

Illinois Center for Transportation

PRINCIPAL INVESTIGATOR RESEARCH GUIDEBOOK

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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 eight 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
- Minute taking (email ictprojectmanagement@illinois.edu with meeting time and location)

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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. ICTProjectManagement@illinois.edu should be copied on project communications.
- 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, project timeline, budget, 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(s) and Bureau of Research reviews and approves the project's work plan and budget.
- ICT helps facilitate this process between the TRP Chair(s) and PI.
An official cover sheet for the work plan must be signed by the TRP Chair(s) and BR's Bureau Chief. ICT will provide this cover sheet.

TRP 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(s). Parts of this form will have already been completed prior to the kickoff meeting, but it will be updated by the PI and TRP Chair(s) 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. A final TRP meeting will be required within four months of the project end 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(s) and PI.

- When scheduling a meeting, the organizer should email ictprojectmanagement@illinois.edu with the date, time, and location (At least 2 weeks' notice is appreciated). ICT will schedule a research coordinator to attend the meeting.
- Video conferencing (Zoom) is an option for meetings. ICT can help facilitate setup of a virtual Zoom 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) via automated email with instructions on how to complete this FHWA required document. To allow ICT staff adequate time for review and compilation of QPRs, submission 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

Research

The PI conducts the research as agreed upon with the TRP. The PI is also responsible for notifying the ICT research coordinator and the TRP Chair(s) 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 is 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 I (Month One – 30 days): The PI submits the completed report, formatted using the ICT report template, to ICTProjectManagement@illinois.edu. **Reports that are not properly formatted or Section 508 compliant will be returned to the PI for reformatting and resubmission.** Note that extensions will not be provided if the report is returned solely for formatting issues.

A comprehensive technical edit of the report will be performed and returned to the PI for review and revision. The report template as well as additional useful documents and forms are on the [Report Editing Process](#) page.

- PI/TRP EDIT PHASE (Month Two – 30 Days): The PI reviews the ICT technical edits, accepts/rejects changes, addresses all comments, and forwards the edited report to the project's TRP Chair(s) for review. The **TRP reviews and provides comments to the PI within 21 days of receipt.** The PI incorporates the feedback and returns the report to the TRP Chair for approval before sending the final version to ICT Project Management for final editing. **All discussion and updating of the final report between the PI and TRP Chair(s) should be complete at this time.**

- FINAL EDIT PHASE (Month Three – 30 days): When the PI sends the final version of the report to ICT Project Management, ICT will obtain the Final Report Approval Form from the TRP Chair(s). Upon receipt of the approval form, ICT Project Management performs a final editorial review and publishes the report. ***The TRP Chair(s) must sign the approval form prior to report publication.***

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(s) 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. 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 less than 20% of the original approved budget may be approved by the Bureau Chief of the Bureau of Research..
- Budget increases of 20% or more of the original approved budget must be approved by the ICT Executive Committee.

For any *budget increase*:

1. The PI should prepare and submit an updated budget of the funds being requested (please use the same format as original budget). Prepare and submit the budget justification, explaining how the funds will be spent. This documentation will be used as justification of the increased funds.
2. Prepare a modified workplan explaining how the funds will be used for the research.
3. ICT Project Management will initiate a Budget Increase Approval Form via DocuSign. The PI will complete Parts IV and VI of the Budget Increase form clearly stating the reason(s) for the increase.

NO-COST TIME EXTENSION

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>

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, which will be provided by ICT through DocuSign, clearly stating the reason(s) for the time extension.

For any *no-cost time extension*:

1. The PI must provide an updated project timeline.
2. ICT Project Management will initiate a Budget Increase Approval Form via DocuSign. The PI will complete Parts IV and VI of the Budget Increase form clearly stating the reason(s) for the increase.

EQUIPMENT

Under the rules of the Intergovernmental Agreement that governs all ICT/IDOT research projects, “equipment” means an article of nonexpendable, tangible or intangible property having a useful life of two or more years, and an acquisition cost of at least \$500, and will be purchased solely for use in the ICT/IDOT project. 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:

1. Proposals for equipment should be submitted in writing to the TRP Chair(s) and ICT Project Management.
2. If the TRP Chair approves, ICT Project Coordinators will create the equipment request form in DocuSign, which will explicitly indicate who will receive equipment at the end of the intended project. PI will fill out the equipment request form which will then be automatically sent for approval.

TRAVEL

PI's requesting to travel using ICT/IDOT funds must receive written approval from the TRP Chair and fill out a Travel Request Form **before** traveling. ICT will provide the form through DocuSign. 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 will contact the TRP Chair(s) and request an approval for the travel. ICT Project Management should be copied.
2. With the TRP Chair(s) written approval, ICT will initiate a Travel Request Form via DocuSign, and will distribute for signatures.

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 timelines 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 and TRP/PI meetings.

Sample Timeline for Regular Projects

Project Milestones (assuming a January 1 Start Date and a 2 year project)		2021												2022													
		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)																										
	(TRP / PI meetings)																										

Sample Timeline for Special Projects

Project Milestones (assuming a January 1 Start Date)		2022												
		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)													
	(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 assessed 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. More information on this letter will be provided if and when a proposal is selected for funding.

Please utilize ICT's [budget templates](#) when submitting a proposal to ICT.

Budget Justification

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 get pre-approval from IDOT, then reach out to ICT to send out the travel request approval form *before* traveling.

If this project will require the purchase of equipment, please specifically list these equipment purchases here. For equipment purchases above the \$500 threshold, pre-approval must be received from IDOT, and an Equipment Purchase Request form must be completed and signed 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.)

Ensuring all ICT/IDOT research projects result in implementable outcomes is an expectation from ICT, IDOT, and FHWA. To assist with tracking these results, the IPW was created as an extension of the project workplan and is updated as needed throughout the life of the project.

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 Lifecycle
- Decreased Lifecycle Cost

- Safety
- Impact on IDOT Policy
- Decreased Engineering/Administrative Costs
- Environmental Aspects
- Technology
- User Benefits

The IPW is a living document and can be updated at any time the TRP chair sees fit. The IPW should be in its final form for the final project TRP meeting. The IPW document is meant to be a guide for IDOT to be able to properly notify impacted offices within IDOT and implement expected outcomes from all research projects. The IPW also allows for implementation challenges and solutions to be discussed throughout the project. Additionally, it is a requirement of FHWA, and thus an important part of the project process.