	9	10
1 Kickoff meeting		▓									
2 PI conducts research		▓	▓	▓	▓	▓					
3 PI begins preparing interim deliverable					▓	▓					
4 ICT edits interim deliverable							▓				
5 PI submits final DRAFT report to ICT for editing								▓			
6 ICT preliminary editing phase								▓			
7 PI/TRP editing phase									▓		
8 Final editing phase										▓	
9 Report posted to ICT website										▓	
(Quarterly Progress Reports due)				🟥			🟥			🟥	
(Semi-annual evaluations due)							🟩				
(TRP / PI meetings)				🟨			🟨			🟨	

BUDGET INFORMATION

Itemized Budget

Provide an itemized budget for the entire project, including the cost of personnel, consultants, subcontracts, equipment, materials, travel, overhead/indirect costs and cost share (match).

Each project must include a budget that clearly shows the portion of the total cost requested from IDOT/ICT (75%) and the matching funds/cost share (25%) required from the proposing agency. The indirect cost rate (also known as overhead or F&A) used for facilities and administration (F&A) cannot exceed 50% of the modified total direct costs.

If a subaward is necessary for extra support from outside the proposing agency, please note that the subaward cannot exceed 50% of the total project budget without prior approval. Subawards will also be accessed 50% F&A on the first $25,000 of the subaward.

A part of the 25% cost share requirement may be fulfilled through the use of unrecovered indirect costs. Any proposal submitted by an organization outside of the University of Illinois system that plans to use unrecovered indirect cost to meet part of the required 25% cost share must submit a request for approval to IDOT/FHWA (Federal Highway Administration). More information on this letter will be provided if and when a proposal is selected for funding.

Please refer to ICT's budget templates when submitting a proposal to ICT: UIUC Budget Template; Subawardee Budget Template

Budget Justification (Narrative)

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Each project must include a budget justification that explains the itemized budget in narrative form. The budget justification provides 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 this project will require out-of-state travel or to in-state conferences, please specifically list and explain the travel here. PI's requesting to travel out-of-state or to in-state conferences using ICT/IDOT funds must fill out a Travel Request Form for PI's and Research Assistants *before* traveling.

If this project will require the purchase of equipment, please specifically list these equipment purchases here. Equipment purchases above the $500 threshold must have an Equipment Purchase Request Form submitted *and approved* prior to purchasing.

IMPLEMENTABLE RESEARCH OUTCOMES

IDOT has a strong focus on implementable research outcomes. To facilitate the implementation of research results, the PI is asked to include his/her vision in the initial work plan as to the research outcome potential implementation (e.g., draft specifications, policy guidelines, software, training on new test/practice/equipment/software, etc.)

Additionally, the PI will work throughout the research project using the IPW to complete a task benefit analysis identifying the expected benefits of the research in the following areas, as applicable to the project:

- Construction Savings
- Operation and Maintenance Savings
- Increased Life Cycle
- Decreased Life-Cycle Cost
- Safety

- Decreased Engineering/Administrative Costs
- Environmental Aspects
- Technology
- User Benefits
- Other

The TRP and the PI will work together to identify implementation deliverables and implementation cost estimate, if applicable. All areas that are pertinent to the study shall be either qualitatively or quantitatively evaluated. The PI will work with IDOT to assess the value of quantifiable benefits.

Through the completion and use of the IPW, the PI shall provide the TRP a synopsis of implementation potential as well as implementation strategies. The IPW is considered to be an extension of the project work plan, updated as needed throughout the project. It is the responsibility of the TRP chair to make sure all parties needed for implementation are informed of the research and to promote implementation with IDOT.