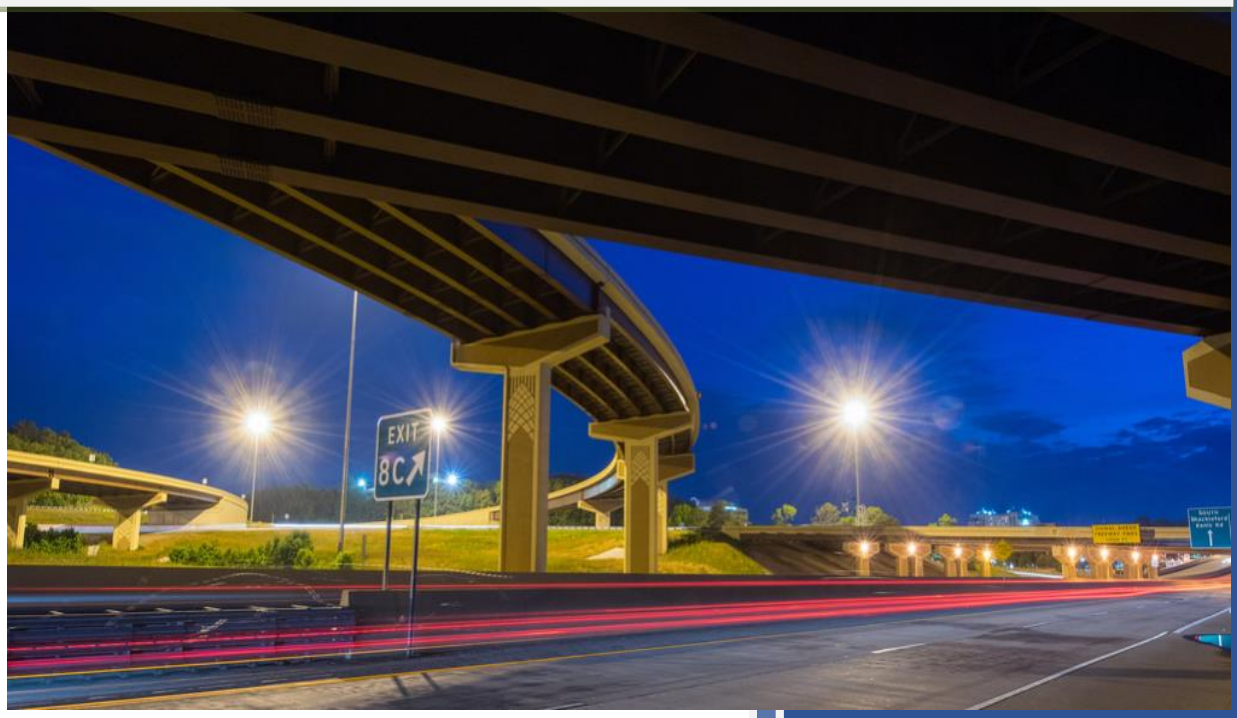
2019

ARDOT Research Manual



ARDOT
ARKANSAS DEPARTMENT
OF TRANSPORTATION

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Abbreviations, Acronyms, and Definitions

Abbreviations and Acronyms

AASHTO	American Association of State Highway and Transportation Officials
ARDOT	Arkansas Department of Transportation
CFR	U.S. Code of Federal Regulations
CTTP	Center for Training Transportation Professionals
EARS	Engineering and Research Services
EDC	Every Day Counts
FHWA	Federal Highway Administration
FY	Fiscal Year
LTAP	Local Technical Assistance Program
LRI	Local Research Initiative
MBTC	Mack Blackwell Rural Transportation Center
NCHRP	National Cooperative Highway Research Program
PM	Project Manager
PI	Principal Investigator
RAC	AASHTO Research Advisory Committee
RFP	Request for Proposals
RIC	Research Information Coordinator
RiP	Research in Progress
RITR	Research Implementation Tracking Record
SIR	System Information and Research Division
SPR	State Planning and Research Program
SPR, Part II	State Planning and Research Program that concerns only research
T^2	Technology Transfer Program
TPF	Transportation Pooled Fund Program
TRB	Transportation Research Board
TRC	Transportation Research Committee
TRID	Transportation Research Information Database
USDOT	United States Department of Transportation

Definitions

Action Plan is an ongoing progress report that is updated monthly. It is prepared by the PM and submitted to the Staff Research Engineer for review.

Advisory Council is a committee with the specific purpose of recommending research needs to the Transportation Research Committee. Membership on the Advisory Council is by invitation of the Director of Highways and Transportation and can be changed at the Director's discretion.

Advisory Council Chairperson is elected from the membership of the Advisory Council for a two year term with elections on odd numbered years.

Basic Agreement is the basic contract by which research is conducted on a cooperative basis between the Department and the Contractor. Projects are authorized for conduct under the terms of the basic agreement.

Budget is a part of the Project Contract and shows a maximum limiting amount, to include direct and indirect costs, which cannot be exceeded without a modification of the Project Contract.

Consultant refers to any private agency, individual or organization that is contracted with the Department to perform specialized and targeted research.

Contractor as used herein refers to any agency, institution, consultant, individual or organization which has entered into a basic agreement with the Department to conduct research projects, to provide implementation or to conduct training.

Contract is the signed contract authorizing the research to be conducted according to the research proposal, for each individual research project under the basic agreement.

Department as used herein refers to the Arkansas Department of Transportation.

Direct Cost includes salaries and wages, fringe benefits, travel, supplies and services, tuition, equipment and special equipment rental which will be assigned to or used on the project.

Engineering and Research Services (EARS) is an agreement between the Department and Contractors for specialized services without going through the formal contracting program.

Equipment is included as Routine, Expendable, Non-expendable, or Special Equipment.

Executive Board is composed of the Transportation Research Committee (TRC) Chairperson, as Chairperson, the System Information and Research Engineer, the TRC Secretary, as secretary, and two elected TRC members. The Executive Board has the authority to deal with matters, which shall be expedited before the next regular meeting of the Transportation Research Committee.

Federal Highway Administration is a part of the U.S. Department of Transportation that provides federal financial resources and technical assistance to State and local governments for constructing, preserving, and improving the Federal Highway System.

Final Report is prepared by the PI and submitted to the Department at the end of the project.

Graduate Assistant is a graduate student employed by the university and majoring in the field related to the research project.

Hourly Labor includes personnel assigned to work on a research project on a part-time basis, at an hourly rate of pay as established by the Contractor for the type and class of work to which assigned.

Implementation is the process of applying project findings to practical use by the Department. This is a high priority consideration that continues throughout the project and beyond. Implementation tracking begins with the initiation of a project when information is entered into the database by the Research Information Coordinator and carries through until the project findings are in common use or until the Research Implementation Committee determines implementation is not in the best interest of the Department.

Implementation Plan is a plan included in the Proposal and/or Work Plan that details the methods and procedures for putting the findings of the research project into practical use. The subcommittee will review and approve the implementation plan. Then the Implementation Plan will be finalized or modified after the subcommittee implementation meeting held at least six months prior to project completion.

Implementation Report is prepared by the PI in coordination with the Project Subcommittee, and submitted to the Department following the subcommittee implementation meeting and prior to submission of the Final Report.

Indirect Cost is considered as payment for research administration, overhead on necessary research facilities, and "routine" equipment, which are considered essential for effective administration and supervision of a project. Unless otherwise specified in the contract or the Basic Agreement, the indirect cost shall be 15% of Modified Total Direct Costs or other negotiated rate.

In House Project is a project on which most, or all, of the work is accomplished by Department forces.

Mack Blackwell Rural Transportation Center is an intermodal, interdisciplinary federally funded research and study center located at the University of Arkansas, Fayetteville. The focus of MBTC performs research in transportation engineering, transportation logistics, and issues affecting the transportation industry and transportation policy.

Modified Total Direct Costs includes all costs accumulating to a study except for cost of equipment, equipment rental, subcontracts, and tuition.

Principal Investigator (PI) is the person directly in charge of the project and shall be a staff member of the contracting agency.

Principal Investigator for Consultant Research Projects is the person directly in charge of the project and shall be a staff member of the contracting consultant agency.

Problem Statement is a brief statement outlining the need to conduct and the goals of a specific research project submitted for consideration to the Transportation Research Committee.

Project Agreement is the contract (executed Research Proposal) for each individual study under the Basic Agreement. The Basic Agreement is included as a part of each Project Agreement and is commonly referred to as Contract.

Project Manager (PM) is designated by the Staff Research Engineer and is the liaison between the Contractor and the Department.

Project Subcommittee is a committee appointed by the Transportation Research Committee Chairperson for the purpose of advising and guiding the research project personnel, monitoring progress of the specific research project, assist the PI in the development of the final Implementation Plan for that project and implementing the results.

Proposal is the document prepared by the contractor in response to the RFP and submitted to the Department for approval. The contractor and the Department will consider the proposal the contract document upon its execution.

Records include all the official writings or evidence that documents the meetings, findings, data, time and moneys expended on each research project.

Request for Proposal (RFP) is the document prepared by the Project Subcommittee to solicit proposals from prospective contractors.

Research Assistant is a student employed by the university and majoring in the field related to the research project.

Research Implementation Committee reviews final reports and implementation reports on research projects, receives implementation recommendations, determines proper implementation activities, methods and schedules, and assures implementation activities are meeting Department goals.

Research implementation Coordinator (RIC) is a member of the Department's staff that monitors and tracks the implementation process of research projects.

Research Librarian is a member of the Department's staff that is responsible for managing research information made available over the Department's computer network, screening and dissemination of non-Departmental research, and providing active library services.

Quick Turnaround Research refers to research projects lasting up to six months. These projects do not have to go through the formal TRC process.

Staff Research Engineer is the head of the Department's System Information and Research (SIR) Division Research Section and is responsible for all the research, technology transfer and implementation activities.

Standing Subcommittee Coordinator is designated by the Staff Research Engineer and assigned to one of the seven standing subcommittees to serve as the liaison between the subcommittee and the TRC.

Standing Subcommittee is one of seven subcommittees that review Problem Statements received each year. The Standing Subcommittees are Construction, Maintenance, Pavements, Materials, Design, Planning and Special Projects.

Technology Transfer is the process of transferring research findings through newsletters, reports, conferences, the research library, seminars, and national organizations.

Technology Transfer Program is a cooperative effort of the Department, the FHWA's Local Technical Assistance Program and the University of Arkansas at Fayetteville that assists cities, counties, and public agencies in implementation of transportation related technology. Targeted operations include construction and maintenance, materials, administration and computer software.

Transportation Research Committee is the coordinating committee for all cooperative transportation research projects. The committee membership is composed of

Department representatives and others as specified in the Constitution, By-Laws, and Standing Rules of the Transportation Research Committee.

Transportation Research Committee Chairperson is elected from the membership of the Transportation Research Committee for a two year term.

Transportation Research Committee Secretary is the Staff Research Engineer of the System Information and Research Division.

Travel is included in the project budget at an estimated cost when considered essential to effectively conduct research. This would include in-state project locations, related meetings, conferences, and workshops, whether in-state or out-of-state.

Work Order is the written notice from the Department authorizing the contractor to proceed with the research project. Work may not begin and no charges shall be made to the project until the Work Order is issued.

Work Plan is a document that outlines the purpose, objectives, scope, work methods, implementation considerations, duration, and cost estimate of the project.

Chapter 1: Introduction

1.1 Purpose

The Arkansas State Highway Commission and various research agencies conduct a cooperative program of transportation research and development. Transportation research is a necessary function of the Arkansas Department of Transportation (ARDOT) that strives for improvement of highways and transportation in Arkansas. Authorization for such work is under joint Basic Agreement and specific project contracts between ARDOT and the respective research agencies (Contractor). The research with these agencies utilizes Federal Funds, State Funds or a combination of both. The administration of individual projects shall conform to the rules, regulations, policies, and procedures issued by the Federal Highway Administration (FHWA), State of Arkansas Regulations and those of ARDOT.

The purpose of this Research Manual is to clearly present the requirements and procedures governing the conduct of transportation research projects and the implementation of research findings for ARDOT. The instructions and guidelines presented in this Research Manual are to be used as a guide for PIs, PMs, and all research personnel. The FHWA's permanent research directives and regulations are included in the Code of Federal Regulations, 23 CFR Part 420. This manual will be revised and updated as research needs expand and new instructions and guidelines are developed. Questions on situations and circumstances not adequately addressed herein will be negotiated on a case-by-case basis and done in accordance with FHWA's 23 CFR Part 420, the Research Manual, and all other Department guidelines and policies.

This manual is designed to meet the requirements of 23 CFR 420.09(b), which requires that States document their management process and procedures for selecting and implementing the Research and Development program. The main regulations for the federally funded research program management can be found in:

- 23 CFR 420, Subpart B – Planning and Research Program Administration;
- 23 CFR 505 – Project of National and Regional Significance Evaluation and Ranking;
- 23 CFR 200 – Uniform Administrative Requirements, Cost Principles, and Audit Requirements for Federal Awards.

1.2 Mission

The mission of the Research Section is to provide ARDOT with current information concerning the use and availability of newly developed equipment, modern upgrades to current equipment, and innovative materials, techniques and practices. Technology will be used in highway planning, design, construction, and maintenance

that will allow for the most effective and most feasible system in order to provide the traveling public with the safest, most aesthetic experience possible.

1.3 Goals

The goals of the Research Section are:

- Promote and perform transportation related research, implement newly developed equipment and technology, and engage in support activities.
- Increase the involvement of all areas of ARDOT in the research program process.
- Provide innovative and efficient practices for planning, design, construction, pavements, materials, and maintenance.

Chapter 2: Research

2.1 Responsibilities

The Research Section conducts the Department's Transportation Research and Development Program. The complete process can be found in the flow charts in Appendix 2, beginning on page 88. The tasks include but are not limited to:

- Responsible for documentation, reports, etc. to adhere to federal and state regulations.
- Coordinate Contract Projects detailed in the Work Program.
- Perform In-House research studies.
- Maintain a Library of research publications.
- Monitor the Department's Product Evaluation (conduct product evaluation as necessary).
- Administer the Transportation Research Assistantship Program.
- Assist Department personnel as requested or required.
- Conduct research activities included with national research programs such as USDOT, FHWA, AASHTO, TRB, and other organizations.
- Promote research implementation.
- Administer the Department's Transportation Related Research Grant Program.
- Administer technology transfer activities including activities of the Technology Transfer Program (T^2).

The Research Section is located in the Central Office Annex at the Central Office in Little Rock, AR. Research is a section within the System Information and Research Division. The section is supervised by the Staff Research Engineer.

2.2 Committees

TRC Executive Committee

TRC Executive Committee acts on significant matters which shall be handled between regular meetings of the Transportation Research Committee.

Members:

TRC Chairperson, Rotating
TRC Secretary, Staff Research Engineer
System Information and Research Engineer
Assistant Chief Engineer - Planning

Elected TRC Member
Elected TRC Member

TRC

The TRC committee determines which problem statements will be funded for research. They take into account the Standing Subcommittee and the Advisory Council's recommendations as well as the problem statement reviews from the Research Section. The committee is governed by the Constitution By-Laws and Standing Rules of the Transportation Research Committee.

Members:

Chairperson
Deputy Director and Chief Engineer
Assistant Chief Engineer - Planning
Assistant Chief Engineer - Design
Assistant Chief Engineer - Operations
State Construction Engineer
State Maintenance Engineer
Bridge Engineer
Division Head - Computer Services
Division Head - Environmental
Division Head - Surveys
Materials Engineer
Roadway Design Engineer
System Information and Research Engineer
Transportation Planning and Policy Engineer
District Engineer - Rotating
District Engineer - Rotating
Secretary, Staff Research Engineer *
Advisory Council Chairperson*
FHWA Representative*

*Non-voting Members

Advisory Council

Advisory Council is a committee that meets once per year to review the Problem Statements needs and taking into consideration the Standing Subcommittee rankings, recommends Problem Statements that should be considered for funding to TRC. Advisory Council members are asked to lend their technical expertise to the Research Program by serving on this committee.

Members:

Membership on the Advisory council is by invitation of the Director. Representatives of educational institutions, private industry, and other transportation related agencies and associations will be asked to serve on a voluntary basis as members of the Advisory Council. The Director may expand or restrict representation on the Advisory Council at any time. In the event that a member of the Advisory Council is unable to attend a meeting, the Director may send an alternate from the Department. The Director should notify the TRC Secretary of such arrangement in advance of this meeting.

Duties, operating procedures and voting procedures are outlined in the Constitution, By-Laws and Standing Rules of the Transportation Research Committee.

Standing Subcommittee

There are seven standing subcommittees that specialize in specific areas that conduct the initial review and ranking of Problem Statements within their area of expertise. The Standing Subcommittees review all Problem Statements within their specific area, rank them, and then forward them to the Advisory Council. Should a problem statement fall within the parameters of the problem statement rejection form, then the standing subcommittee can reject a submitted statement. Each subcommittee is assigned a committee coordinator by the Staff Research Engineer. The committee coordinator is a Research PM with the added responsibility of coordinating the standing subcommittee activities and serving as liaison on behalf of the standing subcommittee and the TRC. The field related representatives for each subcommittee is appointed by the TRC Chairperson.

Subcommittees:

- Construction
- Design
- Maintenance
- Materials
- Pavements
- Planning
- Special Projects

Members:

- Appointed Research Liaison
- Subcommittee Chairperson
- FHWA Representative
- Field Related Representative(s)

Project Subcommittee

A Project Subcommittee will be appointed as provided in Article V of Transportation Research Committee Constitution and By-Laws. The purpose of the subcommittee is to act on behalf of the full committee and assure that the objectives and purposes of each approved research project are fully attained in the most effective and efficient manner, so that all participating agencies will receive the greatest possible benefit from the research. Monitoring each project is vital to the success of the individual project and developing implementation plans. Project Subcommittees will consist of a Subcommittee Chairman, three to four field representatives, FHWA Representative, PM, and PI. The Project Subcommittee Chairperson shall be a member of TRC. The field related representatives of the subcommittee are appointed by the Chairperson of TRC. PM will serve as secretary of the subcommittee. PI is appointed by the agency conducting the research, with the approval of the Staff Research Engineer. A representative of FHWA will be invited to be a member of the subcommittee and will be accorded all duties, right and privileges of full subcommittee membership. The PM and the PI are considered non-voting members. The members are on the committee through the duration of the project unless they resign or by direction of the TRC Chairperson. The subcommittee will function until dissolved by the Research Implementation Committee, or when implementation is accomplished and/or the results are in common usage.

Members:

Chairperson
Secretary, PM*
FHWA Representative
Field Related Representative(s)
PI*
*Non-voting Member

Duties and Responsibilities:

- Determine if a new project will be conducted as a contract project or in-house project.
- Assist the PM in the development of the Work Plan or RFP.
- Reviews all proposals received and makes recommendations to the TRC concerning the proposals.
- Assist in necessary revisions when a Work Plan or Proposal is not approved by the Department's Administration.
- Inspect the work performed on the project for which they have been appointed and to see that work is being performed in accordance with the accepted Work Plan or Proposal.

- Review proposed changes in the scope, objectives, or budget on a project after work has started and submit recommendations to the Staff Research Engineer.
- Minutes of all meetings are to be recorded by the subcommittee secretary, and a copy sent to the Transportation Research Committee Secretary.
- Required to meet at least once per fiscal year or as often as the Chairperson may direct to assure that all members are aware of progress, problems, work schedule, etc. The Chairperson will call a subcommittee meeting at the request of two or more of its members, the PM, or the PI.
- May recommend that a project be suspended or terminated by a simple majority vote. The Staff Research Engineer will advise the TRC Chairperson and the System Information and Research Engineer of their recommendation.
- Periodically review the status of the project and ensure that work is being performed in accordance with the Work Plan or Proposal.
- Responsible for assisting the PI in preparing implementation recommendations throughout the project, as well as reviewing the Implementation Report for submission to the Research Implementation Committee.
- Responsible for reviewing all project related reports.
- Coordinate with the PI and the RIC to publish the results of implementation activities.

Research Implementation Committee

The Research Implementation Committee is responsible for the implementation activities of every project. They make the final decision on whether the project findings will or will not be implemented and if implemented how it will be dispersed throughout the Department by directing appropriate action.

Members:

TRC Chairperson, Rotating
Secretary, RIC
Assistant Chief Engineer - Design
Assistant Chief Engineer - Operations
Assistant Chief Engineer - Planning
Staff Research Engineer

Duties:

- Review all final reports on Research projects.
- Receive implementation recommendations from the PI in coordination with the Project Subcommittee.
- Determine proper implementation activities, methods, and schedules.
- Assure research implementation activities are aligned with the current Department's goals.

Product Evaluation Committee

Product Evaluation Committee evaluates new or improved materials, products, processes, or equipment that is proposed for use in highway projects by vendors and industry representatives.

Members:

State Construction Engineer
State Maintenance Engineer
Division Head - Bridge
Division Head - Materials
Division Head - Roadway Design
Division Head – Environmental
Staff Research Engineer
FHWA
Secretary, Quality Assurance Engineer

LTAP/T^2 Advisory Committee

LTAP/T^2 Advisory Committee reviews the yearly training program and provides guidance for the upcoming year regarding offered courses.

Members:

Chairperson, System Information and Research Engineer
Secretary, Technology Transfer Program Manager
FHWA Representative
President of Arkansas County Judges Association
American Public Works Association Representative
Association of Arkansas Counties Representative
Arkansas Municipal League Representative
CTTP Representative
State Aid Engineer
Staff Research Engineer

2.3 Staff Roles and Responsibilities

Below is a list of the staff positions that comprise the Research section. See Appendix 4 for job responsibilities checklists corresponding with the various roles and responsibilities of the Research section.

Staff Research Engineer

The Staff Research Engineer is the head of the Research Section and provides oversight of the Department's research, innovation, and implementation activities. Duties include, but are not limited to:

- Serve as Secretary of the TRC.
- Serve as Secretary of the Advisory Council.
- Serve as Secretary for the Executive Board.
- Serve as a member of the T^2 Advisory Committee.
- Serve as an active member for AASHTO Research Advisory Committee.
- Supervise the Research Section personnel.
- Solicit Problem Statements in July of each year and assigns them to the corresponding Standing Subcommittees.

Standing Subcommittee Coordinator

The committee coordinator is a PM appointed by the Staff Research Engineer to serve on a standing subcommittee. Duties include, but are not limited to:

- Coordinate the activities of their appointed subcommittee.
- Serve as liaison on behalf of the subcommittee and the TRC.
- Attend Standing Subcommittee meetings.
- Review and evaluate problem statements within appointed standing subcommittee.

Project Manager

The PM is designated by the Staff Research Engineer and is the liaison between the Contractor and the Department. Responsibilities of the PM may vary in scope and complexity depending on the type and extent of the research effort. Duties include, but are not limited to:

- Assist in preparing and reviewing RFPs proposals, Contractors and work plans for new projects.
- Monitor progress of the project and ensuring estimated timeline is achieved.
- Coordinate efforts of all personnel directly involved with the work.
- Act as secretary to the Research Project Subcommittee.
- Review reports and claims prepared by PI; ensuring accuracy and completeness.

- Update monthly Action Plan and conduct bi-weekly visits and monthly in-person meetings.
- Keep the subcommittee informed of progress and activities of the researchers.
- Serve as liaison between the Department and Contractor.
- Schedule and conduct a project close out session upon completion of the project.
- Assist RIC with all implementation tracking throughout life of the project.
- Work with subcommittee to document project results incorporated into highway projects.
- Serve as liaison between the subcommittee and the area of the Department involved with implementation of project results.
- Perform necessary administrative and technical activities on behalf of the Department.

Research Implementation Coordinator

The RIC is responsible for managing research implementation on current and completed projects. Duties include, but are not limited to:

- Keep track of the implementation on all research projects.
- Attend Project Subcommittee meetings.
- Submit an annual implementation report on completed project each March for at least three years after the completion of a project.
- Insure implementation remains a primary objective for each project.
- Report findings to Research Implementation Committee.
- Document all costs associated with implementation.

Principal Investigator for Contract Projects

The PI is the person directly in charge of conducting the work on the Contracted Project. The PI's will direct personnel working on the project, plan and coordinate work in accordance with the approved contract, and be available for implementation of project findings upon completion of the research. The PI shall be a staff member of the contracting agency. The PI shall be in responsible charge of all the research being conducted. Duties include, but are not limited to:

- Preparing Contract Project proposal.
- Coordinating the research of the Contract Project.
- Updating PM on project status as requested.
- Preparing and submitting reports such as Quarterly, Implementation, and Final Report to the PM at the specified time in the Contract Project.
- Ensuring that all submitted work is checked for accuracy and completeness.
- Managing Contract Project timeline throughout the duration of the project based on submitted work plan.

- Submitting claims for cost reimbursable contracts every quarter and managing contract budget expenditures.
- Attending subcommittee meetings as requested.
- Presenting updates or findings at TRC meetings as requested.

Principal Investigator for Consultant Projects

The PI is the person directly in charge of conducting the work on the Contracted Project with a consultant agency. The PI's will direct personnel working on the project, plan and coordinate work in accordance with the approved Master Agreement and individual task orders. The PI shall be a staff member of the consultant agency. The PI shall be in responsible charge of all the research being conducted. Duties include, but are not limited to:

- Preparing Contract Project proposal.
- Coordinating the research of the Contract Project.
- Updating PM on project status as requested.
- Preparing and submitting reports and data as specified in task orders ensuring all submissions are accurate and complete.
- Managing Contract Project timeline throughout the duration of the project based on submitted work plan.
- Submitting claims for cost reimbursable contracts every quarter and managing contract budget expenditures.
- Attending subcommittee meetings as requested.
- Presenting updates or findings at the TRC meetings as requested.

Principal Investigator for In-House Contract Projects

The PI is the person directly in charge of conducting the work on the Research Project. The PI will direct personnel working on the project, plan, and coordinate work in accordance with the approved Work Plan and be available for implementation of project findings upon completion of the research. The PI will be a staff member of the Department. The PI shall be in responsible charge of all research being conducted. Duties include, but are not limited to:

- Preparing Project Work plan as directed by the subcommittee.
- Coordinating the research of the project.
- Updating PM on project status as requested.
- Completing and submitting reports such as Quarterly, Implementation and Final Report at the specified time in the work plan.
- Ensure all submissions are accurate and complete.
- Managing the project timeline throughout the duration of the project based on submitted work plan.
- Attending subcommittee meetings as requested.
- Presenting updates or findings at TRC meetings as requested.

Technology Transfer Program Manager

The Technology Transfer Program Manager is responsible for administrative task of the LTAP/T^2 Program. Duties include, but are not limited to:

- Prepare the yearly work plan and budget for the program ensuring all work is accurate and complete.
- Work directly with the instructors and local agencies concerning class planning, scheduling, and other technology transfer details.
- Review submitted evaluation forms from students and teachers and make necessary adjustments.
- Develop and instruct training courses as needed.
- Review proposed training courses and consult with instructors when necessary.
- Provide summary reports to the T^2 Advisory Committee.
- Promote T^2 Program Statewide.

Research Librarian

The Research librarian is responsible for managing research information on current and completed projects as well as distribution of non –Department research. Duties include, but are not limited to:

- Maintain a database with all research in progress and completed research.
- Ensure research projects are updated on TRB's RiP and TRB's TRID.
- Compile and publish the Research Newsletter with assistance from the Public Information Section.
- Maintain Research Library both physically and electronically.
- Screen and disseminate non-Departmental research.
- Distribute state DOT Research Reports in accordance with the directive of the Federal Highway Administration (FHWA) and the State of Arkansas Library.

Research Financial Coordinator

The Financial Coordinator is responsible for coordinating and monitoring all financial information within the Research Section. Duties include, but are not limited to:

- Coordinate and monitor project research budgets for the Section in accordance with applicable federal and state regulations.
- Review and submit research contract claims.
- Conduct in-house research and literature reviews as needed.
- Monitor Section and Division budgets and Work Program activities.

- Coordinate and communicate with other Divisions and Sections of ARDOT on financial matters such as Minute Orders, Job Numbers, Invoicing, etc.
- Perform necessary administrative and technical activities on behalf of the Department.

Chapter 3: TRC Project Development

3.1 Problem Solicitation

Problem Statements

Research Problem Statements are solicited annually, typically during the months of July and August but are accepted year round. A representative of the Research Section visits each of the Department's engineering Divisions and Districts to discuss possible topics for research projects. A notice of Problem Statement solicitation is also sent to other research agencies by the TRC Secretary. Problem Statements may be developed by any person, agency or organization interested in improved transportation in Arkansas. Preliminary research suggestions can be sent directly to the TRC Secretary prior to the Advisory Council and TRC Meetings. Research Problem Statements shall be submitted using the Problem Statement Form to be considered by the TRC. The TRC Secretary assigns each submitted Problem Statement to one of the Standing Subcommittees.

All Problem Statements received are reviewed by the Standing Subcommittee Coordinator. The Standing Subcommittee Coordinator conducts a preliminary search for related research activities in the TRID, RiP, Department's Research Library, and the internet. The results are summarized on the Problem Statement Evaluation Form. The Problem Statements and the Evaluation Form are then sent to the members of the Standing Subcommittee for review.

Project Prioritization and Approval Process

The Standing Subcommittees meet, typically in September, to discuss the Problem Statements with respect to the Department's needs. The Standing Subcommittee Coordinator is present at this meeting to answer any questions about the initial evaluation. The members vote by paper ballot to assign a preliminary priority ranking to each Problem Statement. Under specific and limited circumstances, the Standing Subcommittee may reject a Problem Statement before sending it to the Advisory Council. The decision to reject a Problem Statement must be the unanimous consensus of the Standing Subcommittee. The reasons for this rejection must be outlined in detail on the Subcommittee Problem Statement Rejection Justification form. There are several acceptable reasons for rejections: the research is already being conducted by the Department, the Department has previously conducted this research

with no major changes present in this problem statement, the problem statement has already been submitted in a past year and no significant changes were made with the presently submitted statement, or the problem statement is too similar to a pooled fund study that the Department is currently participating in. The Staff Research Engineer must sign off on the Rejection Form to ensure the justification given is appropriate. The Standing Subcommittee Coordinator will contact the Problem Statement's submitter to inform them of the Subcommittee's decision. The results of the vote along with the Problem Statement and Evaluation Form are then sent to the Advisory Council.

The Advisory Council meets, typically in October, to discuss each of the Problem Statements with respect to the needs of the industries that they represent (asphalt, concrete, structures, environmental, etc.). After discussing all Problem Statements, the Advisory Council members vote by paper ballot to assign priority to each Problem Statement. The voting results are utilized to establish ranking by the Advisory Council. The Problem Statement, Subcommittee ranking, and Advisory Council ranking are submitted to the TRC for consideration.

The top Problem Statements as voted by the Advisory Council and the number one ranked Problem Statement from each of the seven Standing Subcommittees are presented to the TRC members at the fall meeting, which is typically held in November, at least 30 days after Advisory Council. The submitter of these Problem Statements is given five minutes to present details of his/her Problem Statement and TRC is given the opportunity to ask any questions at that time. After all presentations are given, TRC discusses the Problem Statements and casts final votes on priority by written ballot.

The ballots received from the Advisory Council and TRC use the same format. The ballot is calculated on a point system based on the total number of Problem Statements submitted. The ranking received from each member is subtracted from the total number of Problem Statements plus one (1), so as not to have a zero value point system. Then each statement is ranked based on their calculated point value.

Anticipated available funding will determine the number of research projects prepared for inclusion in the annual Research Work Program. Research project selection will begin with the highest priorities, unless the Executive Board reassigns priorities based on Department needs.

The TRC Chairperson names a Project Subcommittee for those research projects selected to be funded and included in that year's Research Work Program and a PM is

appointed by the Staff Research Engineer. The Chair of the Project Subcommittee is a member of TRC and the other members are selected for each Project Subcommittee based on experience and/or interest in the subject area.

3.2 Project Development Process

At the Project Subcommittee's first meeting, it is determined whether the research project can best be done by a Contractor or by in-house personnel. The Project Subcommittee also reviews the Problem Statement and determines details of the research project that need to be included in the Research Proposal or In-House Work Plan. Discussion of implementation goals begin here and are kept as a focus throughout the project.

Contract Project

Request for Proposal Process:

If the Project Subcommittee determines that the project would best be completed by a Contractor, the following process occurs:

1. A letter of solicitation will be sent out. A subcommittee meeting will then be held with all interested parties. For each research project intended to be conducted by a Contractor, the Project Subcommittee and PM prepare a RFP.

2. The Project Subcommittee evaluates those Research Proposals received. The submitter of each Research Proposal can be invited to attend a Project Subcommittee meeting to discuss and answer any questions about his/her Research Proposal.

3. The Project Subcommittee recommendations for Research Proposals are submitted to the TRC for review and recommendations are made concerning funding. Upon the recommendation of the TRC, research projects are submitted to the Research Section for inclusion in the Annual Research Work Program and Budget.

4. Research projects receiving all required approvals are then submitted to the Director of ARDOT for signature. When all approvals and signatures are obtained, the research project is included in the Research Work Program and becomes the Project Contract.

5. Research projects are approved by FHWA. Upon approval, Research then sends notification to begin work to project Contractor.

6. Upon written notification to the Contractor, research work can begin and charges for work can be made to the research project. This notification is a Work Order and charges for a research project will not be accepted until the Work Order has been issued. The work will be conducted in consultation with the Project Subcommittee. The Research Project Implementation Tracking also begins with the issue of the Work Order. It is maintained by the RIC as the research project progresses and is reviewed at subsequent Project Subcommittee meetings.

7. A minimum of six months prior to project completion an implementation meeting is held with a member of the Research Implementation Committee. Before the meeting, the implementation report is due from the PI.

8. The PM monitors the work conducted on the research project through the life of the project as designated in the Project Contract or Project Agreement. A Final Report shall be prepared by the PI and submitted to the Department no later than the completion date on the research project contract utilizing standard report format, see ARDOT Specifications for Reports.

9. Failure to deliver the required Final Report by the completion date of the contract will result in the cancellation of the project and 25% of the total project cost will be retained by the Department.

10. The project subcommittee follows the project implementation plan and Research tracks the implementation progress. The subcommittee reviews progress until the project implementation plan is complete. See Chapter 7 Section 6 for complete implementation process.

Research Proposal:

Research proposals, complete with a detailed work plan and budget, shall be submitted to TRC through the TRC Secretary. These proposals shall be prepared in response to RFP's and in accordance with the provisions set forth in this Manual and the Basic Agreement between the Department and the contracting agency. The proposal composition setting forth scope of work and methods of study shall include:

1. Identification: A title sheet or equivalent which includes a concise title for the proposed study, project number, project length and project cost; name and business address of the organization that will conduct the work; and the name, title, and mailing address of the PI and co-PI. The title sheet shall include signature lines for the appropriate officials of the contracting agency, with name and title typed beneath. A signature line will be included for the Director of ARDOT.

2. Problem Statement: A clear and concise statement of the problem to be solved by the proposed research.

3. Objectives of the Study: These are the technical objectives upon which the project staff is to focus attention and upon which research efforts are to converge. The objectives should clearly and concisely identify the expected products of the research effort.

4. Background and Significance of Work: Should provide a statement which: (a) describes the findings of a search of the Highway Research Information Service and/or other literature reviews. These findings should demonstrate that either no other studies have attacked the problems with the same approach, or that the proposed study will extend, modify, or refine work, and (b) supports the Contractor's approach and states why it is believed to be the best.

5. Benefits: Benefits anticipated from the research findings should be enumerated.

6. Implementation: This section of the proposal shall include the Project Implementation Plan. The potential for implementation will be considered at the initiation of possible research projects. A proposal shall contain a section entitled "Implementation" to address the proposed implementation in some detail. The Implementation Plan shall include the steps necessary to implement the project and the estimated costs of the implementation plan to both the Contractor and the Department. For studies which are expected to provide immediately implementable results, the proposal should specify an implementable product such as a proposed specification, a procedure manual or guide, a training manual, hardware for demonstration, or software and instructions ready for computer application. If the findings of a study will not be suitable for immediate application in practice, the research proposal should set

forth additional steps which are expected to be required before application (e.g., additional research, field testing, etc.).

7. Work Plan: The Work Plan should fully describe the approach intended and specify how the study will be structured to meet each study objective. To the extent possible, it should identify major operational phases and relate the phase to personnel requirements, time schedules, and cost estimates. All requirements for support services and equipment from the Department shall be clearly defined as to nature and extent. An approved work plan cannot be altered or amended without the approval of the Department.

8. Personnel and Budget Estimate: A summary tabulation showing the staffing plan, estimated personnel requirements, and cost for the full term of the study broken down by each work program period.

   A Contracted TRC Project Renewal Form and a Renewal Agreement Form is required for each fiscal year after the initial start date of the project and are due by March 15 to the Staff Research Engineer for the project to be included in the Annual Work Program and receive funding for the next Fiscal Year. If the submitted budget on the Project Renewal form differs from the original proposal, a Contracted TRC Project Budget Revision Request Form with a detailed explanation must be attached to the Renewal forms.

   The proposal estimate must be submitted using the most up-to-date versions of the Estimated Project Budget Forms found on Research's website. One form for each project Fiscal Year and one form for the entire project budget should be submitted. These forms should include:

   a) Salaries and Wages- All salaries and wages as well as full or fractional Person-year equivalent (PSEs) are required for the following three categories:
      - Professional Services
      - Technical Support
      - Clerical Support

   b) Fringe Benefits- Benefits paid to an employee of a research project may be reimbursed to the Contractor up to 24.07% of salary or wage. These shall be charges for actual expenditures and will be audited by the Department.

c) Supplies and Services- This item may include office supplies that are essential to effectively conduct the research project, expendable equipment, laboratory supplies, and charges from other departments of the contracting agency for project services.

   All proposed budgets for TRC projects shall include calculations for professional editing/proofreading services in the final year's budget. If the PI has not selected a professional to use at the start of the project, it is the PI's responsibility to have an estimated price for the budget proposal. When the final is submitted to the PM, the PI is required to verify that the report has been previously edited by including the Editor's name and contact information. This expenditure will be charged and documented on the final project claim.

d) Travel- This item shall include all anticipated travel costs. In-state and out-of-state travel shall be listed separately. Out-of-state travel requested shall be itemized on the budget form and listed in the Project Contract. Out-of-state travel using research project funds is limited to one trip per year.

e) Indirect Costs- Reimbursement for overhead costs incurred as a direct result of the research project may be listed under this item. Reimbursement shall not exceed 15% of Modified Total Direct Costs (direct costs minus equipment, equipment rental, subcontracts, and graduate student tuition).

f) Tuition- The cost of tuition for graduate students who plan to work on the research project shall be listed. Funds for graduate student tuition cannot be transferred to another line item and is not included in the calculation for indirect costs.

g) Subcontracts- The Contractor shall supply the Department with a salary schedule for contract personnel who are assigned to research projects. This schedule shall include the name and salary of the personnel working on the research project, the length of the contract, and description of the contract work planned. Equipment purchases

are prohibited on a Subcontract and shall be made by the PI and listed within the Equipment section. The total amount budgeted for a subcontractor *shall not* exceed 49% of the total contracted amount or estimated work performed.

h) Equipment-

- Equipment Rental- A list of equipment to be rented for the project along with the rental rates shall be supplied.

- Equipment Purchase- Each item of non-expendable equipment to be purchased or fabricated by the Contractor under the research project shall be listed. Equipment purchased and/or fabricated in this manner is the property of the Department. All equipment, regardless of cost, shall be listed in the Project Contract.

- Computers and Computer Software/License- All computer equipment, no matter the purchase amount, shall be listed. Each computer software program and/or license that is purchased for the project shall be listed and is the property of the Department.

i) Services and/or Equipment provided by the Department- In order to accurately compare proposals from different agencies or institutions, funds shall be budgeted for Department services and/or equipment used for research services. The Staff Research Engineer should be contacted for costs and rates for such services. These costs are not a part of the billable and transferable budget available to the Contractor. Items for budgeting may include:

- Testing Services - This includes materials testing, pavement performance evaluation equipment such as Falling Weight Deflectometer, core drilling, profilograph/profilers, skid testing, etc.

- District Services - Includes all traffic control service and other special service by District personnel.

- Research Services - Includes all data collection and analysis services provided by the Department's Research Section.

j) Implementation- This item will be included for working with the subcommittee on the implementation plan and for actual implementation activities which may be undertaken in conjunction with the project. It can include any type charge except for major items of equipment and indirect costs. It may include salaries and wages, fringe benefits, equipment rental, travel and such other charges as may be required in carrying out implementation activities in the course of the project.

9. Facilities Available: Should describe the general facilities at the researcher's disposal which are important to the conduct of the work.

10. Equipment: All equipment to be fabricated, purchased, or rented for the project should be listed in the proposal in the applicable category. Equipment fabricated or purchased will be bought under state purchasing regulations in accordance with the Federal Acquisition Regulations, capitalized by the Department, and upon completion of the project any residual value will be credited to the project. Equipment rental rates shall be agreed upon prior to charges being accepted. They shall be based upon a fair and reasonable method of calculation resulting in the project being charged its fair share of the costs involved.

11. Work Time Schedule: A Gantt chart, which also serves as a progress chart giving a chronological breakdown of the activities included in the project, should be provided in the research proposal to illustrate the interrelationship and scheduling of the major operational phases of the study. The chronological sequence of activities will be in terms of days, months, years, etc.

12. Level of Effort: Each professional employee to participate in the performance of the project shall be identified by name, with role and level of effort. Technical support shall be divided into graduate assistant help and research assistant help for reporting. Clerical support shall also be reported.

13. Reports: Periodic progress reports, as specified in the proposal are made and submitted to the Research Section. The minimum reporting requirement for progress reporting is quarterly, and shall be submitted within seven (7) days of

the end of each quarter. An Implementation Report will be required at least six months prior to the scheduled completion date. The preparation of a final report shall be required in the proposal, as well as the master's thesis or graduate dissertation if applicable, as a condition of study approval. The proposal should define the type of reports that will be prepared in order to properly document the work and the fulfillment of the study objectives. Submitting of any publications on the work being completed, outside of the Department while the research project is still on-going, shall be approved by the Department before submission. (See Chapter 4 Section 4.2 for all required reports)

In-House Project

Work Plan Process:

If the Project Subcommittee determines that the project would best be completed in-house, the following process occurs to prepare an In-House Work Plan:

1. The Project Subcommittee recommendation for the In-House Work Plan is submitted to TRC for review and recommendations are made concerning funding. Upon the recommendation of TRC, research projects are submitted to the Research Section for inclusion in the Research Work Program and Budget. Approval by the System Information and Research Engineer will depend upon the availability of funds in the Research Work Program.

2. Research projects receiving all required approvals are then submitted to Assistant Chief Engineer – Planning for signature. When approved and signatures are obtained, the research project is included in the Research Work Program and becomes the Project Agreement.

3. Upon signature of the Work Plan, work may begin and charges may be submitted in accordance with the Work Plan. The Research Project Implementation Tracking also begins once work has been initiated. It is maintained by the RIC as the research project progresses and is reviewed at subsequent Project Subcommittee meetings.

4. A minimum of six months prior to project completion an implementation meeting is held with a member of the Research Implementation Committee. Before the meeting the implementation report is due from the PM.

5. The PM monitors the work conducted on the research project through the life of the project as designated in the Work Plan. A Final Report shall be prepared by the PI and submitted to the Department within 90 days of completion of the research project.

6. The subcommittee follows the project implementation plan. Research tracks the implementation progress. The subcommittee reviews progress until the project implementation plan is complete. See Chapter 5 Section 6 for complete implementation process.

Work Plan for In-House:

The work plan in regards to In-House projects is a technical outline developed by the PM and the Project Subcommittee. Step-by-step procedures for accomplishing a scientific work shall be explained and include detailed methods and techniques as to how the research will be conducted, with time phases clearly set forth. The Work Plan shall include:

1. Identification: A title sheet or equivalent which includes a concise title for the proposed study, project number, project length and project cost; name and business address of the Department; and the name of the PI and PM. The title sheet shall include a signature line for the Assistant Chief Engineer of Planning of the Arkansas Department of Transportation.

2. Problem Statement: A clear and concise statement of the problem to be solved by the proposed research.

3. Objectives of the Study: These are the technical objectives upon which the project staff is to focus attention and upon which research efforts are to converge. The objectives should clearly and concisely identify the expected products of the research effort.

4. Benefits: Benefits anticipated from the research findings should be enumerated.

5. Implementation: This section of the proposal shall include the Project Implementation Plan. The potential for implementation will be considered at the initiation of possible research projects. A proposal shall contain a section entitled "Implementation" to address the proposed implementation in some detail. The Implementation Plan shall include the steps necessary to implement the project and the estimated costs of the implementation plan to the Department. For studies which are expected to provide immediately implementable results, the Work Plan should specify an implementable product such as a proposed specification, a procedure manual or guide, a training manual, hardware for demonstration, or software and instructions ready for computer application. If the findings of a study will not be suitable for immediate application in practice, the Work Plan should set forth additional steps which are expected to be required before application (e.g., additional research, field testing, etc.).

6. Personnel and Budget Estimate: A summary tabulation showing the staffing plan, estimated personnel requirements, and cost for the full term of the study broken down by each work program period. The estimate should include salaries and wages for professional and support personnel, travel, equipment (purchase and/or rental), expendable materials and supplies, implementation, and special services (where applicable).

   Although budget sheets are submitted for each Fiscal Year and a Total Project Budget in the original proposal, an In House Project Renewal Form, is required for each fiscal year after the initial start of the project. The form shall be complete with a budget for the next year and received by the Staff Research Engineer by March 15 for the project to be included in the Annual Work Program and funded for the subsequent year. If the budget submitted with the Renewal form differs from the budget sheets in the original proposal, a detail explanation will be a required.

7. Equipment: All equipment to be fabricated, purchased, or rented for the project should be listed in the Work Plan in the applicable category. Equipment fabricated or purchased will be bought under state purchasing regulations in accordance with the Federal Acquisition Regulations, capitalized by the Department, and upon completion of the project any residual value will be credited to the project. Equipment rental rates shall be agreed upon prior to charges being accepted. They shall be based upon a fair and reasonable method

of calculation resulting in the project being charged its fair share of the costs involved.

8. Work Time Schedule: A bar chart, which also serves as a progress chart giving a chronological breakdown of the activities included in the project, should be provided to illustrate the interrelationship and scheduling of the major operational phases of the study. The chronological sequence of activities will be in terms of days, months, years, etc.

9. Level of Effort: Each professional employee to participate in the performance of the project shall be identified by name, with role and level of effort. Also list any technical or clerical support to be used during the project.

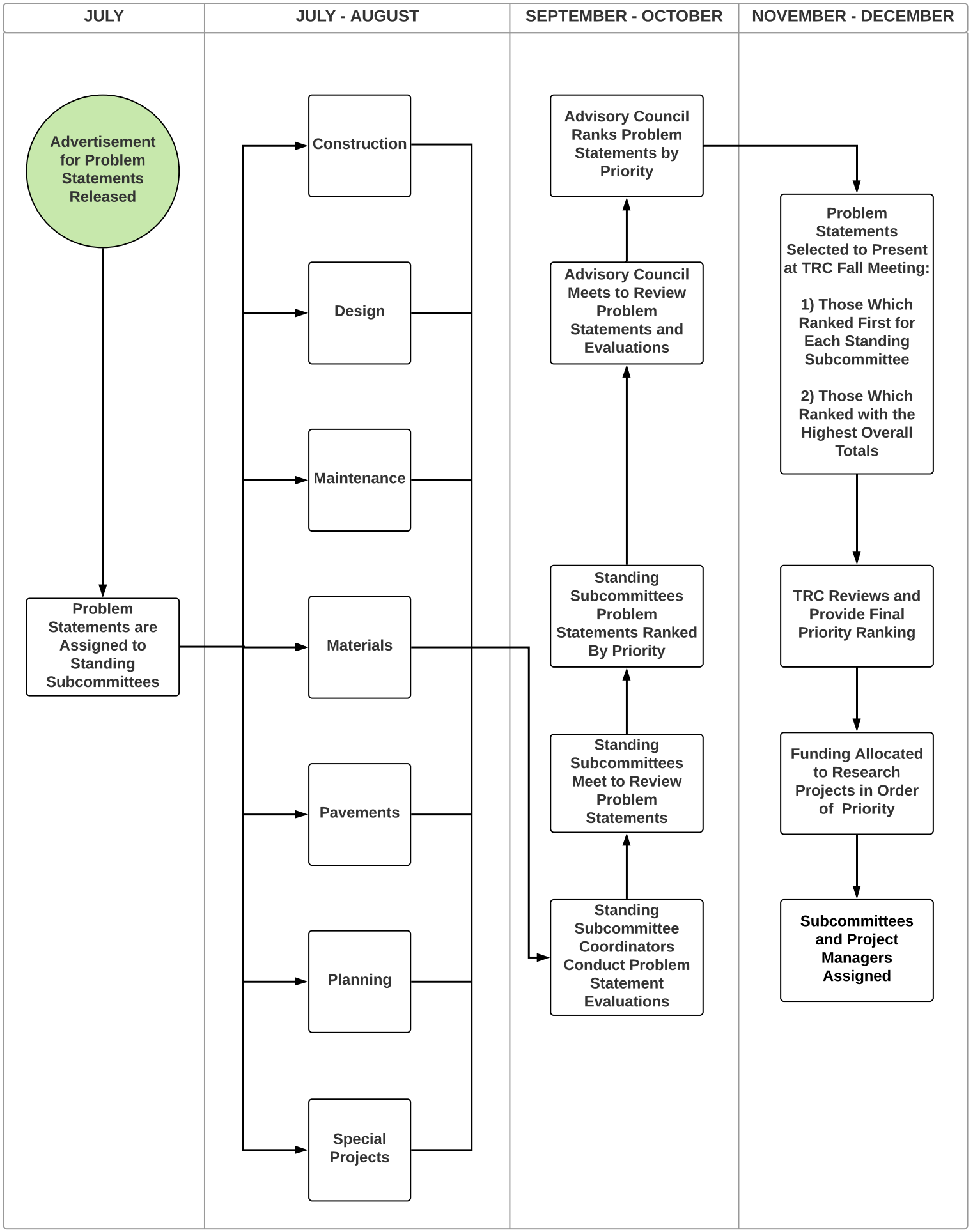
10. Reports: The Work Plan should define the type of reports that will be prepared in order to properly document the work and the fulfillment of the study objectives. (See Chapter 4 Section 4.3 for all required reports)

3.3 Related Forms

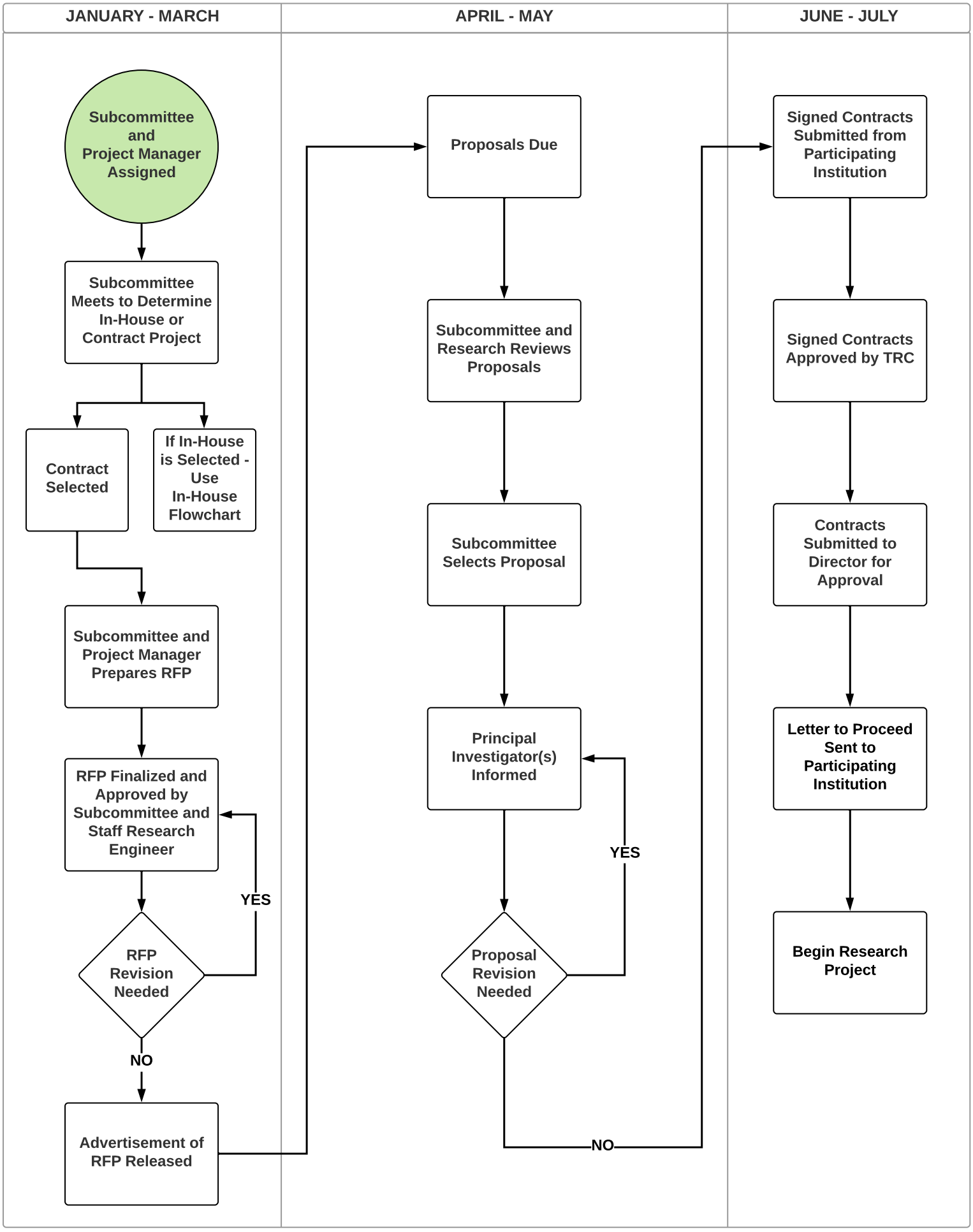
All of the following forms can be found in Appendix 1

- Problem Statement Form
- Problem Statement Evaluation Form
- Subcommittee Problem Statement Rejection Justification Form
- Ballot Form
- Research Project Implementation Tracking
- Contract Title Sheet
- Contract Budget Estimate
- Renewal Agreement Form
- Extension Agreement Form
- Contracted and In-House TRC Project Renewal Forms
- Contracted and In-House TRC Project Extension Request Forms
- Contracted and In-House TRC Project Budget Revision Request Forms
- Contract Level of Effort
- In-House Title Sheet
- In-House Budget
- In-House Level of Effort

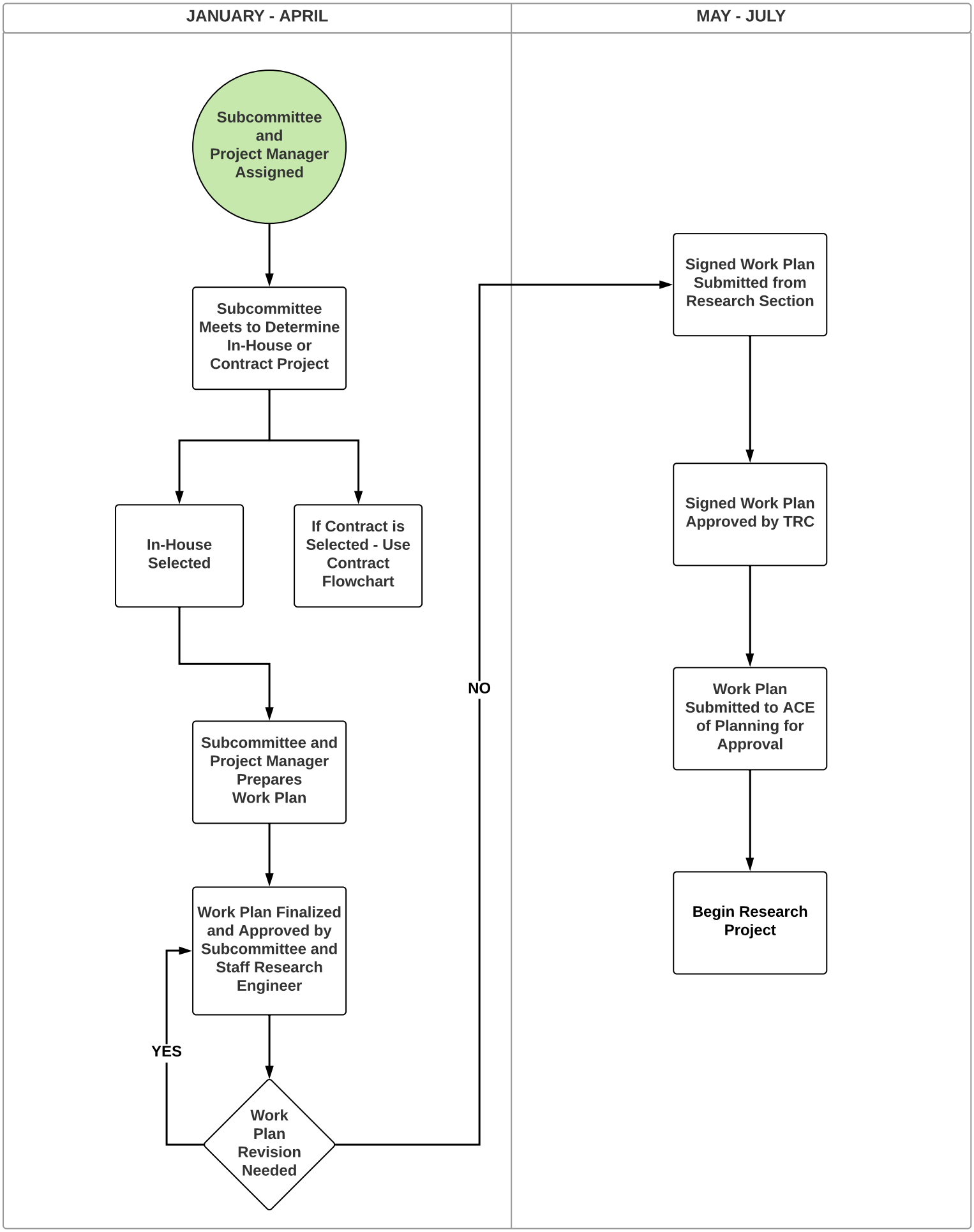
TRC RESEARCH PROJECT DEVELOPMENT PROCESS



TRC RESEARCH PROJECT - CONTRACT RESEARCH PROJECT PROCESS



TRC RESEARCH PROJECT - IN-HOUSE RESEARCH PROJECT PROCESS



Chapter 4: TRC Project Management

4.1 Introduction

In order to fulfill the duties and responsibilities, it is necessary that the PM be familiar with the Transportation Research Committee Constitution and By-Laws, Research Manual, the Code of Federal Regulations 23 CFR part 420, and the Basic Agreement with the contracting agency. These documents contain the basis for performing the functions of the PM, the content and format of proposals, In-House work plans, budgets, and copies of forms used in various phases of the Research Program from Problem Statement to Implementation.

The PM is responsible for arranging subcommittee meetings, with the advice and consent of the Chairperson, a non-voting member of the subcommittee, and serve as secretary to the subcommittee. Responsibilities of the subcommittee secretary will include keeping minutes of the meetings, assuring that they are distributed to the subcommittee members, TRC Chairperson and TRC Secretary. Other functions may be required by the subcommittee and/or chairperson.

Setting up and maintaining the Project Information Sheet, is of upmost importance. This will be used by the Staff Research Engineer, TRC Chairperson, and others to have easy access to your project's status, all in one location. Sheet should be stapled in the "A" folder of your project files. Audit Review Sheet, provides guidance on which folder correspondence is to be filed and is a check-off mechanism to make sure you have the valued correspondence that an auditor would be looking for when the audit on your project begins.

Close coordination of the efforts of several areas with the Department may be necessary. This may involve the scheduling of sample collection, traffic control, testing and other operations to the mutual convenience of affected Division and/or Districts.

When the proposal, work plan and budget have been reviewed and found satisfactory by the subcommittee, PI, and the PM, it is the duty of the PM to submit the proposal through proper channels for final approval and authorization to begin project work. When the contractor has begun work on a specific study, continual monitoring of that effort shall also begin. Per 2 CFR 200.339, the federal award may be terminated in whole or in part if the entity receiving the funds fails to comply with the terms and

conditions of the federal award. Monitoring shall consist of the following stated in Section 4.2 Contract Project.

4.2 Contract Project

Reporting

Reporting is required for all projects and is essential to the implementation of research findings. It is vital that these reports detail the progress and accomplishments of the project throughout its time line. There are strict federal requirements concerning progress reports associated with projects funded through Federal SPR Part 2 funds, per 23 CFR 420.117. The State DOT must submit performance and expenditure reports that show performance with meeting goals, progress with schedules, expenditures, revisions, and other pertinent supporting data.

Action Plan: Monthly action plan reports are completed by the PM and submitted to the Staff Research Engineer. The report provides necessary project information to the Subcommittee and Department personnel. These reports allow for an easy reference of progress, timeline, budget, and implementation. Information for the monthly action plans is gathered during the bi-weekly visits and monthly face-to-face meetings between the PM and PI.

Quarterly Reports: The Quarterly Progress Reports shall be prepared by the PI and submitted to the Staff Research Engineer. Quarterly reports must be available for review by the Federal government no later than 30 days after the end of the reporting period. Therefore, Quarterly reports are due to the PM no later than seven (7) days following the end of the quarter to ensure that the reports can be reviewed, revised, edited, etc. as needed by the Federal deadline. The Quarterly Report must be received before the quarterly claim can be paid. The report shall be prepared in sufficient detail to determine the work completed, the work underway, and the work scheduled for the next reporting period. An updated work time schedule shall accompany each report. The reports will be submitted to the subcommittee for their review and comments. All quarterly reports shall follow the outline provided in Appendix 1.

Interim Reports: Interim reports are to be prepared when called for in the Work Plan as major phases of the work are completed or when significant scientific

breakthroughs are realized. In addition to the uniform provisions for reports, interim reports shall include the following:

- Conclusions, findings, and results of the work for which the report is prepared.
- A "Highlight" summary consisting of a clear, concise statement of any significant development together with its meaning and potential application along with expected benefits to the Department.

Implementation Report: The Implementation Report will be prepared by the PI near the end of the actual research effort but prior to approval of the final report. The implementation report will be prepared in consultation with the project subcommittee. The PI and the subcommittee chairperson will present the report to the Research Implementation Committee. The report will make specific recommendations for the implementation of project finding, including:

- Whether or not findings are implementable;
    - If implementable:
        - Benefits expected from implementation.
        - Action needed to accomplish implementation.
        - Draft specifications if applicable.
        - Methodology for determining return of investment.
    - If not implementable:
        - The advisability of further research.
        - The extent of additional work needed to produce implementable results.

Final Report: The Final Report is required by the end date of each project being conducted for the Department. The report shall completely document all data gathered, analyses performed, and results obtained. An electronic and paper copy shall be submitted. All final reports must adhere to the guidelines contained in the "ARDOT Specifications for Research Reports". If excessive errors in formatting or grammar are present in the submitted Final report, the report will be sent back to the PI for a more complete proofing. All final reports shall contain, in addition to the uniform provisions, the following:

- An implementation statement indicating how the results can be applied and benefits expected to be derived from use of the findings.

- A separate section showing gains in the specific field of research together with the findings and conclusions of the study outlines.

- A summary statement of research implementation:
    - Pointing out any immediate practical application of the study findings.
    - Recommended procedure for implementation of results.
    - Potential benefits to be derived from the implementation.
    - If the findings are positive but not immediately implementable, the extent of additional work needed to produce results suitable for implementation.

- The report should indicate the proposed means and methods for translating the research product into applicable form for use.

- Technical Report Documentation Page: The standard title page, form DOT F 1700.7, must be included with the Final Report. Full instructions regarding the title page can be found in the "ARDOT Specifications for Research Reports" guide.

Upon receipt of the final report, the PM, PI, and Project Subcommittee Chairman should complete the Project Evaluation Form. This form is for internal use and shall be kept in the project files. It will be used for reference in consideration of PI's for future work with TRC projects. The final draft of the final report will not be accepted by the project subcommittee until a Project Evaluation Form has been completed by the PM.

Delinquent Finals: Final reports are due by the project end date. Failure to deliver the required Final Report at the project end date will result in the cancellation of the project and 25% of the total project cost will be retained by the Department.

Benchmark Reports: Benchmark Reports, when specified in the Contract or Work Plan, shall be prepared at certain critical intervals throughout the project, and shall contain a detailed discussion of progress, data, test results, and conclusions, and implementation of findings. The times that these reports shall be written will be established by the project subcommittee during review of the

proposal. The reports will be submitted to the subcommittee for their review and comments.

Annual Report: Annual Reports shall be prepared by the PM and submitted to the Staff Research Engineer of the System Information and Research Division by October 1st or at such other time as agreed upon. The report shall be prepared in sufficient detail to determine the work completed, the work underway, and the work scheduled for the next fiscal year. An updated work time schedule shall accompany each report.

Theses and Dissertations: In addition to reports and publications, the Department shall be furnished one (1) copy of any master's thesis or doctoral dissertation which is a result of any investigation or study on a research project sponsored by the Department under the Basic Agreement.

Outside Publications and Presentations: Submitting of any report to be published by an outside publication or presentation on the work being completed on any on-going contract project shall be submitted by the PI to the PM for the Department's approval before submission. This includes all submissions for Transportation Research Board.

Budget & Claims

Budget

The budget for a research project shall be either a costs reimbursement type contract, under which the Contractor performs the research project in return for payment of actual direct cost plus allowable indirect costs not to exceed a maximum amount, or a fixed price contract agreed to by the Department and the Contractor. The budget which is included in the Project Contract shall present a statement of itemized estimated costs for the total life of the project, the period from the initiation of the project to the close of that fiscal year on June 30th, and the total for each subsequent fiscal year. A budget sheet will be completed for each fiscal year and an additional sheet shall be completed for total project costs.

The approval of the Project Contract constitutes the approval of the maximum limiting amount for the total period of the project and the approval of the budget for the first fiscal year. For each subsequent fiscal year or portion thereof covered by the

Project Contract the Contractor shall submit to the Department a Project Renewal Agreement and a Contract Project Renewal Form for that fiscal year. The budget submitted with the Extension form shall coincide with the original budget. Unspent funds will not be carried over to the next fiscal year. Occasionally, extenuating circumstances arise which requires additional time to be added to the project timeline. The Contracted TRC Project Extension Request Form is to be submitted by March 15 to the Staff Research Engineer.

The project budget is considered to be the maximum amount and shall not be exceeded. A TRC Budget Revision Request form shall be submitted at the time of the project's annual renewal if it becomes necessary to increase or decrease a line item in the budget. The Contracted TRC Project Budget Revision Form shall be sent to the Staff Research Engineer by the Contracted Agency. The tuition line item cannot be transferred to another line item. This revised budget requires the approval of the Department and in some cases, FHWA. Expenditures may exceed authorized line item amounts by up to 25%, provided that the total authorized annual budget is not exceeded. The allowable overrun does not apply to salaries, wages, fringe benefits, and indirect costs.

When a fixed price contract is used, detailed budgets shall be prepared the same as for cost reimbursable contracts as required in the Manual. These budgets are to be used to determine a reasonable contract amount. Annual Renewal Agreements shall be submitted for fixed price contracts.

Project Extensions and budget revisions will ***only*** be considered under the following circumstances:

- ARDOT changes scope of the project after the project has started.
- Equipment line item was underestimated at the signing of contract.
- Delay to the project due to construction schedules or construction job let dates, natural disasters, death or major hospital stays, retirements, PI leaving the university, or government shutdown.

Claims

The procedures and documentation necessary for reimbursement of cost incurred by the Contractor while engaged in a Department sponsored research project shall meet the cost accounting standards set forth in Appendix B of the Code of Federal Regulations (CFR) Title 48 and the requirements for allowable costs stated in CFR Title

48 Chapter 1. The requirements of CFR Title 48 Chapter 1 shall apply to all research contracts. A general rule is that costs to a research project shall have a reasonable and fair basis of allocation.

The Department requires adequate documentation of charges incurred on the research project before reimbursement is made. Any claim for reimbursement that does not adequately document a charge may be disallowed. The Department will reconsider such a disallowed item if the Contractor submits written documentation supporting the charge in question.

Reimbursement claims for each quarterly claim period shall be submitted with the most up-to-date Claim Form found on ARDOT's website. Claims shall be submitted within 45 days of the quarter's last day, excluding the fourth quarter claim which is to be submitted as soon as possible after the end of the fiscal year. Payment of fourth quarter claims will be included in Part II of the SPR budget and work program for the following year. Submittal of claim requires that the Quarterly Report be attached in order to proceed with reimbursement. The payment provision shall be in accordance with the Arkansas State Procurement Laws and Regulations requirements and may permit interim payments based on satisfactory completion of specified portions of the research project.

Reimbursement of the Contractor by the Department for unpaid claims will be withheld until a satisfactory Final Report has been submitted to the Department as fulfillment of the requirements set forth in this Research Manual. An amount up to twenty-five percent (25%) of the contract price will be withheld until a satisfactory Final Report has been received and accepted by the Department. The final claim shall be the submitted for the quarter in which the project officially terminates. No additional charges may be made to a project after submission of the final claim for that project.

Claim forms shall be completed in full to include the percentage of time used and percentage of work completed. The percentage of time completed shown on claims submitted by the contractor shall be in accordance with the time line of the Project Contract. Should the claim forms not be completed in all aspects, they will be returned to the Contractor for completion and payment will be withheld until they are satisfactorily completed.

Exception by the Department to the billing will be listed on the claim form in the block for Auditor's Exception, as detailed in auditor's reports on research project

expenditures. The Contractor will have thirty (30) days to make rebuttals to the auditor's exceptions.

Under some circumstances, the Contractor pays Sales and/or Use Taxes to the Department of Finance and Administration on out-of-state purchases. Since the payment of the taxes is not included in the voucher amount for the purchase, it is not reflected in the actual research project costs. Therefore, an amount equal to the pro rata share of such taxes may be charged to the research project under the appropriate line item when substantiating documentation of such charges is available. These taxes should be added to the appropriate invoice for processing. Should the taxes be for major purchases, such as for equipment, it will be necessary to include the taxes in the total cost of the purchased item for capitalization purposes.

Cost Reimbursable Contracts

The total charges claimed by the Contractor during any budget period shall not exceed the amount specified in the budgets of the Project Contract for the budget period, or the actual cost incurred by the Contractor, whichever is less. These claims, on Claim Form shall include documentation showing the breakdown of the charges to the project. The breakdown of line items shall be as follows:

1. Salaries and Wages: Voucher number, name of employee, and amount charged against the research project shall be shown in a Payroll Action Form format. The PAF shall document the project costs on a weekly basis.

2. Fringe Benefits: The amount of actual expenditures for fringe benefits up to a maximum of 24.07% of salaries or wages for each individual may be claimed by the Contractor for reimbursement. These charges, if charged to the research project budget as a direct cost, cannot be used in the calculation of any other institutional indirect cost rate. Fringe benefits include Federal Insurance Contributions Act tax (FICA), life, hospitalization, unemployment insurance, retirement and workers' compensation. The Department at any time may audit these charges.

3. Supplies and Services: Charges for supplies and services that were used on or directly incorporated into the research project and are not included in the fifteen percent (15%) indirect cost may be charged against the project.

   Supplies for reproduction services are reimbursable as direct costs. However, accountability of the charges is sometimes hard to establish.

Therefore, any expenses for such items submitted to the Department for reimbursement shall include a statement from the PI that these charges are accurate and directly attributable to the project and easily identified by the PM and the auditors.

Charges for telephone calls will be allowed as a direct cost provided that such charges are not included in Indirect Costs and that details of calls are included in supporting documentation. This will include the date and time of call, area code, number called, person and firm call, and name of person placing the call. Charges for telephone service will be allowed provided that such costs are in direct proportion of use for the conduct of a project. Documentation will include total amount of service charges for the line, instrument, etc., and total amount service charges for use on the project.

Equipment purchases over $100 shall not be included in this line item. Purchases may not be split in order to keep them from being added to the Equipment line item. These charges shall be documented to the satisfaction of the PM and shall include a copy of the paid invoice. Invoices shall include: Voucher number and date, vendor from which the purchase was made, description of the purchase (identifying code numbers are acceptable), and the amount charged to the project (OMB Circular A-21).

All proposed budgets for TRC projects shall include calculations for professional editing/proofreading services in the final year's budget. If the PI has not selected a professional to use at the start of the project, it is the PI's responsibility to have an estimated price for the budget proposal. When the final is submitted to the PM, the PI is required to verify that the report has been previously edited by including the Editor's name and contact information. This expenditure will be charged and documented on the final project claim.

4. Travel: Trips made in connection with the research project shall show the person making the trip, indication as to what the charges are, such as car rental, airfare, meals, lodging, etc., and total charged for each individual item. According to Arkansas State Travel regulations, airline tickets should be purchases at least 14 days prior to travel and first class fare is not to be utilized unless it is more economical. Supporting documentation shall be submitted and include a Travel Expense Detail Report for each person seeking travel reimbursement, accompanied by receipts for all hotel, air and ground transportation and miscellaneous purchases. Travel will only be paid for the

days in travel for the corresponding project. Meals are not accepted if overnight travel is not claimed. The Department reserves the right to not reimburse any travel expense not included on the Travel Expense Detail Report and/or not properly verified. Further instructions and information on allowable costs may be found on the Travel Expense Detail Report.

Out-of-State travel *shall be* pre-approved by the Department in advance of the travel. The letter requesting approval for out-of-state travel should include an out-of-state travel authorization request. The form shall be submitted at least two months (60 days) in advance of the intended travel to permit proper review and approval. PM is required to attach all out-of-state travel documentation to the claim submittal.

5. Indirect Costs: Administrative costs and utilities may be charged to the research project at the rate of fifteen percent (15%) of the Modified Total Direct Cost. Distribution of Indirect Costs shall be made on the basis of Modified Total Direct Costs in accordance with OMB Circular A-21.

6. Tuition: The cost of tuition for graduate students who plan to work on the research project shall be listed in the project contract. Official certification of tuition must be provided and authorized by the universities Director of Research Accounting. Funds for graduate student tuition cannot be transferred to another line item and is not allowed to be included in the calculation for indirect costs on the research project.

7. Subcontracts: The Contractor shall supply the Department with a salary schedule for contract personnel who are assigned to highway research projects. This schedule shall include the name and salary of the personnel working on the research project, the length of the contract, and description of the contract work planned. Subcontracts are not allowed to be included in the calculation for indirect cost on the research project. Equipment purchases are prohibited on a Subcontract and shall be made by the PI and listed within the Equipment section.

8. Equipment: This line item shall include equipment that costs $100 and over purchased and/or fabricated, rental charges, software and/or license, and subcontracts which have been specifically set forth in the Project Contract. The backup documentation for rental shall include, voucher number, Agency or Department to which the rental is paid, name of the equipment and amount charged to the project. The documentation for equipment purchase shall be

submitted with a copy of the paid invoice and an Equipment Capitalization Notice for non-expendable equipment and listed on the Research Equipment Inventory Record. Routine and expendable equipment will be listed on the Research Equipment Inventory Record only until completion of the project and disposition determined by the Department. Charges in equipment line item are not included in the calculation for indirect cost on the research project.

Fixed Price Contracts

Where fixed price contracts are used, the Contractor may submit periodic claims for partial payment based on the percentage of work completed. The claim form shall show the amount being claimed, all items of equipment purchased during the claim period and the percentage of work completed. In no event shall the percentage of the contract amount claimed for reimbursement, excluding amounts claimed for major equipment purchases, exceed the percentage of work completed. An amount up to twenty-five percent (25%) of the contract shall be withheld until a satisfactory Final Report has been received and accepted by the Department.

Project Prior Approval & Requirements

One of the most common mistakes made by contractors concerning budgetary matters is failing to obtain approval before taking action. Some requests may be taken through FHWA for their approval. Actions taken by the Contractor without approval will be disallowed. It should be noted that these approval requirements are for the most common types of studies and may not include every possible situation.

Changes in scope, personnel, implementation and other categories will be approved by the recommendation of the TRC secretary to the TRC and/or the Project Subcommittee on a case-by-case basis depending on the needs of the Research. A budget change that involves an increase in the total federal funds authorized for the work program requires prior FHWA approval and authorization. Similarly, changes in the work program (line item, contracting out, etc.) as specified in 49 CFR 18.30 require prior approval.

Equipment and Equipment Inventory

Equipment and supplies purchased with Federal FHWA SPR funds are governed by the rules and regulations of 23 CFR 420 and 2 CFR 200 as well as any related CFR

and/or OMB Circulars referenced therein. These rules and regulations are subject to change. The current version of the rules and regulations will be enforced. The methods and procedures for acquisition, approvals required, reimbursement and final disposition for the classifications of equipment are set forth as follows:

Routine Equipment includes the instruments, machines, and apparatuses of a non-expendable nature that have been acquired and are used and required in the regular administrative functions of teaching, research, and scientific studies by the Contractor and are considered routine. Computers for running machines, desktops and laptops along with software will fall into this classification. The cost of wear, tear, maintenance and operation is considered a part of the indirect cost of transportation research, and no charge of any nature on such equipment shall be made against any project. These items should be expensed through the indirect cost reimbursement.

Expendable Equipment or Instruments are those minor items required for a specific research project which will be fully utilized or expended on the work and will have no residual value upon completion of the study. For the research project accounting purposes, expendable equipment is equipment with an acquisition cost of over $100.00 and an expected useful life of five (5) years or less. The cost of such equipment shall be included in the budget as a separate category under "Equipment". Non-retrievable items which would otherwise be classified as non-expendable will be considered to fall into this category. Any items of question will be determined by the Department.

Non-expendable or Special Equipment are those major items of scientific apparatuses purchased or fabricated with a useful life of more than five (5) years and/or an initial cost greater than the Department limit which is $100.00 at the time of this printing. The Contractor may not parcel or split any item or items of equipment with the intent or purpose to change the classification or to enable the equipment purchase to be made under a less restrictive classification.

Equipment may be rented by the Contractor from the supplier and charges for the rental made to the project upon approval of the rental rate by the Department before project work begins.

The equipment may be purchased outright by the Contractor and charged to the project under a rental rate based upon estimated life plus normal maintenance after approval of the rental rate. Ownership of such items remains with the Contractor when the project is completed.

If included in the approved budget, special equipment may be purchased or fabricated by the Contractor and charged to the project when bought, provided the item is acquired under regular state purchasing procedures. Under this procedure actual maintenance and repair costs may be charged to the project.

All "Non-expendable" Equipment purchased and/or fabricated with project funds shall be capitalized on Departmental property records for accounting purposes. The Contractor shall not capitalize any equipment purchased with project funds. Such records shall reflect the Department's ownership of the equipment. Upon receipt of non-expendable equipment, the Contractor shall notify the Department so that arrangements for capitalization may be made. The Equipment Capitalization Notice shall be used for this purpose. Such notice shall be signed by both the PI and the appropriate Department Head of the contracting agency. Information such as the name of the equipment, date of acquisition or completion of purchase and/or cost of fabrication, and identification number shall be shown on the record.

During the initial monthly meeting between the PI and PM, all procedures for completing the Equipment Capitalization Notice and the Research Equipment Inventory Record should be discussed and understood that all equipment, regardless of classification will be capitalized. All equipment whether routine, expendable or non-Expendable shall be listed on the Research Equipment Inventory Record for that particular project. Any equipment included on a quarterly claim must be recorded on the Research Equipment Inventory Record and, if applicable, capitalized with an Equipment Capitalization Notice or the cost will not be allowed. Routine and expendable equipment listed on the Research Equipment Inventory Record will be capitalized at the ending of the Research Project when the disposition of the equipment is determined by the Department. Non-expendable equipment will be capitalized with the Equipment Capitalization Notice submitted by PI at time of purchase. A Department Form (19-118) will then be submitted to Fiscal Services Division for Capitalization into ARDOT Inventory System.

Disposition of Equipment acquired on research projects will be at determined by the Department with the following options:

- The equipment may be transferred to another project with the residual value amount credited to the original project and charged to the second project. This method will include the storage of equipment for use on a future project.

- The Department may elect to retain the equipment for its own use, provided that the residual value shall be established and credited to the project if the equipment is used for purposes other than research.

- The Contractor may be allowed to acquire the equipment for the amount of the residual value as established and agreed upon by the Department and the Contractor, subject to concurrence of the FHWA. The project will be credited for the amount received as residual value. This method of disposition is in accordance with provisions of the State Financial Management Guide of the Department of Finance and Administration.

File Management (For ARDOT Personnel)

Every Contract Project is required to be organized in its own folder with six (6) subfolders named:

- A-Correspondence
- B-Agreement and Proposal
- C-Progress Reports
- D-Equipment
- E-Audit
- F-Data

These subfolders allow for someone other than the PM to become up to date on a project without explanation. A hard copy shall be located in the paper files and an electronic copy shall be located on the ARDOT server under the corresponding project name. The items that belong in each folder are detailed below.

A-Correspondence:

- Any correspondence transmitting documents to or from subcommittee, PI, PM, contractor, etc.
- Project Information Sheet stapled to the front of the folder.
- Project Information Sheet shall be filled out once the project has begun and kept up to date as the project progresses.

B-Agreement and Proposal:

- RFP
- Proposal
- Project Contract

- Work Plan
- Extension & Renewal
- Any budget revisions

C-Progress Reports:

- Quarterly Reports
- Annual Reports
- Action Plans
- Interim Reports
- Benchmark Reports
- Implementation Reports;
- Thesis/Dissertation (if applicable)
- Final Report

D-Equipment:

- Any equipment over $100.00 shall be noted
- Research Inventory Record.
- Equipment Capitalization Notice

E- Audit:
Documents that pertain to

- Time
- Money
- Personnel Changes
- Claims
- Backup documentation for claims

F- Data:
Documents that pertain to

- Data collected in the field
- Data collected across the Department
- Data produced in the lab
- Pictures taken during field or lab work
- Supporting information found during the course of the project

Implementation Tracking

The PM is required to document all major steps of implementation throughout the life of the project. The major steps of implementation are (See 5.6 for the complete Implementation Program):

1. The PM, the RIC, the PI, and subcommittee meet at the beginning of the project and determine an Implementation Plan. This plan can be adjusted throughout the project based on the research findings.

2. The PM will serve as the liaison between the subcommittee and the part of the Department implementing the project results.

3. Six (6) months before project completion the PM meets with the PI, the RIC, a member of the Research Implementation Committee, and the subcommittee to complete a more in-depth Implementation Plan that will be put into place at the end of the project. Potential modifications of the project may be necessary to enhance the implementation that will be made. The Implementation Report will be prepared following the meeting.

4. For three (3) consecutive years, the Implementation Plan enacted at the completion of the project shall be monitored and the Research Project Implementation Tracking documents shall be filled out and filed every year by the RIC.

4.3 In House Project

Reporting

Reporting is required for all projects and is essential to the implementation of research findings. It is vital that these reports detail the progress and accomplishments of the project throughout its time line.

Action Plan: Monthly action plan reports are completed by the PM and submitted to the Staff Research Engineer. The report provides necessary project information to the Subcommittee and Department personnel. These reports allow for an easy reference of progress, timeline, budget, and implementation. Information for the

monthly action plan is gathered during the bi-weekly visits and monthly face-to-face meetings between PM and PI, if the PM is not the PI.

Annual Report: Annual Reports shall be prepared by the PM and submitted to the Staff Research Engineer by October 1st or at such other time as agreed upon. The report shall be prepared in sufficient detail to determine the work completed, the work underway, and the work scheduled for the next fiscal year. An updated work time schedule shall accompany each report.

Implementation Report: The Implementation Report will be prepared by the PI near the end of the actual research effort but prior to approval of the final report. The implementation report will be prepared in consultation with the project subcommittee. The Principal Investigator and the subcommittee chairperson will present the report to the Research Implementation Committee. The report will make specific recommendations for the implementation of project finding, including:

- Whether or not findings are implementable.
    - If implementable:
        - Benefits expected from implementation.
        - Action needed to accomplish implementation.
        - Draft specifications if applicable.
    - If not implementable:
        - What related research is advised or warranted in the future.
        - The extent of additional work needed to produce implementable results.

Final Report: The Final Report is required at the completion date of each project being conducted for the Department. The report shall completely document all data gathered, analyses performed, and results obtained. All final reports must adhere to the guidelines contained in the "ARDOT Specifications for Research Reports" (add hyperlink when it is online). All final reports shall contain, in addition to the uniform provisions, the following:

1. An implementation statement indicating how the results can be applied and benefits expected to be derived from use of the findings.

2. A separate section showing gains in the specific field of research together with the findings and conclusions of the study outlines.

3. A summary statement of research implementation
    a. Pointing out any immediate practical application of the study findings.
    b. Recommended procedure for implementation of results.
    c. Potential benefits to be derived from the implementation.
    d. If the findings are positive but not immediately implementable, the extent of additional work needed to produce results suitable for implementation.

4. The report should indicate the proposed means and methods for translating the research product into applicable form for use.

5. Technical Report Documentation Page: Is a standard title page, form DOT F 1700.7 shall be included with Final Report. Full instructions regarding the title page can be found in the "ARDOT Specifications for Research Reports" guide.

Equipment Inventory

For In House projects, any item purchased and/or fabricated under the project priced at greater than or equal to $100.00 and has a useful life of more than five (5) years shall be capitalized for inventory purposes.

File Management

Every Contract Project is required to be organized in its own folder with six (6) subfolders named:

- A-Correspondence
- B-Agreement and Proposal
- C-Progress Reports
- D-Equipment
- E-Audit
- F-Data

These subfolders allow for someone other than the PM to become up to date on a project without explanation. A hard copy shall be located in the project file and an electronic copy shall be located on the ARDOT server under the corresponding project name. The items that belong in each folder are detailed below.

A-Correspondence:

- Any correspondence transmitting documents to or from subcommittee, PI, PM, contractor, etc.
- Project Information Sheet stapled to the front of the folder.
- Project Information Sheet shall be filled out once the project has begun and kept up to date as the project progresses.

B-Agreement and Proposal:

- Project Contract
- Work Plan
- Extension & Renewal
- Any budget revisions

C-Progress Reports:

- Annual Reports
- Action Plans
- Implementation Report
- Final Report

D-Equipment:

- Any equipment over $100.00 shall be noted
- Research Inventory Record
- Equipment Capitalization Notice

E- Audit:

Documents that pertain to

- Time
- Money
- Personnel Changes
- Claims
- Backup documentation for claims

F- Data:

Documents that pertain to

- Data collected in the field
- Data collected across the Department
- Data produced in the lab
- Pictures taken during field or lab work
- Supporting information found during the course of the project

Budget

The budget for an In House Work Plan is a summary tabulation showing the staffing plan, estimated personnel requirements, and cost for the full term of the study broken down by each fiscal year. The In House Project Renewal Form shall be completed and submitted by March 15 for each Fiscal Year from the start of the project. If there is to be a project extension the In House Project Extension Form shall be completed and submitted to the Staff Research Engineer. This shall be submitted for the project work to continue. The estimate should include:

- Salaries
- Supplies and services
- Travel
- Equipment (purchase/rental)
- Sub-contract (if applicable)

Implementation Tracking

The PM is required to document all major steps of implementation throughout the life of the project. The major steps of implementation are:

1. The PM with the PI and subcommittee meet at the beginning of the project and determine an Implementation Plan. This plan can be adjusted throughout the project based on the research findings.

2. The PM will serve as the liaison between the subcommittee and the part of the Department implementing the project results.

3. Six (6) months before project completion the PM meets with the PI, the RIC, a member of the Research Implementation Committee, and the subcommittee to complete a more in depth Implementation Plan that will be put into place at the end of the project. Potential modifications of the project may be necessary to enhance the implementation that will be made. The Implementation Report will be prepared following the meeting.

4. For three (3) consecutive years, the Implementation Plan enacted at the completion of the project shall be monitored and the Research Project

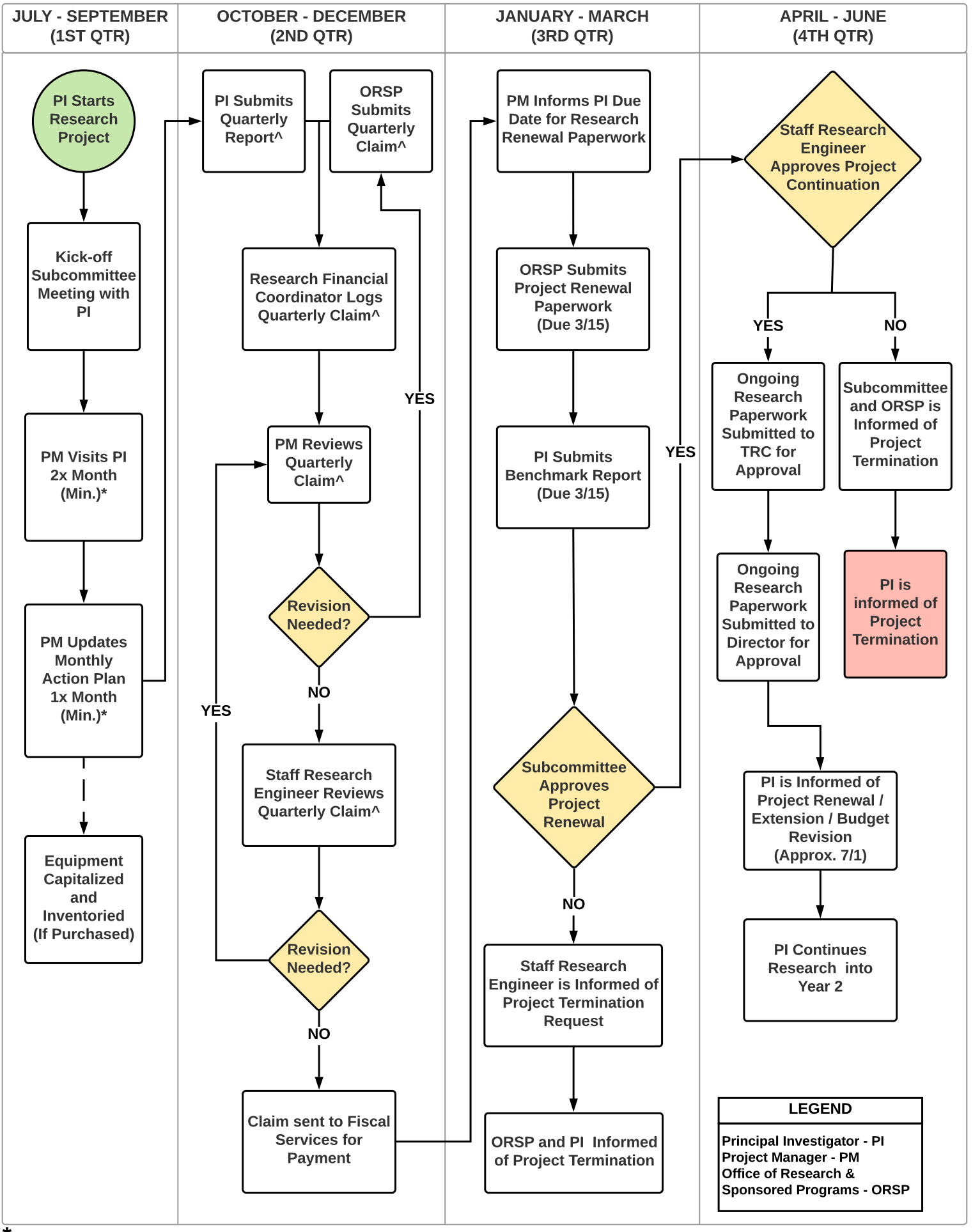
Implementation Tracking documents shall be filled out and filed every year.

4.4 Related Forms

All of the following forms can be found in Appendix 1

- Project Information Sheet
- Audit Review Sheet
- Action Plan
- Quarterly Report
- Interim Report
- Technical Report Documentation Page
- Annual Report
- Budget Sheet
- Renewal Agreement Form
- Extension Agreement Form
- Contract Project Renewal Form
- In House Project Renewal Form
- Contract Project Extension Request Form
- In House Project Extension Form
- Contract Project Budget Revision Request Form
- Claim Form
- Travel Expense Detail Report
- Out-of-State Travel Authorization
- Equipment Capitalization Notice
- Equipment Inventory Record
- Project Evaluation Form
- Research Project Implementation Tracking

TRC RESEARCH PROJECT MANAGEMENT PROCESS (YEAR 1)

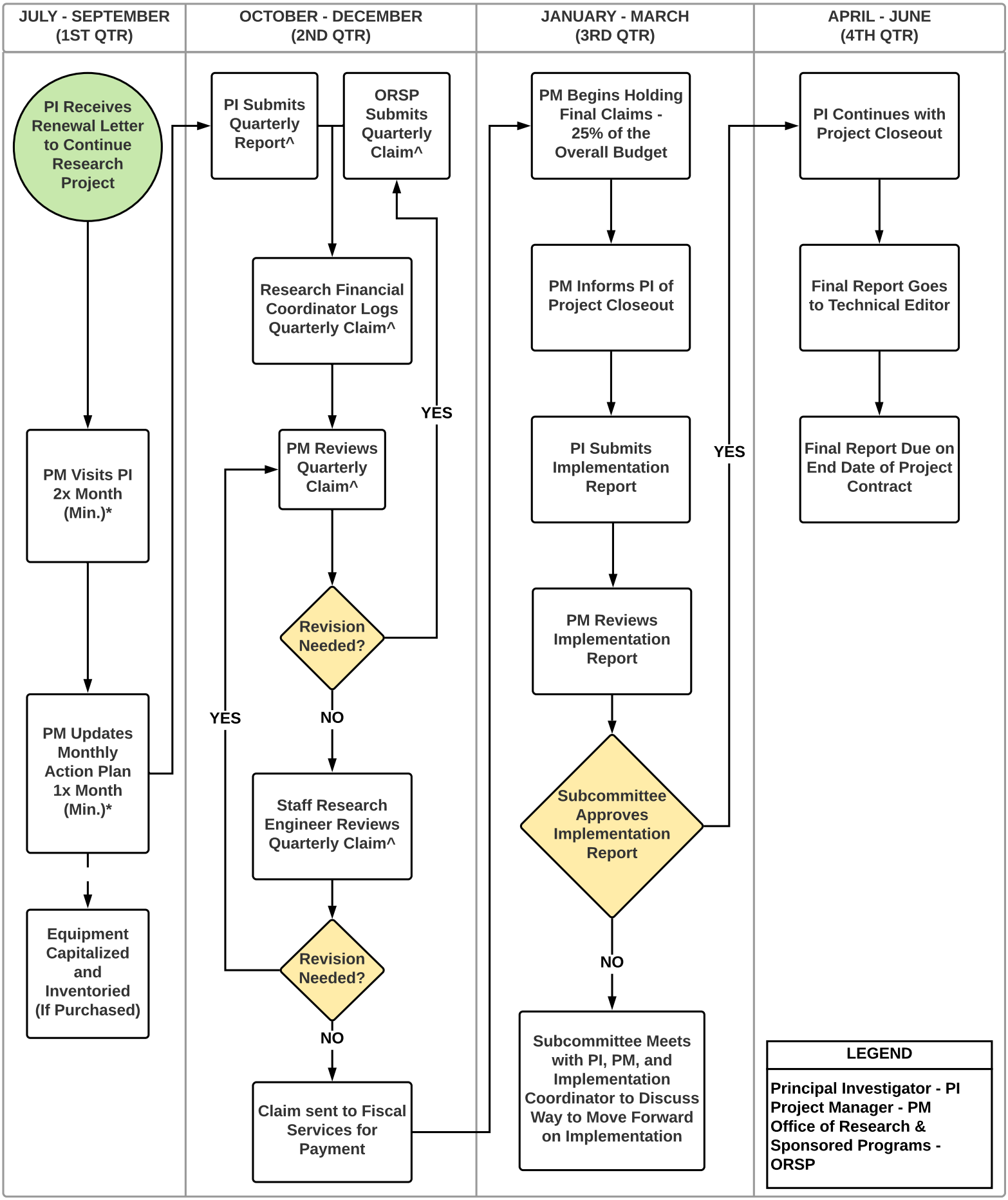


***** - These Activities are Performed Every Month for the Duration of the Project

^ - These Activities are Performed Every Quarter for the Duration of the Project

Last Modified: 1/31/2019

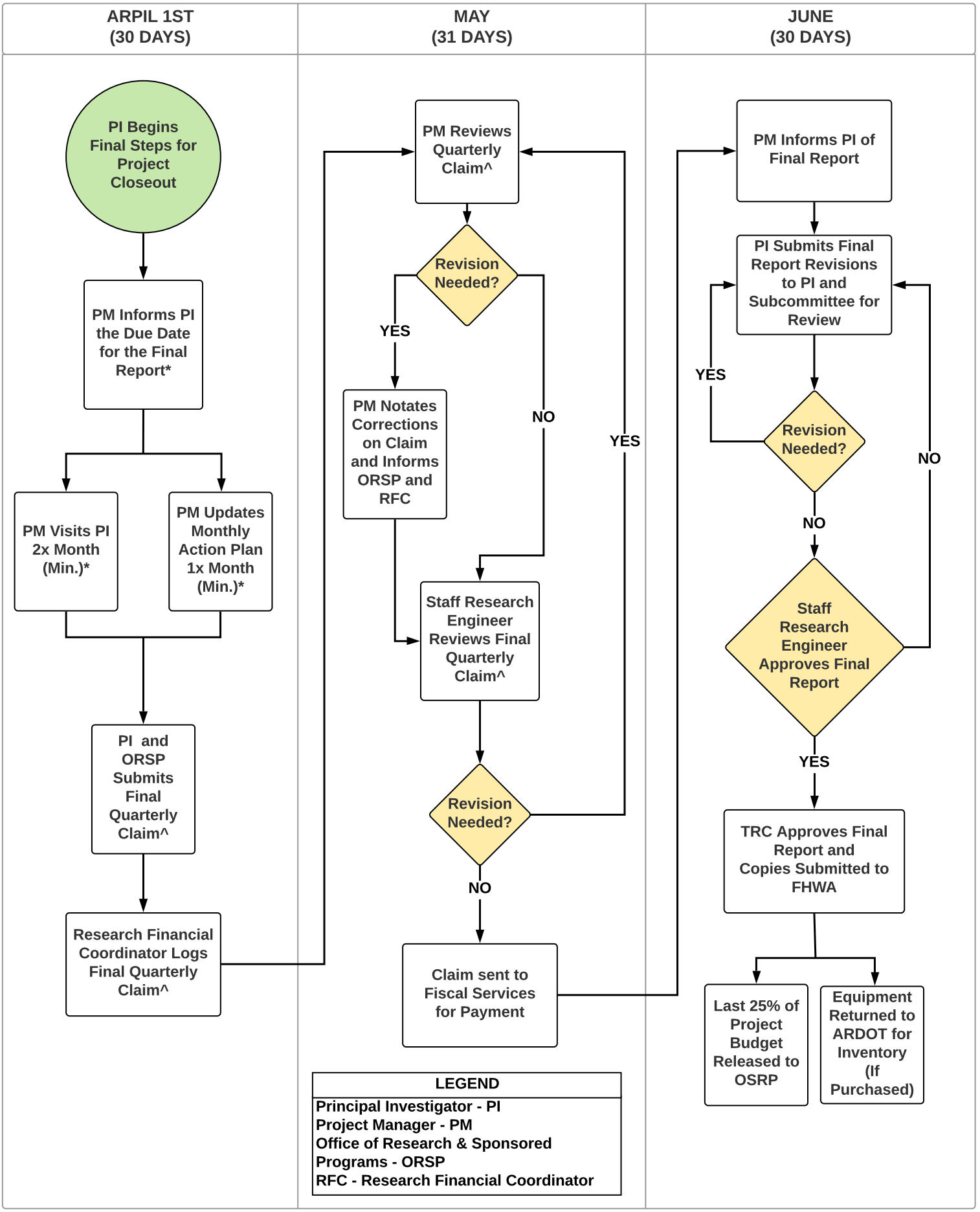
TRC RESEARCH PROJECT MANAGEMENT PROCESS (YEAR 2)



***** - These Activities are Performed Every Month for the Duration of the Project

^ - These Activities are Performed Every Quarter for the Duration of the Project

TRC RESEARCH PROJECT MANAGEMENT PROCESS - PROJECT CLOSEOUT

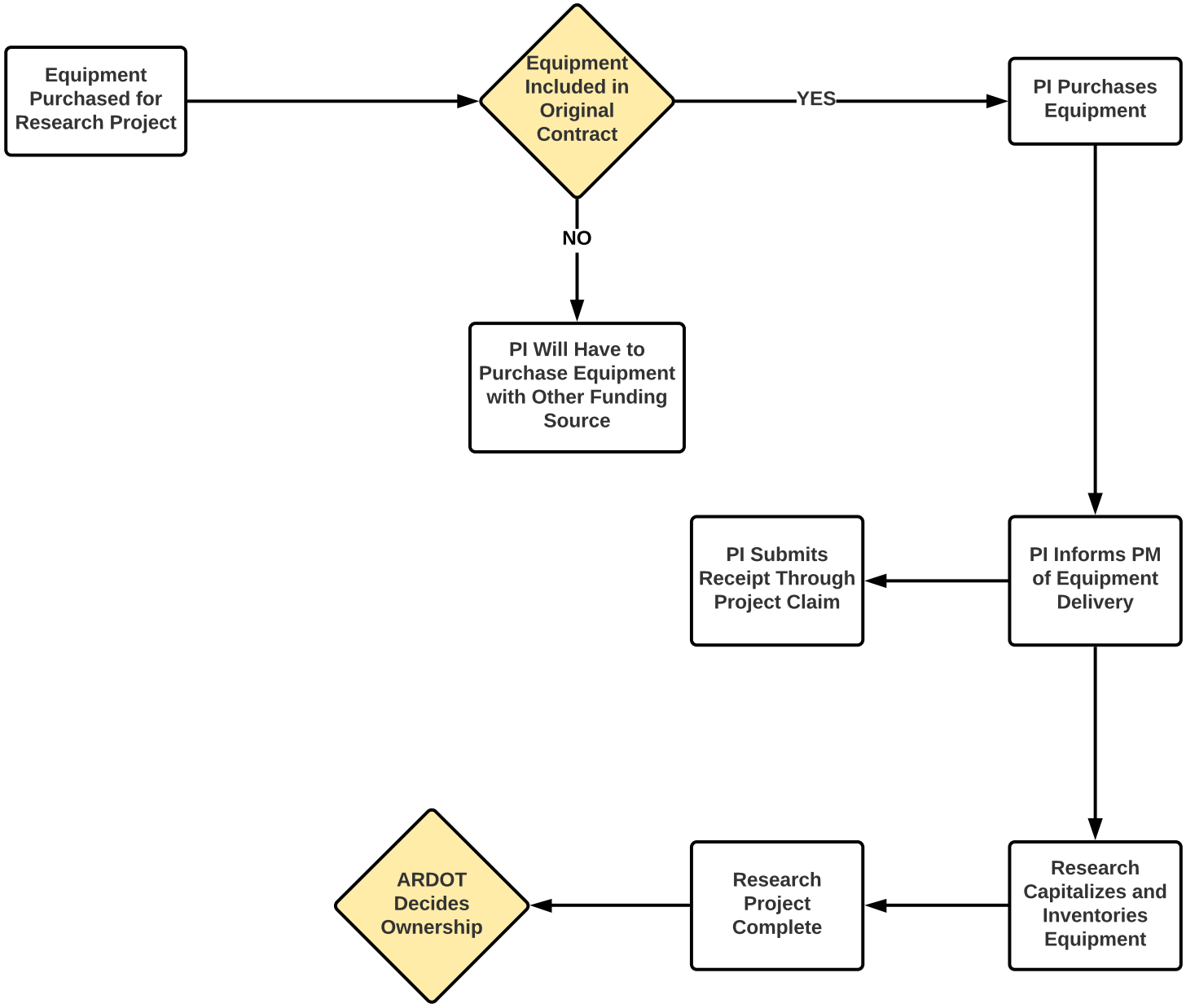


***** - These Activities are Performed Every Month for the Duration of the Project

^ - These Activities are Performed Every Quarter for the Duration of the Project

Last Modified: 2/4/2019

TRC RESEARCH PROJECT EQUIPMENT INVENTORY PROCESS - CONTRACT PROJECT



LEGEND
Principal Investigator - PI Project Manager - PM

Chapter 5: Non-TRC Research Process

5.1 Contract Process

The Department at times may have an immediate research need that is not best met through the TRC process. The Arkansas Highway Commission can authorize the Department to enter into an agreement with an individual, organization, university, or private consultant firm to research solutions for the immediate need with Quick Turnaround Projects, typically lasting not more than one year. The contract may have requirements to furnish services such as: engineering research; technical advice and services; materials testing; equipment design, construction and testing. The main ways these non-TRC projects are conducted is by utilizing on-call Consultants and Engineer and Research Services contracts.

5.2 Consultant Process

The procedures for selecting on-call consultants is set by the Department's Consultant Services office and are in accordance with federal regulations as defined in 23 CFR Part 172. Research will follow all rules and procedures as laid out in the "Consultant Selection Procedures for Engineering and Design Related Services", the Department's handbook most recently updated December 2016. Full details regarding the process may be found by reviewing that document here.

5.3 Engineering and Research Services (EARS) Contracts

The purpose of EARS is to provide a mechanism for the Department to contract for specialized services with universities and contractors without going through the formal contracting program. A formal agreement with defined tasks will be established for the services are performed.

The types of services covered under this agreement are, but not limited to:

- Equipment fabrication and testing.
- Materials testing.
- Technical advice.

5.4 In-House Process

All members of the Research Section are expected to be actively working on at least one in-house research project under normal circumstances. Unless otherwise

instructed by the Staff Research Engineer, every Research staff member can expect to perform the following steps annually.

Process:

1. At the beginning of each fiscal year, all Research staff members are to propose an in-house research project for consideration. Once approved by the Staff Research Engineer it will be included in the staff's responsibilities.

2. The in-house projects should be limited to one-year projects with findings that are implementable within two years.

3. The In-House Research Proposal should include at a minimum: problem statement, objectives, and simplified methodology.

4. Upon review and approval by the Staff Research Engineer, the staff member shall conduct the research over the next year. An Action Plan shall be created and updated monthly until the project is completed and finalized.

5. A final report according appropriate to the scope and topic of the project should be completed by the end of the fiscal year. This report shall include an implementation plan outlining how the findings might be implemented at the Department.

5.5 Local Research Initiative

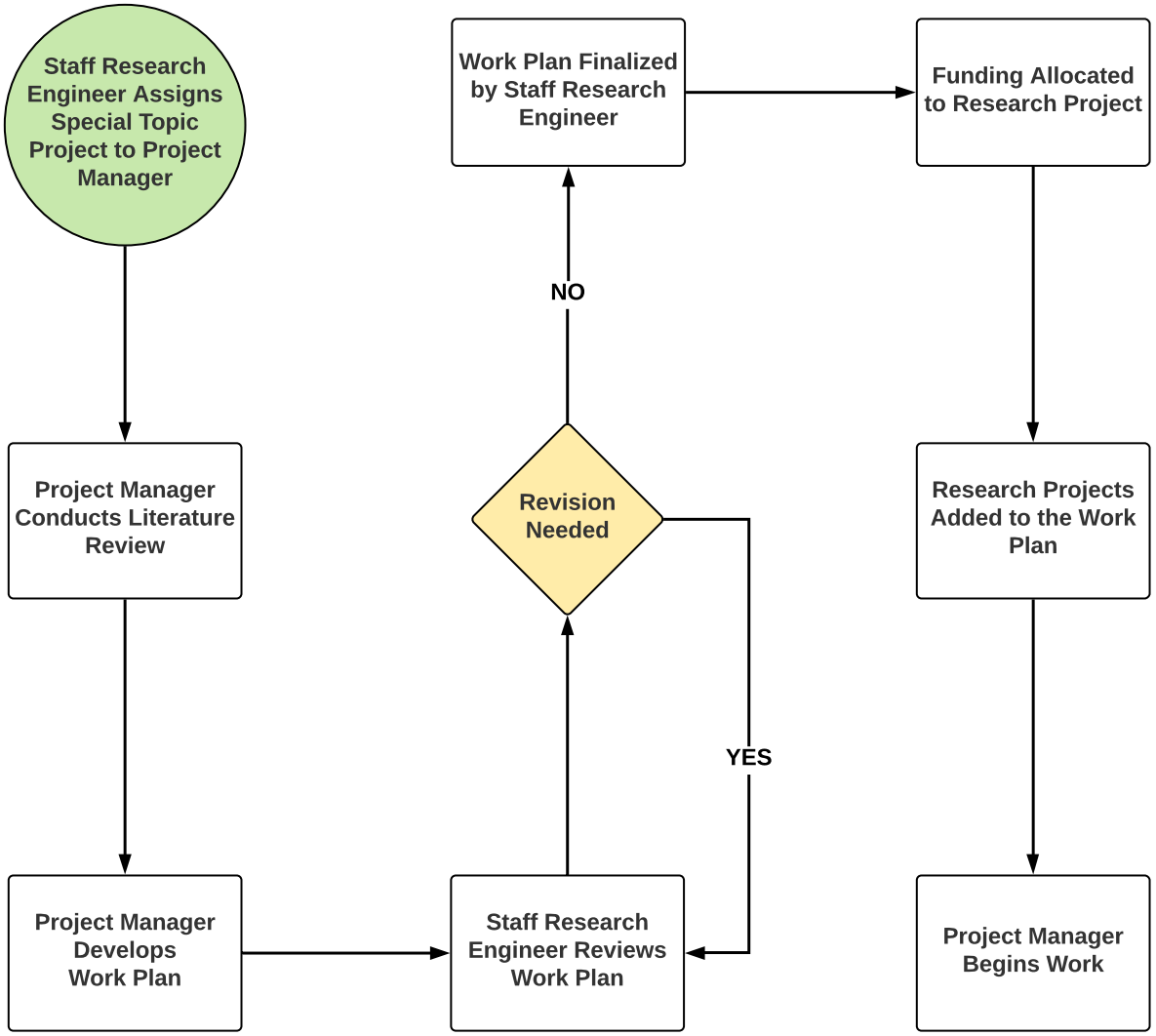
ARDOT's Research Section, in collaboration with the Local Technical Assistance Program (LTAP), has created the Local Research Initiative (LRI) program as a way to assist local governments in their transportation research needs. Following in the footsteps of other state DOT's with similar programs, the LRI program in Arkansas will conduct short-term, limited in-house research that focuses on issues facing local transportation agencies. City, county, regional, and state transportation professionals and agencies will be solicited annually for LRI research proposals. The number of projects selected for research each year will depend on the current number of in-house projects by the Department and funding availability.

Project development for this program will begin with an annual call for Problem Statements. Similar to the process with TRC projects, the Problem Statement forms are

submitted by local governmental officials annually. These research suggestions will be reviewed by the LRI committee, which will include the Staff Research Engineer and at least 3 other staff members. The Problem Statements should be short-term, limited-scope study ideas. If they are too large of scope for the LRI program, then the LRI committee will forward a recommendation that the Problem Statement be submitted during the next TRC Problem Statement solicitation period.

Following the selection of Problem Statements, the LRI committee will select the Research Section PM who is best qualified to take on the in-house project based on their expertise and current project work-load. The selected PM will then complete a Research Proposal based on the selected Problem Statement. The LRI committee will provide any feedback necessary to the staff member until an agreed upon Work Plan is in place. This Work Plan should include all necessary items listed in section 5.4, In-House Project.

Project management for LRI studies shall follow the process outlined in 6.3 for In-House projects. Additional emphasis shall be put on implementation at a local level on these projects. Once the final report has been approved by the LRI committee, an implementation planning meeting shall be called and will include the LRI committee members, an LTAP/T^2 representative, and the Research staff member who conducted the research. It will be determined if the findings of the research warrant the development of a new training class or program to help address the needs of the original problem statement.


Staff Research Engineer Assigns Special Topic Project to Project Manager
Project Manager Conducts Literature Review
Project Manager Develops Work Plan
Staff Research Engineer Reviews Work Plan
Revision Needed
NO
YES
Work Plan Finalized by Staff Research Engineer
Funding Allocated to Research Project
Research Projects Added to the Work Plan
Project Manager Begins Work

Chapter 6: Non-TRC Project Management

6.1 Introduction

Non-TRC Research projects are expected to produce usable data and implementable research. Therefore, although the project oversight might be different, the same standards and attention should be applied to all research produced with Department resources. This chapter outlines how consultant and in-house non-TRC projects should be managed to ensure high standards are maintained.

6.2 Consultant Project Management

Task orders

Task orders will be submitted by the Staff Research Engineer to perform a task that is specified under the Scope of Work in the current Master Agreement. These task orders will be submitted to a specific Consultant specified in the Master Agreement to perform the work required. Task orders can be written by either Department Staff or Consultants, and are reviewed and approved by the Department. A task order will have various deliverables for the project for a fixed cost. A task order has to be approved and signed by the Consultant and the Department. The Department's Consultant Contracts will send a notice to proceed to the Consultant and the Staff Research Engineer.

Monitoring the contract

Throughout the life of the contract, Department staff will administer the contract. Steps in monitoring the contract include but are not limited to:

- Consultant Contracts office will maintain the contract files.
- A PM, appointed by the Staff Research Engineer, will arrange and attend periodic progress meetings.
- The PM will coordinate any reviews and approval actions with FHWA and other agencies when necessary.
- Consultant Contracts will review progress payments while verifying project progress with the PM.
- The PM will direct questions from the Consultant to the proper personnel in the Department.
- Consultant Contracts will negotiate any change or amendment to the contract after receiving documentation from the Consultant and the PM.
- The PM will prepare an evaluation of the Consultant's performance after completion of the contract with input from other Department personnel.

Invoicing

Invoices will be received no more than monthly by the Consultant, and will be reviewed by the Department. Processing of payment for invoicing will be dependent on meeting project deliverables as stated in the task order. The Department will withhold the final 25% of the overall budget until the final report has been submitted to the Department and approved by the Staff Research Engineer.

6.3 In-House Project Management

The scope of non-TRC in-house projects varies greatly. Because of this, the level of project management required will vary. The Staff Research Engineer will direct the PM regarding the level of reporting most appropriate considering the scope of the project. The section applies to In-House projects only. Project management required for consultant projects will vary based on each task and will be fully outlines in the Work Orders for the individual projects.

Reporting

The PM associated with each in-house non-TRC research project is expected to maintain a base level of reporting. Although not as extensive as the TRC project, the PM should still have records available at any time that are reviewable by the Staff Research Engineer to clearly demonstrate the level of work that has been done up to that point. The base level of reporting is as follows:

Action Plan: If requested by the Staff Research Engineer, action plan reports are completed by the PM and submitted to the Staff Research Engineer monthly. The report provides necessary project information to Department personnel. These reports allow for an easy reference of progress, timeline, budget, and implementation.

Implementation Report: If requested by the Staff Research Engineer, the Implementation Report will be prepared by the PM near the end of the actual research effort but prior to approval of the final report. The report will make specific recommendations for the implementation of project finding, including:

1. Whether or not findings are implementable.

2. If implementable:
   a. Benefits expected from implementation.
   b. Action needed to accomplish implementation.
   c. Draft specifications if applicable.

3. If not implementable:
   a. The advisability of further research.
   b. The extent of additional work needed to produce implementable results.

Final Report: The Final Report for In-House projects is required at the completion of each project being conducted for the Department. The report shall completely document all data gathered, analyses performed, and results obtained. An electronic and paper copy shall be submitted. All final reports shall contain, in addition to the uniform provisions, the following:

1. An implementation statement indicating how the results can be applied and benefits expected to be derived from use of the findings.

2. A separate section showing gains in the specific field of research together with the findings and conclusions of the study outlines.

3. A summary statement of research implementation:
   a. Pointing out any immediate practical application of the study findings.
   b. Recommended procedure for implementation of results.
   c. Potential benefits to be derived from the implementation.
   d. If the findings are positive but not immediately implementable, the extent of additional work needed to produce results suitable for implementation.

4. The report should indicate the proposed means and methods for translating the research product into applicable form for use.

5. Technical Report Documentation Page: Is a standard title page, form DOT F 1700.7 must be included with Final Report. Adherence to DOT Order 1700.18, Format for Scientific and Technical Reports is required. Full instructions may be found in the "ARDOT Specifications for Research Reports" guide found on Research's website.

Update Brief Slide: The Staff Research Engineer will call Research section staff meetings on a regular basis, generally monthly. Each PM is expected to maintain and update a slide for their non-TRC in-house research. It should include a basic rundown placed into the following categories:

- Work Completed
- Future Changes
- Issues
- Other – budget expenditures

Equipment Inventory

For In-House projects, any item purchased and/or fabricated under the project priced at greater than or equal to $100.00 and has a useful life of more than five (5) years shall be capitalized for inventory purposes.

File Management

Every Contract Project is required to be organized in its own folder with six (6) subfolders named:

- A-Correspondence
- B-Agreement and Proposal
- C-Progress Reports
- D-Equipment
- E-Audit
- F-Data

These subfolders allow for someone other than the PM to become up to date on a project without explanation. There are to be two copies of every item placed in the folder. One copy is a hard copy located in the file room the other copy is an electronic copy located on the ARDOT server CSD7 under the corresponding project name. The items that belong in each folder are detailed below.

A-Correspondence:

- Any correspondence transmitting documents to or from subcommittee, PI, PM, contractor, etc.
- Project Information Sheet stapled to the front of the folder.
- Project Information Sheet shall be filled out once the project has begun and kept up to date as the project progresses.

B-Agreement and Proposal:

- Project Contract
- Work Plan
- Extension & Renewal

- Any budget revisions

C-Progress Reports:

- Annual Reports
- Action Plans
- Implementation Report
- Final Report

D-Equipment:

- Any equipment over $100.00 shall be noted
- Research Inventory Record
- Equipment Capitalization Notice

E- Audit:

Documents that pertain to

- Time
- Money
- Personnel Changes
- Claims
- Backup documentation for claims

F- Data:

Documents that pertain to

- Data collected in the field
- Data collected across the Department
- Data produced in the lab
- Pictures taken during field or lab work
- Supporting information found during the course of the project

Budget

The budget for an In-House Work Plan is a summary tabulation showing the staffing plan, estimated personnel requirements, and cost for the full term of the study broken down by each fiscal year. The In House Project Renewal Form shall be completed and submitted by March 15 for each Fiscal Year from the start of the project. If there is to be a project extension the In House Project Extension Form shall be completed and submitted to the Staff Research Engineer. This shall be submitted for the project work to continue. The estimate should include:

- Salaries
- Supplies and services
- Travel

- Equipment (purchase/rental)
- Sub-contract (if applicable)

Implementation Tracking

The PM is required to document all major steps of implementation throughout the life of the project. The major steps of implementation are:

1. The PM will meet with the Staff Research Engineer at the beginning of the project and determine an Implementation Plan. This plan can be adjusted throughout the project based on the research findings.

2. Six (6) months before project completion the PM meets with the Staff Research Engineer and the RIC to complete a more in depth Implementation Plan that will be put into place at the end of the project. Potential modifications of the project may be necessary to enhance the implementation that will be made. The Implementation Report will be prepared following the meeting.

3. For three (3) consecutive years, the Implementation Plan enacted at the completion of the project shall be monitored and the Research Project Implementation Tracking documents shall be filled out and filed every year.

6.4 Related Forms

All of the following forms can be found in Appendix 1

- Project Information Sheet
- Audit Review Sheet
- Action Plan
- Quarterly Report
- Interim Report
- Technical Report Documentation Page
- Annual Report
- Budget Sheet
- Renewal Agreement Form
- Extension Agreement Form
- Contracted and In-House TRC Project Renewal Forms
- Contracted and In-House TRC Project Extension Request Forms
- Contracted and In-House TRC Project Budget Revision Request Forms
- Claim Form
- Travel Expense Detail Report
- Out-of-State Travel Authorization
- Equipment Capitalization Notice
- Equipment Inventory Record
- Research Project Implementation Tracking

Chapter 7: Program Requirements

7.1 Introduction

As mandated by the FHWA, all Research Programs are required to initiate and maintain certain programs within their particular state. These programs are enacted in order to ensure all programs nationwide are working towards the same goals and to guarantee consistency. Other programs are required in order to update the FHWA on every project within the program and the financials for those projects and upcoming projects.

7.2 Work Program

The purpose of the State Planning and Research Work Program is to describe all the research activities with estimated costs. Part II of the Work Program is prepared by research staff that covers one fiscal year (July 1 – June 30) that describes the projects and programs that the Research Section plans on being involved in during the current year. The Work Program is forwarded to the FHWA Division Office for approval around the first of May.

The requirements for administration of the State Planning and Research Program are contained in 23 CFR, Part 420. Research, Development and Technology Transfer (RD&T) Work Program requirements are defined in section 420.207 which states:

1. The State DOT's RD&T Work Program shall, as a minimum, consist of a description of RD&T activities to be accomplished during the program period, estimated costs for each eligible activity, and a description of any cooperative activities including the State DOT's participation in any transportation pooled fund studies and the NCHRP. The State DOT's Work Program should include a list of the major items with a cost estimate for each item. The Work Program should also include any study funded under a previous work program until a final report has been completed for the study.

2. The State DOT's RD&T Work Program shall include financial summaries showing the funding levels and share (Federal, State, and other sources) for RD&T activities for the program year. State DOTs are encouraged to include any activity funded 100 percent with State or other funds for information purposes.

3. Approval and authorization procedures in §420.115 are applicable to the State DOT's RD&T Work Program.

7.3 Annual Report

The results of work during the year on individual projects that are included in the work program are documented in the Research Annual Report. This report provides a brief description of each project along with responsibilities, implementation, finances, work schedule, accomplishments and summaries of progress completed during the year. Report is submitted to the FHWA Division Office on a federal fiscal year.

7.4 Technology Transfer

The main goal of all research performed by the state is the implementation of its results. Technology Transfer is the effort to distribute the research findings within the Department for application and also to others outside the Department who are looking for solutions to a common issue. Technology Transfer is nationwide effort by many groups including FHWA, TRB, NCHRP, AASHTO, professional and trade organizations, universities, vendors, and many more. The Research Section is committed to the Technology Transfer effort in the following ways:

- Research results are tracked for the purpose of implementation.
- The results are also circulated within the Department, the FHWA, to all states, and to industry.
- Every year research holds a TRC conference in order to inform the Department, FHWA, vendors, and industry of current research findings and new innovative practices.
- The research staff administers and monitors the T^2, which is a part of the LTAP.
- Maintain an up to date library system for research referencing through a state and national library network.
- Maintain a research website that includes copies of summaries and final reports of completed research projects and also includes progress of all ongoing projects.
- As knowledge is obtained through projects and other research efforts, an article is sent to personnel Department wide for implementation purposes
- Information is provided to Research in Progress (RiP) and the Transportation Research International Documentation (TRID) databases as appropriate.

7.5 Research Library

The ARDOT Research Library is a vast collective consisting of publications, reports, and other documents from various organizations, databases, and other libraries around the nation. The library supports ARDOT staff by helping them to locate relevant information to meet their needs. Some of the resources at the library's disposal include publications from ARDOT and other state DOT's, USDOT, FHWA, as well as the Transportation Research Board. The ARDOT Library catalog can be viewed at: https://a94035.eos-intl.net/A94035/OPAC/Index.aspx.

The Research Librarian shall be responsible for entering new research projects into the Transportation Research Board (TRB) Research in Progress (RiP) database. Completed projects will be transferred to the TRB Transportation Research International Documentation (TRID) database. The Research Librarian will work with the RIC to ensure that all implementation results are to be included as these projects progress.

7.6 Research Library Policies

Ordering Books for ARDOT Staff

The Library can assist in ordering resources for ARDOT staff. Any resources purchased using Research funds are the property of the Research Library. Resource purchases may be requested by contacting the Librarian. The request will be reviewed by the Librarian and the Staff Research Engineer. The Staff Research Engineer will make the final purchasing decision, and the Librarian will notify the requester. Requests can be submitted using the Library Resource Request form available online.

Gifts

The Library reserves the right to accept or discard any donated materials as it sees fit. It will not photocopy materials unless there is copyright clearance.

Discards

The Library considers discarding books when their information becomes obsolete or when it is replaced by a newer edition if the Library has multiple copies.

Catalog

The Library's holdings will be classified and cataloged using the Library of Congress. This database will be accessed through the Department's website.

Circulation

ARDOT and state government employees, faculty, staff and students at Arkansas universities and colleges, city and county transportation officials, and the public may

borrow circulating items from the Library. The standard loan period is one month. The borrower may renew items up to five times providing no one else has requested them.

Clientele

The ARDOT Research Library is open to the public; however, some services are restricted. The standard loan period is one month. The borrower may renew items providing no one else has requested them.

Interlibrary Loan

The Library will attempt to borrow material from other libraries for ARDOT staff through the InterLibrary Loan service. Clients requesting an InterLibrary Loan must provide complete and accurate bibliographic information about the items they want to borrow. The standard loan period is one month.

Literature Searches

Literature searches may be requested by ARDOT employees or employees of state or local government agencies.

Requests can be submitted using the Literature Search Request form available online.

Reference Services

The Library responds to transportation-related reference questions from anyone; questions from ARDOT staff receive the highest priority. ARDOT staff may ask for information. The Library works with the requestor to determine the best way to deliver the answer: telephone calls; in-person visits to the Library; fax; e-mail; interagency mail; or U.S. Postal Service.

If the Library cannot answer, the questions are forwarded to the appropriate Division for a response.

7.7 Product Evaluation

The Research Section is often called upon, by the Product Evaluation Committee, to investigate new products to the Department and evaluate the effectiveness of these products. The product findings are then delivered to the Product Evaluation Committee, who determines if the product is implementable. If the product is implementable a Product Summary (see example) is completed and distributed, the product will then be added to the Qualified Products List (QPL). Once added to the QPL the product is available state wide to be used on all construction projects.

7.8 Implementation Program

Implementation is the process of applying project findings to practical use by the Department. This is a high priority consideration that continues throughout the project and beyond. Implementation tracking begins with the initiation of a project when information is entered into the database by the RIC and carries through until the project findings are in common use or until the Research Implementation Committee determines implementation is not in the best interest of the Department.

The potential for implementation will be considered at the initiation of possible research projects. RFP's will contain a large section for detailing the proposed implementation. Proposals will be expected to address this proposed implementation in some detail. A budget line item for implementation will be acceptable as part of the project's budget. In House project will also include an Implementation Plan within the Work Plan and follow the same procedures as contracted research.

Each research Project Subcommittee shall be charged with the responsibility of proposing the implementation of the project results and the subcommittee will begin this process with the start of the project. Subcommittees will develop or approve an implementation proposal. The implementation proposal will be specific and include a date that final implementation will be accomplished. For Contract Projects, the PI will submit the Implementation Plan in the Proposal for approval by the Project Subcommittee.

The Ongoing Research Implementation Progress begins with the issue of the work order. It is maintained by the RIC as the project progresses and is reviewed at subsequent subcommittee meetings. Quarterly progress reports will address implementation progress as well as overall progress of the project.

At least six months prior to project completion, an implementation meeting is required with one member of the Research Implementation Committee present. At this meeting the original implementation plan will be reviewed and modifications made as necessary. Procedures currently require PIs to submit implementation recommendations in detail in the Implementation Report along with an overview in their Final Report. Implementation needs to be the objective of the research project and not an afterthought.

The implementation date will be a date after completion of the research project and would allow for field evaluation. Final implementation will be considered as final adoption of a product or procedure and may be included in the specifications, special provision, maintenance procedures, etc. If the research could not be implemented, the Final Implementation Report should include the reasons why. The Implementation Report will be approved or disapproved by the Research Implementation Committee. Minimally, the report should have the following format: project problem statement,

major findings of the project, recommended implementation activities, length of active monitoring, the cost of implementation, anticipated savings resulting from implementation, and a method for determining the return of investment.

The project will remain active until the Research Implementation Committee has reviewed and taken action on the project's recommendations. The subcommittee will remain active for an unspecified time period to track and monitor implementation of the research. The action of the Research Implementation Committee is noted on the Research Project Implementation Tracking.

The RIC monitors implementation throughout the Department and documents benefits accruing to the Department as a result of the project for at least three (3) years. On year three (3), an Implementation Survey is sent to the user for feedback and comments in regards to the implemented research. The survey is included in the Research Project Implementation Tracking form. Implementation Reports will be maintained in the Research Section and made available to the Divisions and Districts through the research website. Progress of implementation will be updated periodically.

Implementation progress report shall be made at the annual TRC meeting. A final status report of implementation will be made at the TRC following completion of the implementation period. The Research Section will monitor project implementation sites for a period of evaluation (greater than 3 years) is desired and report performance.

The RIC is responsible for managing research information made available via the network, screening and dissemination of non-Department research, providing active implementation tracking. Contact will be made with those implementing research findings in order to track progress.

Research activities not directly related with In-House research will be listed with implementation information available at the Research website. This would include items such as activities in support of the New Products Committee, demonstration projects, SHRP products, etc.

Non-Department Research

The Research Section will continue screening non-Department research results and forward to others in the Department who might have a possible interest in the research. As part of this, the RIC will also request a response as to the potential for implementation by the Department. The RIC will have a good knowledge of the activities of other Divisions/Sections, Districts, and individuals.

Those expressing interest in attempting to implement non-Department research findings will work with the Research Section in developing an implementation proposal

similar to that submitted by a Department research project. The implementation procedure will then follow similar steps for implementation:

1. A project implementation idea will be submitted to the Research Section.

2. A brief Project Implementation Plan will be prepared by the Research Section.

3. The Staff Research Engineer, RIC, PM and the interested party will meet to review, approve and submit the Plan to the Research Implementation Committee.

4. Based on recommendations from the Research Implementation Committee one of the following actions will be taken:

    - Implementation is approved and a time line set to be fully implemented,
    - Implementation is postponed while additional information is gathered or suggestions/recommendations from the Research Implementation Committee are resolved, or
    - The Committee rejects implementation and no further action is needed.

5. Complete a summary of the implementation findings and distribute throughout the Department, as necessary.

7.9 TRID & RiP

TRID:

Transportation Research International Documentation is an integrated database that combines the records from TRB's Transportation Research Information Services (TRIS) Database and the OECD's Joint Transport Research Centre's International Transport Research Documentation (ITRD) Database. TRID provides access to more than one million records of reference books, technical reports, conference proceedings, and journal articles in the field of transportation research worldwide. The Research Section uses this service to distribute its findings and also literature searches for potential research projects.

RiP:

The Transportation Research Board's Research in Progress (RiP) website contains the Research in Progress (RiP) Database and a data-entry system to allow users in State Departments of Transportation, the U.S. Department of Transportation, University Transportation Centers and other US DOT funded universities to add, modify and delete

information on their current research projects. The RiP database now contains current or recently completed transportation research projects. Most of the RiP records are projects funded by Federal and State Departments of Transportation. University transportation research is also included. The RiP Database serves as a clearinghouse of University Transportation Centers ongoing research. International research projects from the TRIP file of the International Transport Research Documentation Database are now included in the RiP database. The Transportation Association of Canada supplies records from its Canadian Surface Transportation Research Database for RiP.

7.10 NCHRP

The National Cooperative Highway Research Program (NCHRP) was created to conduct research in acute problem areas that affect highway planning, design, construction, operation and maintenance nationwide. NCHRP provides practical, ready-to-implement solutions to pressing problems facing the industry. The NCHRP is administered by the TRB and sponsored by the member departments (state departments of transportation) in cooperation with the Federal Highway Administration. Support is drawn from each state's Federal-Aid Highway apportionment of the State Planning and Research (SPR) funds, in the amount of 5.5% of the total SPR apportionment.

7.11 SHRP 2

Strategic Highway Research Program 2 (SHRP 2) is managed by TRB and is a targeted, short-term, results-oriented program of strategic highway research designed to advance highway performance and safety for U.S. highway users. SHRP 2 focuses on applied research in four areas in order to meet the following goals:

- Safety: Significantly improve highway safety by understanding driving behavior in a study of unprecedented scale.
- Renewal: Develop, design, and construction methods that cause minimal disruption and produce long-lived facilities to renew the aging highway infrastructure.
- Reliability: Reduce congestion and improve travel time through incident management, response, and mitigation.
- Capacity: Integrate mobility, economic, environmental, and community needs into the planning and design of new transportation capacity.

7.12 EDC

Every Day Counts (EDC) is designed to focus on a finite set of initiatives. Teams from the Federal Highway Administration will work with state, local, and industry partners to deploy the initiatives and will develop performance measures to gauge their

success. Through the Every Day Counts (EDC) initiative, FHWA works with state and local transportation agencies and industry stakeholders to identify a new collection of innovations to champion every two years. Innovations are selected collaboratively by stakeholders from across the highway community, taking into consideration market readiness, impacts, benefits and ease of adoption of the innovation. Ultimately, a group of approximately a dozen technologies and processes are selected for promotion under each two-year EDC cycle. Sometimes innovations are held over from the previous round of EDC in order to assure a more thorough deployment nationally.

7.13 Peer Exchange

The use of peer exchanges was established to provide state DOTs' the opportunity to examine, evaluate, and improve their research programs through a collaborative team of peers, experts, and others involved in the process. The requirement for peer exchange is included in 23 CFR Section 420.209.

The state transportation agency hosting the peer exchange selects a team of members knowledgeable about state research programs to exchange information and best practices relating to their overall research program and management process and to examine more focused areas the host state identifies as needing improvement. The traditional peer exchange is held onsite in the host state and lasts two to three days. The team, usually four to five people, can include participants from other state research programs, FHWA staff, universities, or other relevant participants and at least one or two of the members should have participated on previous peer exchange teams. A team leader is appointed by the host state. The actual process of the exchange is at the discretion of the host state. The host state is responsible for preparing a written report of the exchange. Copies of the report are provided to participants and the FHWA Division Office, as a minimum. Per FHWA requirements, the host state is responsible for travel costs incurred by peer exchange team members. SPR funds are utilized to reimburse these expenses.

7.14 Pooled Fund Studies

FHWA facilitates the management of the Transportation Pooled Fund Studies as a means for interested States, FHWA, and other organizations to partner when significant or widespread interest is shown in solving transportation-related problems. Partners may pool funds, including SP&R funding, and when approved by FHWA, SP&R funds may be used without matching state funds. Activities may include research, planning, or technology transfer activities and may be jointly funded by several federal, state, regional, and local transportation agencies, academic institutions, foundations, or private firms as a pooled fund study.

7.15 Core Program

The National Academy of Sciences TRB provides leadership in transportation innovation and progress through research and information exchange, conducted within a setting that is objective, interdisciplinary, and multimodal. TRB offers opportunities for information exchange on current transportation research and practice, management of cooperative research and other research programs, analyses of national transportation policy issues and guidance on federal and other research programs and publications and access to research information from around the world. All states provide financial support for TRB's Core Program activities that are designed to support dialogue and information exchange among researchers, practicing transportation professionals, and others concerned with transportation.

7.16 Related Forms

All of the following forms can be found in Appendix 1

- Ongoing Research Implementation Progress
- Research Project Implementation Tracking
- Implementation Survey

Chapter 8: Arkansas Local Technical Assistance Program Center (LTAP) / Technology Transfer (T^2)

8.1 Introduction

ARDOT is designated as the Arkansas LTAP, with administrative control of the T^2 Program for the State. The program is a cooperative effort between ARDOT, FHWA, and the University of Arkansas at Fayetteville (UAF). The purpose of the LTAP/T^2 Program is to provide established and new transportation-related technologies and information to local cities and counties throughout the state.

The FHWA provides funding for the LTAP center that is matched with SPR funds. ARDOT has an agreement with the UAF that provides support and to adequately assist in the dissemination of applicable information to local transportation agencies through the Center for Training Transportation Professionals (CTTP) Program. Through the effective transfer of such technologies the efficiency of roadway construction and ensure the quality of local transportation systems will be significantly improved.

8.2 LTAP/T^2 Program

The LTAP/T^2 Program offers free training to local cities and counties dealing with construction practices, safety, maintenance, and computer courses. Examples of the provided classes may be:

- Heavy Equipment Operator
- Flagging and Work Zone Safety
- Gravel Road Maintenance Workshop
- Traffic Signal Maintenance
- Drug and Alcohol Recognition
- Culvert Sizing and Installation
- Microsoft Word, Excel, Access, and PowerPoint

For a full list of currently offered classes, please contact the LTAP/T^2 Program Manager. The registration form can be faxed, emailed, or completed over the phone with the Program Manager.

The LTAP/T^2 Program has a library of publication and DVDs that are available to local agencies upon request, at no costs, as long as the copyright restrictions are not violated. Reference and training materials are also purchased for distribution at all training and workshops; these may also be requested.

8.3 CTTP Program

The CTTP Program is in place to transfer technology from Research to transportation professionals. It allows for individuals to be informed and in some cases certified in particular transportation practices. CTTP at UAF provides the following for the T^2 Program:

- Provides technical support and guidance at the request of Arkansas governmental agencies.
- Represents Arkansas at the national, state, and local meetings and conferences.
- Propose, develop, and implement training classes.
- Assist with deployment of training activities.
- Maintain and update LTAP/T^2 website.
- Manages the teaching and functions of the ROADS Scholar Program.

The ROADS Scholar Program is designed to be an opportunity that encourages the continuation and expansion of education in the transportation industry. This program is specifically intended to provide a mechanism for professional development and recognition for personal growth, while delivering valuable information and technology to local agency personnel responsible for the construction and maintenance of roads and streets. Upon completion of the Roads Scholar requirements, students will receive a certificate and have the opportunity to advance to additional levels within the program.

8.4 Related Forms

The following form can be found in Appendix 1

- LTAP/T^2 Class Registration Form

Chapter 9: Legal

9.1 Copyrights, Patents, and Disclaimer

Copyrights:

The Contractor shall be free to copyright material developed under the contract with the provision that the Department and FHWA reserve a royalty-free, nonexclusive and irrevocable license to reproduce, publish, or otherwise use, the work for any Government purpose. All parties will follow 37 CFR Section 401.

Patents:

If patentable discoveries or inventions should result from work performed under the Program, the Contractor may file for a patent as provided for in the Basic Agreement or other contract document. If a patent is obtained, the Contractor may reserve a revocable, nonexclusive, paid-up license for the practice of such invention throughout the United States and its possessions and territories. However, the Contractor shall agree to grant to the Department and the United States Government an irrevocable, nonexclusive, nontransferable, and royalty-free license to practice each invention in the manufacture, use, and disposition according to law, any articles or materials, and in any method that may be developed as a part of the research work. The Contractor is to notify the Department of patent applications resulting from work on Department projects. Disposition of patent rights shall be with the submittal of the Final Report for the project. All parties will follow 37 CFR Section 401.

Disclaimer Statement:

Any research report, article, paper, etc. that has been funded in part or whole by the Department should include the following disclaimer statement in its final published edition:

> The contents of this report reflect the views of the authors, who are responsible for the facts and the accuracy of the data presented herein. The contents do not necessarily reflect the official views or policies of ARDOT and they assume no liability for the contents or use thereof. This report does not constitute a standard, specification, or regulation. Comments contained in this report related to specific testing equipment and materials should not be considered an endorsement of any commercial product or service; no such endorsement is intended or implied.

9.2 Basic Agreement

Definition:

The Basic Agreement establishes and provides for the operation of a continuing program of transportation research by the Department and the University which shall be known as the Transportation Research Program. The Program shall consist of specific research projects, each an investigation or a study in a particular field of transportation, with sufficiently defined limits to permit a clear determination of overall objectives of the project.

Purpose:

The Agreement is to establish methods and procedures for the Department to perform research or transportation planning studies on a cost-reimbursable or a fixed price contract basis with the University. It is understood that the transportation research conducted under the Agreement shall be performed in accordance with the principles of scientific methods in an atmosphere of academic freedom consistent with the administrative regulations herein and in the latest revision of the Department's Research Manual for Transportation Research Projects. Specific projects shall be developed in accordance with provisions in the Research Manual.

9.3 Constitution, By-Laws, and Standing Rules

By Act 192 of 1977, the Arkansas State Highway and Transportation Department was assigned responsibility for multi-modal transportation planning and research activities in Arkansas. To provide adequate administrative control of this expanded research program, the Arkansas State Highway Commission passed Minute Order 77-193, which authorized certain changes in the Department's Research Program Procedures. As such, the "Constitution, By-Laws and Standing Rules of the Transportation Research Committee" was written. This constitution dictates how TRC is organized, operates and their objectives.

Appendix

Appendix 1: Forms

List of Forms:

PROBLEM STATEMENT
No. ____

ARDOT TRC TRANSPORTATION RESEARCH COMMITTEE

RESEARCH PROBLEM STATEMENT

DATE:	PROJECT AREA:

TITLE:

PROBLEM STATEMENT:

OBJECTIVES:

FORM OF RESEARCH IMPLEMENTATION AND RETURN ON INVESTMENT:

Estimated Project Duration: **Months**

PREPARED BY:

AGENCY:

PHONE: **REVIEWER:**

Standing Subcommittee Ranking	Advisory Council Ranking	Statement Combined with Statement Number(s)
_____	_____	_____

ARDOT TRC TRANSPORTATION RESEARCH COMMITTEE Statement No._____

Problem Statement Evaluation

Title:

Submitted By: **Category:**

Reviewer: **Review Date:**

Key Word Search:

RIP Search: ☐ **TRID Search:** ☐

General Comments:

Standing Subcommittee Comments:

Advisory Council Comments:

Follow - Up:

Standing Subcommittee Ranking: _____ **Advisory Council Ranking:** _____

SUBCOMMITTEE PROBLEM STATEMENT REJECTION JUSTIFICATION

This form must be completed for any submitted Problem Statement that the Subcommittee votes unanimously to reject and not send to the Advisory Council.
The full policy for this procedure can be found in section 3.2 of the Research Manual.

Title	
Statement No.	
Category	

REASON FOR REJECTION

Select all that apply

- ☐ The research is already being conducted by the Department.
- ☐ The Department has previously conducted this research with no major changes present in this problem statement.
- ☐ The problem statement has already been submitted in a past year and no significant changes were made with the presently submitted statement.
- ☐ The problem statement is too similar to a pool fund study that the department is currently participating in.

Further Comments (Required):

Subcommittee Chairman Date:

Approved: ☐ Yes ☐ No

Staff Research Engineer Date:

Approved: ☐ Yes ☐ No

FINAL PRIORITY RANKING
FOR
RESEARCH PROBLEM STATEMENTS

Please assign priorities to the (15) most needed Research projects
in your opinion, by placing the statement number in the block

☐	Most	needed research
☐	2 nd.	needed research
☐	3 rd.	needed research
☐	4 th.	needed research
☐	5 th.	needed research
☐	6 th.	needed research
☐	7 th.	needed research
☐	8 th.	needed research
☐	9 th.	needed research
☐	10 th.	needed research
☐	11 th.	needed research
☐	12 th.	needed research
☐	13 th.	needed research
☐	14 th.	needed research
☐	15 th.	needed research

RESEARCH PROJECT IMPLEMENTATION TRACKING

GENERAL PROJECT INFORMATION

PROJECT TITLE:		PROJECT NUMBER:
COORDINATOR:	PRINCIPAL INVESTIGATOR:	PROJECT TYPE: Circle One Contract In House
START DATE:	COMPLETION DATE:	PROJECT COST:
OBJECTIVES OF RESEARCH:		
MAJOR FINDINGS:		

IMPLEMENTATION INFORMATION

RESEARCH IMPLEMENTATION COMMITTEE COMMENTS:	
LOCATION OF IMPLEMENTATION:	
WHAT IS BEING IMPLEMENTED?	CONTACT PERSON:
ANY DEPARTMENT SPECIFICATIONS TO BE CHANGED?	

RESEARCH PROJECT IMPLEMENTATION TRACKING

IMPLEMENTATION YEAR 1

DATE:

HAS IMPLEMENTATION BEEN SUCCESSFUL?	
IF NO, WHY?	
ANY ADDITIONAL COST ASSOCIATED WITH IMPLEMENTATION?	AMOUNT:
IF SO, WHAT?	
HAVE ANY CHANGES BEEN MADE FROM THE INITIAL IMPLEMENTATION PLAN?	
IF SO, WHAT?	
JOB NUMBER OR LOCATION OF USES:	

RESEARCH PROJECT IMPLEMENTATION TRACKING

IMPLEMENTATION YEAR 2

DATE:

HAS IMPLEMENTATION BEEN SUCCESSFUL?	
IF NO, WHY?	
ANY ADDITIONAL COST ASSOCIATED WITH IMPLEMENTATION?	AMOUNT:
IF SO, WHAT?	
HAVE ANY CHANGES BEEN MADE FROM THE INITIAL IMPLEMENTATION PLAN?	
IF SO, WHAT?	
JOB NUMBER OR LOCATION OF USES:	

RESEARCH PROJECT IMPLEMENTATION TRACKING

IMPLEMENTATION YEAR 3

DATE:

HAS IMPLEMENTATION BEEN SUCCESSFUL?	
IF NO, WHY?	
ANY ADDITIONAL COST ASSOCIATED WITH IMPLEMENTATION?	AMOUNT:
IF SO, WHAT?	
HAVE ANY CHANGES BEEN MADE FROM THE INITIAL IMPLEMENTATION PLAN?	
IF SO, WHAT?	
JOB NUMBER OR LOCATION OF USES:	

RESEARCH PROJECT IMPLEMENTATION TRACKING

Implemented Research Survey

The Federal Highway Administration requires the Research Section to monitor implemented research for (3) years. This survey will help the Research Section determine if the original problem statements needs have been adequately met or if additional research is warranted.

The following problem statement has been submitted to the Research section for consideration as a research project:

Research project _____ entitled _____ was funded to meet the following objectives:

The intended implementation of this project is:

RESEARCH PROJECT IMPLEMENTATION TRACKING

Have the projects findings satisfied the needs set forth in the original problem statement? (Select one)

- ☐ **Very Unsatisfied**
- ☐ **Unsatisfied**
- ☐ **Somewhat Satisfied**
- ☐ **Very Satisfied**
- ☐ **Extremely Satisfied**

If the needs have not been met, what if any additional research is required?

Have any unforeseen problems occurred since the project was implemented? ☐ **Yes** ☐ **No**
(If yes please explain)

Were any unexpected benefits realized from this project? ☐ **Yes** ☐ **No**
(If yes please explain)

Survey completed by: **on**
Title:
Division/District:

ESTIMATED TIME:

ESTIMATED COST:

Fiscal Year	ARDOT Cost	Total Project Cost
TOTAL		

ORGANIZATION:

PRINCIPAL INVESTIGATOR:

CO-PRINCIPAL INVESTIGATOR:

ARDOT PROJECT COORDINATOR:

ARDOT SUBCOMMITTEE CHAIRPERSON:

Submitted by:

_____ _____

Principal Investigator
Department of

Research and Sponsored Programs

_____ _____

, Director

Co-Principal Investigator
Department of

_____

Department Head
Department of

ESTIMATED PROJECT BUDGET: FY__

(12 months)

A. Direct Costs

1. **Salaries and Wages**		$
Professional (___ PSE)	$	
Graduate Student - MS (___ PSE)	$	
Undergraduate Student (___PSE)	$	
2. **Fringe Benefits**		$
Professional ____%	$	
Graduate Student ___%	$	
Undergraduate Student ____%	$	
3. **Supplies and Services** (To include Equip. purchased up to $2500)		$
4. **Travel**		$
In-State	$	
Out-of-State (Itemized)	$	
Modified Total Direct Costs (MTDC) (Direct Costs minus Equipment, Rental, Subcontracts and Tuition)		**$**
B. Indirect Costs (15% of MTDC)		**$**
C. Graduate student tuition		$
D. Sub-contracts		$
E. Equipment		
Rental (list equipment name and rental rate)	$	
Purchase (list equipment name and cost) ($ value of $2500 or more and a life expectancy at least 1 year)	$	
Total Equipment		**$**
TOTAL CONTRACTOR COSTS		**$**
F. Department Services and Equipment (ARDOT)		
Testing Services	$	
District Services	$	
Research Services	$	
Total Department Services		**$**
G. Implementation Costs		**$**
TOTAL PROJECT COSTS		**$**

Total Project Costs page should be total budget **including** Department Services and Equipment (Section F) and Implementation Costs (Section G).
Each Fiscal year budget should be separated out for individual budgets, minus Department Services and Equipment (Section F) and Implementation Costs (Section G).
All Budget pages should be set up in this format.

LEVEL OF EFFORT

			Effort by Quarter Person Year Equivalents(PSE)				
Item	Title	Name	1st	2nd	3rd	4th	Total
Professional Services	P.I.		.10	.05	.05	.10	.30
Total for Professional Services			**.10**	**.05**	**.05**	**.10**	**.30**
Technical Support	Grad. Asst		.125	.125	.125	.25	.625
	Res. Asst		.125	.125	.125	.0	.375
Total Technical Support			**.25**	**.25**	**.25**	**.25**	**1.0**
Clerical	Support	Typist			.05	.05	.10
Total Clerical			**0**	**0**	**.05**	**.05**	**.10**

PROJECT NUMBER:

ESTIMATED TIME:

ESTIMATED COST:	Fiscal Year	Total Project Cost
	FY	$
	FY	$
	TOTAL	$

ORGANIZATION: Arkansas Department of Transportation

PRINCIPAL INVESTIGATOR:

PRINCIPAL COORDINATOR:

ARDOT SUBCOMMITTEE CHAIRPERSON:

_____ _____

Assistant Chief Engineer-Planning Date

Personnel and Budget Estimate

The following personnel will be involved on this project:

1. Name, Principal Investigator
2. Name, Technical Support

ESTIMATED PROJECT BUDGET: FY__

Salary	
Professional	$
Technical	$
Fringe (___% of salaries)	$
Supplies and Services	$
Travel	$
Equipment	$
TOTAL Fiscal Year	**$**

ESTIMATED PROJECT BUDGET: FY__

Salary	
Professional	$
Technical	$
Fringe (___% of salaries)	$
Supplies and Services	$
Travel	$
Equipment	$
TOTAL Fiscal Year	**$**
TOTAL PROJECT COSTS	**$**

Level of Effort

Item	Personnel	Effort
FY 2020		
Professional	Name	.20
Technical	Name	.20
FY 2021		
Professional	Name	.10
Technical	Name	.10

RENEWAL AND EXTENSION OF PROJECT AGREEMENT

FOR COOPERATIVE INVESTIGATION UNDER THE TRANSPORTATION RESEARCH PROGRAM

Arkansas Department of Transportation
(hereinafter referred to as Department)

and

(hereinafter referred to as Contractor)

WHEREAS, under the Basic Agreement for the Highway Research Program, the parties identified above entered into a Project Agreement for the specific study designated, numbered, and dated as follows:

Project Title

TRC
Project Number **Date of Project Agreement**

WHEREAS said Project Agreement estimated the study would continue for the period of months, for a total estimated cost of ;and included a detailed estimate of cost for the ending date of ; and,

WHEREAS, individual studies under the Basic Agreement must be renewed and a detailed budget filed at the beginning of each subsequent fiscal year,

NOW, THEREFORE, said parties mutually agree to the renewal of said Agreement for the period beginning , and ending ,under the same terms and conditions as set forth in the original Project Agreements, and the current work plan filed therefor. The Department agrees to reimburse the Contractor for work performed in accordance with the detailed budget attached hereto and made a part of this Renewal Agreement, but not to exceed . Reimbursement of the final claim will not be made until a Final Report is approved.

This renewal of aforesaid Agreement is hereby executed upon the completion of the indicated signatures by each of the parties.

Agreement Forms must be submitted with the applicable Project Renewal or Extension Request Form.

Forms must be submitted on Doc Express by March 15th.

CONTRACTED TRC PROJECT RENEWAL REQUEST FORM

This form must be submitted with the Renewal and Extension of Project Agreement form if the project is scheduled to continue into the upcoming Fiscal Year. Changes to the budget for the upcoming Fiscal Year may be requested on page 2 of this form and explained in the comments section below. There will be no additional budget revisions during the project except for the reasons listed on the Budget Revision Form. A Benchmark Report must be submitted for the Renewal to be processed.

All forms must be submitted on Doc Express by March 15th.

Project Name		**Project Number**	TRC
Date Submitted		**Number of Renewals**	
Project Start Date		**Percentage Completed**	0.00%
Renewal Start Date		**Renewal End Date**	
Period of Renewal	months	**Project on Schedule***	Yes ☐ No ☐

Comments - If a Budget Revision for the upcoming Fiscal Year is being requested, an explanation must be provided below.
***Please explain any project delays in this section.**

CONTRACTED TRC PROJECT RENEWAL REQUEST FORM

Project Name		Project Number	TRC	Fiscal Year	

Previously Approved Budget

LINE ITEM	
SALARIES	$ 0.00
WAGES	$ 0.00
FRINGE BENEFITS	$ 0.00
SUPPLIES AND SERVICES	$ 0.00
TRAVEL	$ 0.00
INDIRECT COSTS	$ 0.00
EQUIPMENT	$ 0.00
SUBCONTRACTS	$ 0.00
TUITION	$ 0.00
TOTAL	$ 0.00

Are any changes required to the previously approved budget? Yes ☐ No ☐

If a budget revision is required, complete the Proposed Revised Budget below, providing a detailed explanation in the page 1 comments section.

Proposed Revised Budget

LINE ITEM	
SALARIES	$ 0.00
WAGES	$ 0.00
FRINGE BENEFITS	$ 0.00
SUPPLIES AND SERVICES	$ 0.00
TRAVEL	$ 0.00
INDIRECT COSTS	$ 0.00
EQUIPMENT	$ 0.00
SUBCONTRACTS	$ 0.00
TUITION	$ 0.00
TOTAL	$ 0.00

Form completed by:

IN-HOUSE TRC PROJECT RENEWAL REQUEST FORM

This form must be submitted if the project is scheduled to continue into the upcoming Fiscal Year. Changes to the budget for the upcoming Fiscal Year may be requested on page 2 of this form and explained in the comments section below. There will be no additional budget revisions during the project except for the reasons listed on the Budget Revision Form. Any annual reports specified in the project's Work Plan must be submitted for the renewal to be processed.

All forms must be submitted on Doc Express by March 15th.

Project Name		**Project Number**	TRC
Date Submitted		**Number of Renewals**	
Project Start Date		**Percentage Completed**	0.00%
Renewal Start Date		**Renewal End Date**	
Period of Renewal	months	**Project on Schedule***	Yes ☐ No ☐

Comments - If a Budget Revision for the upcoming Fiscal Year is being requested, an explanation must be provided below.
***Please explain any project delays in this section.**

IN-HOUSE TRC PROJECT RENEWAL REQUEST FORM

Project Name		Project Number	TRC	Fiscal Year	

Previously Approved Budget

LINE ITEM	
SALARIES	$ 0.00
WAGES	$ 0.00
FRINGE BENEFITS	$ 0.00
SUPPLIES AND SERVICES	$ 0.00
TRAVEL	$ 0.00
INDIRECT COSTS	$ 0.00
EQUIPMENT	$ 0.00
SUBCONTRACTS	$ 0.00
TUITION	$ 0.00
TOTAL	$ 0.00

Are any changes required to the previously approved budget? Yes ☐ No ☐

If a budget revision is required, complete the Proposed Revised Budget below, providing a detailed explanation in the page 1 comments section.

Proposed Revised Budget

LINE ITEM	
SALARIES	$ 0.00
WAGES	$ 0.00
FRINGE BENEFITS	$ 0.00
SUPPLIES AND SERVICES	$ 0.00
TRAVEL	$ 0.00
INDIRECT COSTS	$ 0.00
EQUIPMENT	$ 0.00
SUBCONTRACTS	$ 0.00
TUITION	$ 0.00
TOTAL	$ 0.00

Form completed by:

CONTRACTED TRC PROJECT EXTENSION REQUEST FORM

This form is required to be submitted if a project is expected to extend past its original contract end date. The Extension Request Form must be submitted with the Renewal and Extension of Project Agreement form. Extension requests are subject to approval. Justification for the request must be provided below. Criteria includes, but is not limited to:

1. ARDOT changes scope of project after the project has started.
2. Delay to the project due to construction schedules or construction job let dates, natural disasters, death or major hospital stays, retirements, PI leaving the university, or government shutdown.

All forms must be submitted on Doc Express by March 15th.

Project Name		**Project Number**	TRC
Start Date		**Number of Extensions**	
Original End Date		**New End Date**	
Date Submitted		**Percentage Completed**	0.00%

LENGTH OF EXTENSION: MONTHS

JUSTIFICATION FOR REQUESTED REVISION:

CONTRACTED TRC PROJECT EXTENSION REQUEST FORM

Project Name		Project Number	TRC	Fiscal Year	

Complete the Proposed Budget below for the requested extension. If funds are being moved from a previous Fiscal Year into this Proposed Budget, a Budget Revision form must accompany this Extension Request to move those funds out of the previous Fiscal Year's budget.

Proposed Budget

LINE ITEM	
SALARIES	$ 0.00
WAGES	$ 0.00
FRINGE BENEFITS	$ 0.00
SUPPLIES AND SERVICE	$ 0.00
TRAVEL	$ 0.00
INDIRECT COSTS	$ 0.00
EQUIPMENT	$ 0.00
SUBCONTRACTS	$ 0.00
TUITION	$ 0.00
TOTAL	$ 0.00

Form completed by:

IN-HOUSE TRC PROJECT EXTENSION REQUEST FORM

This form is required to be submitted if a project is expected to extend past its original contract end date. Extension requests are subject to approval. Justification for the request must be provided below. Criteria includes, but is not limited to:

1. ARDOT changes scope of project after the project has started.
2. Delay to the project due to construction schedules or construction job let dates, natural disasters, death or major hospital stays, retirements, or government shutdown.

All forms must be submitted on Doc Express by March 15th.

Project Name		**Project Number**	TRC
Start Date		**Number of Extensions**	
Original End Date		**New End Date**	
Date Submitted		**Percentage Completed**	0.00%

LENGTH OF EXTENSION: MONTHS

JUSTIFICATION FOR REQUESTED REVISION:

IN-HOUSE TRC PROJECT EXTENSION REQUEST FORM

Project Name		Project Number	TRC	Fiscal Year	

Complete the Proposed Budget below for the requested extension. If funds are being moved from a previous Fiscal Year into this Proposed Budget, a Budget Revision form must accompany this Extension Request to move those funds out of the previous Fiscal Year's budget.

Proposed Budget

LINE ITEM	
SALARIES	$ 0.00
WAGES	$ 0.00
FRINGE BENEFITS	$ 0.00
SUPPLIES AND SERVICE	$ 0.00
TRAVEL	$ 0.00
INDIRECT COSTS	$ 0.00
EQUIPMENT	$ 0.00
SUBCONTRACTS	$ 0.00
TUITION	$ 0.00
TOTAL	$ 0.00

Form completed by:

CONTRACTED TRC PROJECT BUDGET REVISION REQUEST FORM

This form must be submitted if the current fiscal year requires a budget revision. There will be no additional budget revisions during the project except for the following reasons:

1. ARDOT changes scope of project after the project has started.
2. Equipment line item was underestimated at the signing of the contract.
3. Delay to the project due to construction schedules or construction job let dates, natural disasters, death or major hospital stays, retirements, PI leaving the university, or government shutdown.

All forms must be submitted on Doc Express by March 15th.

Project Name		**Project Number**	TRC
Start Date		**Number of Revisions**	
Date Submitted		**Percentage Completed**	0.00%

JUSTIFICATION FOR REQUESTED REVISION:

CONTRACTED TRC PROJECT BUDGET REVISION REQUEST FORM

Project Name		Project Number	TRC	Fiscal Year	

Complete the Proposed Budget Blocks

Current Budget LINE ITEM		Proposed Budget LINE ITEM	
SALARIES	$ 0.00	SALARIES	$ 0.00
WAGES	$ 0.00	WAGES	$ 0.00
FRINGE BENEFITS	$ 0.00	FRINGE BENEFITS	$ 0.00
SUPPLIES AND SERVICES	$ 0.00	SUPPLIES AND SERVICES	$ 0.00
TRAVEL	$ 0.00	TRAVEL	$ 0.00
INDIRECT COSTS	$ 0.00	INDIRECT COSTS	$ 0.00
EQUIPMENT	$ 0.00	EQUIPMENT	$ 0.00
SUBCONTRACTS	$ 0.00	SUBCONTRACTS	$ 0.00
TUITION	$ 0.00	TUITION	$ 0.00
TOTAL	$ 0.00	**TOTAL**	$ 0.00

Form completed by:

IN-HOUSE TRC PROJECT BUDGET REVISION REQUEST FORM

This form must be submitted if the current fiscal year requires a budget revision. There will be no additional budget revisions during the project except for the following reasons:

1. ARDOT changes scope of project after the project has started.
2. Equipment line item was underestimated at the signing of the contract.
3. Delay to the project due to construction schedules or construction job let dates, natural disasters, death or major hospital stays, retirements, or government shutdown.

All forms must be submitted on Doc Express by March 15th.

Project Name		**Project Number**	TRC
Start Date		**Number of Revisions**	
Date Submitted		**Percentage Completed**	0.00%

JUSTIFICATION FOR REQUESTED REVISION:

IN-HOUSE TRC PROJECT BUDGET REVISION REQUEST FORM

Project Name		Project Number	TRC	Fiscal Year	

Complete the Proposed Budget Blocks

Current Budget LINE ITEM		Proposed Budget LINE ITEM	
SALARIES	$ 0.00	SALARIES	$ 0.00
WAGES	$ 0.00	WAGES	$ 0.00
FRINGE BENEFITS	$ 0.00	FRINGE BENEFITS	$ 0.00
SUPPLIES AND SERVICES	$ 0.00	SUPPLIES AND SERVICES	$ 0.00
TRAVEL	$ 0.00	TRAVEL	$ 0.00
INDIRECT COSTS	$ 0.00	INDIRECT COSTS	$ 0.00
EQUIPMENT	$ 0.00	EQUIPMENT	$ 0.00
SUBCONTRACTS	$ 0.00	SUBCONTRACTS	$ 0.00
TUITION	$ 0.00	TUITION	$ 0.00
TOTAL	$ 0.00	**TOTAL**	$ 0.00

Form completed by:

Project Information Sheet

Project Number: _____ Project Title: _____ Charge Number: _____
Proposed Start Date: _____ Completion Date: _____ Duration (Months): _____ Contract Budget: _____
Principal Investigator: _____ Contracting Agency: _____
Project Coordinator: _____
Subcommittee Members: _____

RFP Prepared: _____ Approved by Subcommittee: _____ Mailed Out: _____

Proposal	Date Received	From Whom	Staff Reviewed	Subcommittee	Proposal Selected
1					
2					
3					

Date Revised: _____ TRC Approved _____ Contract Signed: _____ Sent to FHWA: _____
Letter Sent to Contractor Authorizing Work To Begin (Date): _____

Subcommittee Meeting Dates: _____

Monthly Visits Dates: _____

Reporting Frequency: **Quarterly**
Due Date: _____ Received: _____

Final Report: Draft Due: _____ Received: _____ To Subcommittee: _____
Returned to Contractor: _____ Corrections Due: _____ Received: _____ Approved: _____

Distribution of Final Report:

	Copy of Report Sent To	Date	Number of Copies
1			
2			
3			
4			

Implementation:
Report Due: _____ Received: _____
Meeting Date: _____
Implementable: ___ Tracking Start Date: _____
Update: Year 1: _____ Year 2: _____
Year 3: _____

Contract Changes and Billing:
Budget Revisions: Requested: _____
Approved: _____
Additional Funds Requested: Amount: _____ Requested: _____ Approved: _____
Project Extension: Type: _____ Requested: _____ Approved: _____
Claims:
Received: _____
Paid: _____

Date	Equipment Purchased	Cost	Date Returned

Audit Review Sheet

Project File should be set up for each Research Project
'A - E' individual folders should be set up within each project file

A - Correspondance **C** - Progress Reports **E** - Audit
B - Agreement and Proposal **D** - Equipment

File A = any correspondence transmitting documents to or from subcommittee, PI, coordinator, consultant, etc. *Project Information Sheet stapled to inside front cover*
File B = Proposal, Contract, Work Plan, Extensions, Budget Revisions
File C = Quarterly Reports, Annual Reports, Monthly Visit Sheets, Interium, Final Report, Implementation Report, Benchmark Report
File D = Equipment that is value is over $2,500.00 and has a life at least 5 years. Has to have Equipment Capitalization Notice. Inventory List for item from $100.00 to $2500.00
Copies of Invoices for Equipment purchases $100 and up,
File E = Documents pertaining to Time, Money, or Personnel changes
Claims and backup documentation

File Review Project #_____

Project Information Sheet		
Appointment of Subcommittee Memo	**A**	
Memo First Meeting	**A**	
Minutes of First Meeting (Should determine if In-House or Contract)	**A**	
Letter of Solicitation	**A**	
Letters from Interested Parties	**A**	
Memo to Subcommittee of meetings with Interested Parties	**A**	
Minutes of Interested Parties Meetings	**A**	
Memo of Subcommittee Meeting to develop, to write and/or finalize RFP	**A**	
Letter transmitting RFP and list of whom	**A**	
Signed Contract or Work Plan	**B**	
Letter to FHWA with copy of contract or work plan	**A**	
Authorization Letter to begin work	**A**	
Memo's pertaining to all subcommittee meetings or other related meetings	**A**	
Minutes of meetings	**A**	
Quarterly Reports (every 3 months from starting date of project)	**C**	
Annual Reports	**C**	
Monthly Visits	**C**	
Budget Revisions (Letters requesting Increase of Funds or Time)	**B**	
Budget Revisions (Letters approving Increase of Funds or Time)	**B**	
Claims with backup documentations (payroll records, receipts)	**E**	
Equipment (Capitalization Notices for equip over $2500.00 or paid bill for small purchases)	**D**	
Inventory List (inventoried items from $100.00 to $2500.00)	**D**	
Final Report Letter to FHWA with copy of Final	**A**	
Implementation meeting, report or plans if required	**A**	

ACTION PLAN FOR PROJECT

*Change the red font to match the project/opportunity/T2 you are reporting about.

PROBLEM STATEMENT:

State the problem statement or the issue that you were assigned. This should explain enough about the problem so if you are passing the work to someone else then they will understand the reason the project started.

CURRENT SITUATION:

Bullet list what has happened from beginning of the project until now. Each month, the updated issues need to be in red.

MILESTONES:

This is where the milestones that are hit need to be listed. For TRC/MBTC projects, this will include the major milestones that are listed in the project contract. For T2, this will include new classes, if new instructors are hired, or if present instructors are no longer needed (i.e. they retire).

ACTION ITEMS:

This table will be used to keep up with the needed items that were assigned/agreed upon and the due date.

DATE	ACTION NEEDED	RESPONSIBLE	DUE DATE

COMPLETED ITEMS:

Once action items are completed then they go from the above table to this one. If there are issues with the item it needs to be addressed as a bullet statement in the Action Items area.

DATE	ACTION NEEDED	RESPONSIBLE	DUE DATE

BUDGET:

This is where budget issues need to be stated in bullet format and a copy of the project budget is place with an extra column that shows the expenditures in each area. T2 needs to have the same setup with its budget. If you are working on an opportunity then the budget area needs to show total budget and expenditures for the month.

Any equipment that has been purchased need to be listed here.

ISSUES – UNRESOLVED/RESOLVED:

Here is where you state any issues you are having and who is responsible for the problem; make sure to state if the issue is unresolved or resolved. An ongoing log of the issues that the project has should help with future projects.

TITLE VI:

The following principal investigators or students meet the requirements of Title VI of the Civil Rights Act of 1964:

John Doe

T2:

Scheduled classes for the upcoming month, completed classes for the last month, students in each class that was completed, and which classes had been scheduled but were not given and the reason given for its incompletion.

Date Submitted

Quarterly Period

ARKANSAS

Year

QUARTERLY PROGRESS REPORT

I. Identification

A. Job and TRC No.

B. Title of Project (exactly as given in the Project Agreement)

II. History

A. Date Project Started

B. Duration of Entire Project

III. Responsibility

A. Agency Conducting Research

B. Department of that Agency

C. Principal Investigator

IV. Progress

A. Reference to Project Work Plan Schedule, noting whether the work is ahead of or behind schedule, specifying items completed ahead of schedule and items not completed on schedule, and proposed modifications of work plan.

B. Significant technical information developed.

V. Research Implementation

A. Identify and describe briefly the potential application of any significant technical information developed.

B. Describe briefly steps for implementation of findings. Also give information on benefits of any previously implemented results.

VI. Problems

A. Personnel changes in principal investigators and graduate assistants, etc., anticipated or accomplished.

B. Technical problems, including requests for assistance or comment from the Department or Federal Highway Administration.

VII. Describe work planned for next quarter.

VIII. Statement of efforts to comply with Civil Rights Requirements.

IX. Title VI of the Civil Rights Act of 1964.

A. Summary of faculty that worked on this project for the reporting period by race and sex:

B. Summary of students that worked on this project for the reporting period by race and sex:

X. Finances

A. Total estimated project cost

B. Total expenditures to date

C. Current fiscal year budget

D. Current fiscal year expenditures

E. Any early indication of insufficiency of funds

XI. Reports

(Expected date of next interim of final report)

XII. Work-time schedule

Technical Report Documentation Form

1. Report No.	2. Government Accession No.	3. Recipient's Catalog No.	
4. Title and Subtitle		5. Report Date	
		6. Performing Organization Code	
7. Author(s)		8. Performing Organization Report No.	
9. Performing Organization Name and Address		10. Work Unit No. (TRAIS)	
		11. Contract or Grant No.	
12. Sponsoring Agency Name and Address		13. Type of Report and Period Covered	
		14. Sponsoring Agency Code	
15. Supplementary Notes			
16. Abstract			
17. Key Words	18. Distribution Statement		
19. Security Classification (of this report)	20. Security Classification (of this page)	21. No. of Pages	22. Price

Form DOT F 1700.7 (8-72) **Reproduction of completed page authorized**

ANNUAL PROGRESS REPORT

I. Identification

A. Job and TRC No:
B. Title of Project:

II. History

A. Date Project Started:
B. Duration of Entire Project:

III. Responsibility

A. Agency Conducting Research:
B. Department of that Agency:
C. Name of the Projector Director:
D. Project Coordinator:

IV. Progress

A. Reference to Project Work Plan Schedule, noting whether the work is ahead of or behind schedule, specifying items completed ahead of schedule and items not completed on schedule, and proposed modifications of work plan.

B. Significant technical information developed.

V. Research Implementation

A. Potential application of any significant technical information developed.

B. Describe briefly steps for implementation of findings. Also give information on benefits of any previously implemented results.

VI. Problems

A. Personnel changes in PI and graduate assistants, etc. anticipated or accomplished.

B. Technical problems, including requests for assistance or comment from Department or FHWA.

VII. Describe work planned for next quarter.

VIII. Statement of efforts to comply with Civil Rights Requirements.

IX. Finances

A. 20 Fiscal Year Budget: $
B. 20 Fiscal Year Expenditures: $

X. Reports

XI. Work-time schedule

ARKANSAS DEPARTMENT OF TRANSPORTATION
SYSTEM INFORMATION AND RESEARCH DIVISION

Date Submitted

RESEARCH PROJECT CLAIM

Job No. _____ **Project No.** _____
Object No. _____ **Claim No.** _____
Function No. _____ **Fiscal Yr.** _____
Budget No. _____ **From** _____
PI: **To** _____

Name of Project: _____
Contractor: _____
P.O. Address: _____
Federal ID: _____

ITEM No.	ITEM	Estimated Project Cost	Total Spent To Date	Fiscal Yr Estimate	Previous Claim FY	This Claim	Total Claim This Fiscal Year
1	Salaries						
2	Wages						
3	Fringe Benefits						
4	Supplies & Services						
5	Travel						
6	Indirect Cost						
7	Tuition						
8	Subcontract						
9	Equipment						
	TOTALS	**$ 0.00**	**$ 0.00**	**$ 0.00**	**$ 0.00**	**$ 0.00**	**$ 0.00**

Length of Project Time _____
Percent of Time Used 0%
Percent Work Completed 0%

Grand Total Fiscal Year **$ 0.00**
Less Previous Claim **$ 0.00**
Amount Due This Claim **$ 0.00**

Examined & Approved:

_____
Principal Investigator

Certified Correct:

_____
Director of Research Accounting

EXCEPTIONS

Approved:

_____
Staff Research Engineer

Examined & Checked By:

_____
Project Coordinator

Approved For Payment:

_____
System Information & Research Engineer

Recommended:

_____
Administrative Officer

Paid Voucher No. Date _____

Auditor

TRAVEL EXPENSE DETAIL REPORT

This form is to be completed for any travel reimbursement expense submitted for a TRC project. At a minimum, this form must include: all dates travelled, locations travelled, *all* travelers for each day, and an expenses log for each traveler detailing all expenses included in the claim. The Department can only reimburse for *actual* cost associated with the travel, not a flat per diem. Current rates can be found on the US General Services Administration website. Receipts for meal reimbursements (only allowed with over-night travel) are not required if listed on this form. Any other expense claimed for reimbursement must be verified with an original receipt. Hotel and airfare receipts *must* be original zero balance receipts to verify actual amount paid including tax. If claiming the expense of a rental vehicle you are not able to also claim mileage.
Additional forms may be submitted if trip is longer than 3 days. A separate form must be submitted for each trip.
If completed for out-of-state travel, an Out-of-State Travel approval sheet must have been submitted *prior* to trip and must be approved by the Department for reimbursement to be issued.

Name		**Project**	**TRC** 1701	**Claim #**
Date of Travel		**Out-of-State?**	☐	

TRIP LOG

Date	From/Destination	List of Travelers and Day's Tasks
08:00 A.M 05:00 A.M		
08:00 A.M 05:00 A.M		
08:00 A.M 05:00 A.M		

EXPENSE LOG FOR:

Category	Date	Details	Subtotal
Transportation			
Personal ☐		**Mileage(using Rand McNally or Official State Hwy Map):** x	$ 0.00
Rental ☐		**Gas Expense:**	$ 0.00
		Rental Cost:	$ 0.00
Air ☐		**Date Tickets Bought:**	
		Ticket Cost:	$ 0.00
Lodging			
		Hotel Location :	
		Hotel Location :	$ 0.00
		Hotel Location :	$ 0.00
Daily Meals			
		☐ Breakfast ☐ Lunch ☐ Dinner	
		☐ Breakfast ☐ Lunch ☐ Dinner	$ 0.00
		☐ Breakfast ☐ Lunch ☐ Dinner	$ 0.00
		Total	$ 0.00

Form Completed by: **Date:**

EXPENSE LOG FOR: 0.00%

Category	Dates	Details	Subtotal
Transportation			
Personal ☐		**Mileage(using Rand McNally or Official State Hwy Map):** x $ 0.42	$ 0.00
Rental ☐		**Gas Expense:**	$ 0.00
		Rental Cost:	
Air ☐		**Date Tickets Bought:** **Ticket Cost:**	$ 0.00
Lodging			
		Hotel Location :	$ 0.00
		Hotel Location :	$ 0.00
		Hotel Location :	$ 0.00
Daily Meals			
		☐ Breakfast ☐ Lunch ☐ Dinner	$ 0.00
		☐ Breakfast ☐ Lunch ☐ Dinner	$ 0.00
		☐ Breakfast ☐ Lunch ☐ Dinner	$ 0.00
		Total	$ 0.00

EXPENSE LOG FOR:

Category	Dates	Details	Subtotal
Transportation			
Personal ☐		**Mileage(using Rand McNally or Official State Hwy Map):** x	$ 0.00
Rental ☐		**Gas Expense:**	$ 0.00
		Rental Cost:	$ 0.00
Air ☐		**Date Tickets Bought:** **Ticket Cost:**	$ 0.00
Lodging			
		Hotel Location : 0.00%	$ 0.00
		Hotel Location :	$ 0.00
		Hotel Location :	$ 0.00
Daily Meals			
		☐ Breakfast ☐ Lunch ☐ Dinner	$ 0.00
		☐ Breakfast ☐ Lunch ☐ Dinner	$ 0.00
		☐ Breakfast ☐ Lunch ☐ Dinner	$ 0.00
		Total	$ 0.00

ARKANSAS STATE HIGHWAY AND TRANSPORTATION DEPARTMENT

Out-of-State Travel Authorization

Date: _____

It is requested that travel authorization be approved for:

1. _____
Employee Name Title

2. **Purpose of Trip:** _____

3. **Destination(s):** _____

4. **Mode of Travel:** _____

5. **Date of Departure:** _____ **Date of Return:** _____

6. **Employee Budget:** _____ **Function:** _____ **Object:** 275 **Job #:** _____
FAP #: _____

7. **Estimated Cost For:**

a.	**Transportation:**	
	Air Travel	_____
	State/Personal Car	_____
	Rental Car	_____
	Other Ground Transportation	_____
b.	**Meals and Lodging**	_____
c.	**Registration Fees**	_____
d.	**Miscellaneous Items**	_____
	Estimated Total Cost	
	Amount reimbursed to AHTD from _____	_____
	Net AHTD Cost	

Submitted by: _____
Traveler

Requested by: _____ **Approved by:** _____
Planning and Research Engineer Director (Travel Administrator)

Submit Original Only.

EQUIPMENT CAPITALIZATION NOTICE

DATE: _____

TO: Research Section
Arkansas Department of Transportation
P.O. Box 2261
Little Rock, AR 72203

SUBJECT: Receipt of Non-Expendable Equipment for Project TRC _____

This is to notify ARDOT that we are now in possession of

_____
(name of equipment)

Model No. _____,Serial No. _____
This equipment is located at _____

_____
and an invoice in the amount of $ _____ (total cost) has been paid to _____ (supplier) for this equipment.

We hereby certify that the cost of this equipment is not included in indirect cost.

Signed_____ Signed_____
Principal Investigator Department Head

Date_____ Date_____

ARDOT assigned No. _____

NOTE: All non-expendable equipment will be capitalized by the Arkansas Department of Transportation, not by the research Contractor.

Submit Original Copy Only Obtained Through Project Coordinator.

ARKANSAS DEPARTMENT of TRANSPORTATION

RESEARCH EQUIPMENT INVENTORY RECORD

Project No. _____ Claim No. ____ Page ___ of ___

Item No.	Description (Model, Etc.)	Purchased From	ID or Serial No.	Date Acquired	Initial Cost	Disposition Date	Remarks

This form must be completed for all equipment purchases of $100 or more that would otherwise be capitalized by ARDOT.

ONGOING RESEARCH IMPLEMENTATION PROGRESS

GENERAL PROJECT INFORMATION

<table>
<tr><td colspan="2">PROJECT TITLE:</td><td>PROJECT NUMBER:</td></tr>
<tr><td>COORDINATOR:</td><td>PRINCIPAL INVESTIGATOR:</td><td>PROJECT TYPE: Circle One
Contract In House</td></tr>
<tr><td colspan="2">DATE OF WORK ORDER:</td><td>DATE OF IMPLEMENTATION PLAN:</td></tr>
<tr><td colspan="3">PROJECT SUBCOMMITTEE COMMENTS AT INITIATION OF PROJECT:</td></tr>
<tr><td colspan="3">END OF FISCAL YEAR 1 MAJOR IMPLEMENTATION FINDINGS:</td></tr>
</table>

ONGOING RESEARCH IMPLEMENTATION PROGRESS

IMPLEMENTATION MEETING COMMENTS (6 MONTHS PRIOR TO PROJECT COMPLETION):
END OF PROJECT IMPLEMENTATION COMMENTS:

ONGOING RESEARCH IMPLEMENTATION PROGRESS

END OF FISCAL YEAR 2 MAJOR IMPLEMENTATION FINDINGS (IF NEEDED):
END OF FISCAL YEAR 3 MAJOR IMPLEMENTATION FINDINGS (IF NEEDED):

ONGOING RESEARCH IMPLEMENTATION PROGRESS

EXTRA COMMENTS (IF NEEDED):

TRC Project No.	Completed by:
Research Project Title:	
Principal Investigator:	Co-PI (Is any):
PI Institution:	
The purpose of this form is to identify the strengths and weaknesses in the performance of the research project. A rating of 1 or 5 must include comments justifying the selection.	
	Poor - Satisfactory - Excellent
1. Were the overall project objectives met?	1____2____3____4____5____
Comments:	
2. Was the research team responsive to requests/inquiries from the project manager?	1____2____3____4____5____
Comments:	
3. Were the fiscal year project expenditures in line with	1____2____3____4____5____
Comments:	
4. Was the project completed on schedule?	1____2____3____4____5____
Comments:	
5. Were the deliverables (quarterly reports, final reports, etc.) submitted in a timely manner?	1____2____3____4____5____
Comments:	
6. Was the final report thorough and technically correct?	1____2____3____4____5____
Comments:	
7. Was the final report delivered in an editorially acceptable form?	1____2____3____4____5____
Comments:	
8. Would you consider the PI for future work?	1____2____3____4____5____
Comments:	
Other comments about the project that might be helpful?	
Comments:	

ARKANSAS TECHNOLOGY TRANSFER (T^2) PROGRAM

TRAINING PROPOSAL and APPROVAL FORM

Training Course Requested: _____

Date of Request: _____ City or County: _____

Requested By (Individual): _____

Job Title or Duty Position: _____

Mailing Address: _____

_____

_____

Business Phone: _____ Mobile Phone: _____

Fax #: _____ E-mail: _____

Training Date(s): _____ # of Classes: _____

Training Time(s): _____

Training Location & Address: _____

_____

_____

Field Training Location & Address: _____

_____

_____

Anticipated Attendance (per session): _____

To be completed by Technology Transfer (T^2) Center

Date Received: _____ Approval Date: _____

Training Confirmed by: _____

Instructor Advised (Date and Method): _____

Local Agency Contact Advised (Date and Method): _____

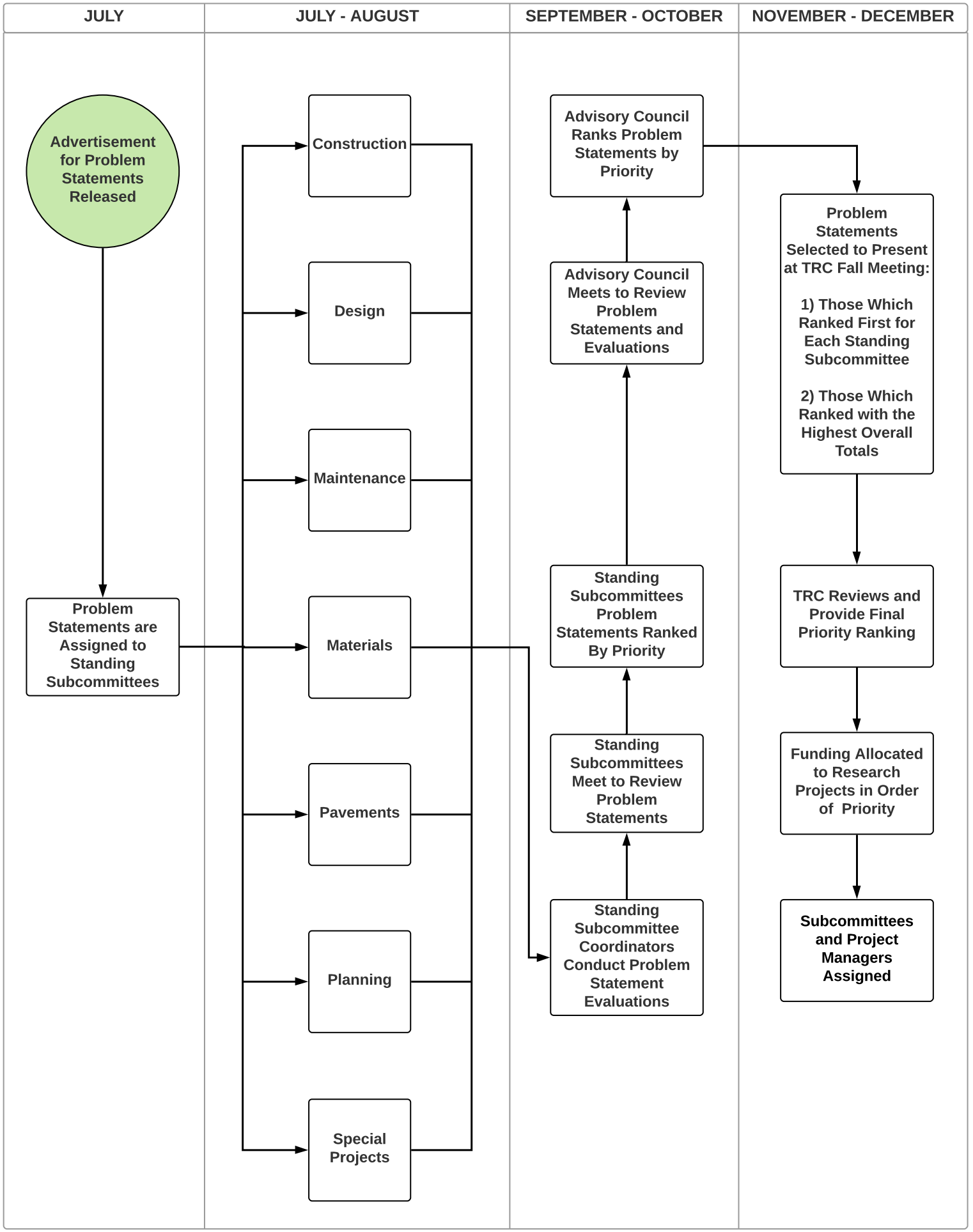
Comments: _____

_____

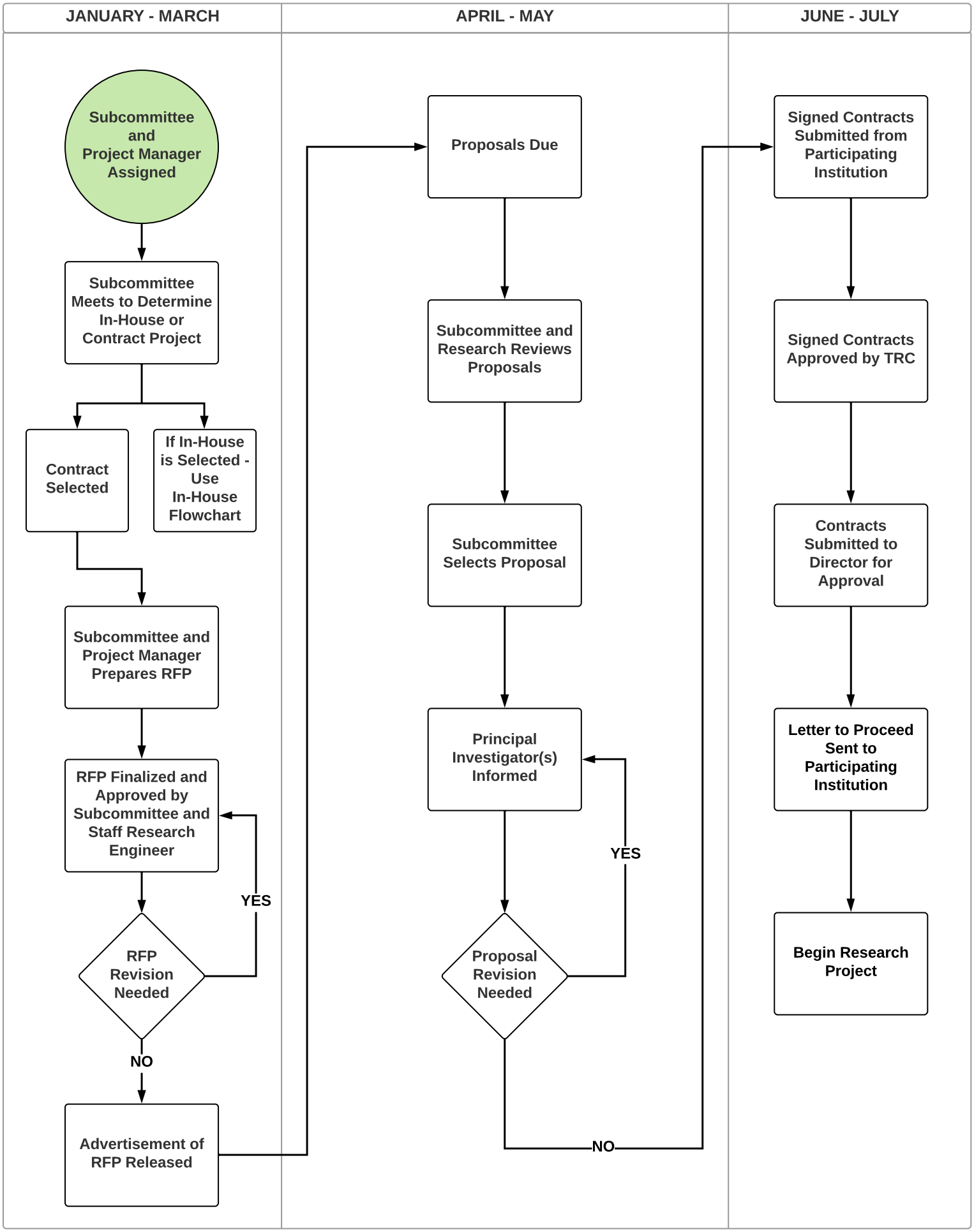
_____

Appendix 2: Flowcharts

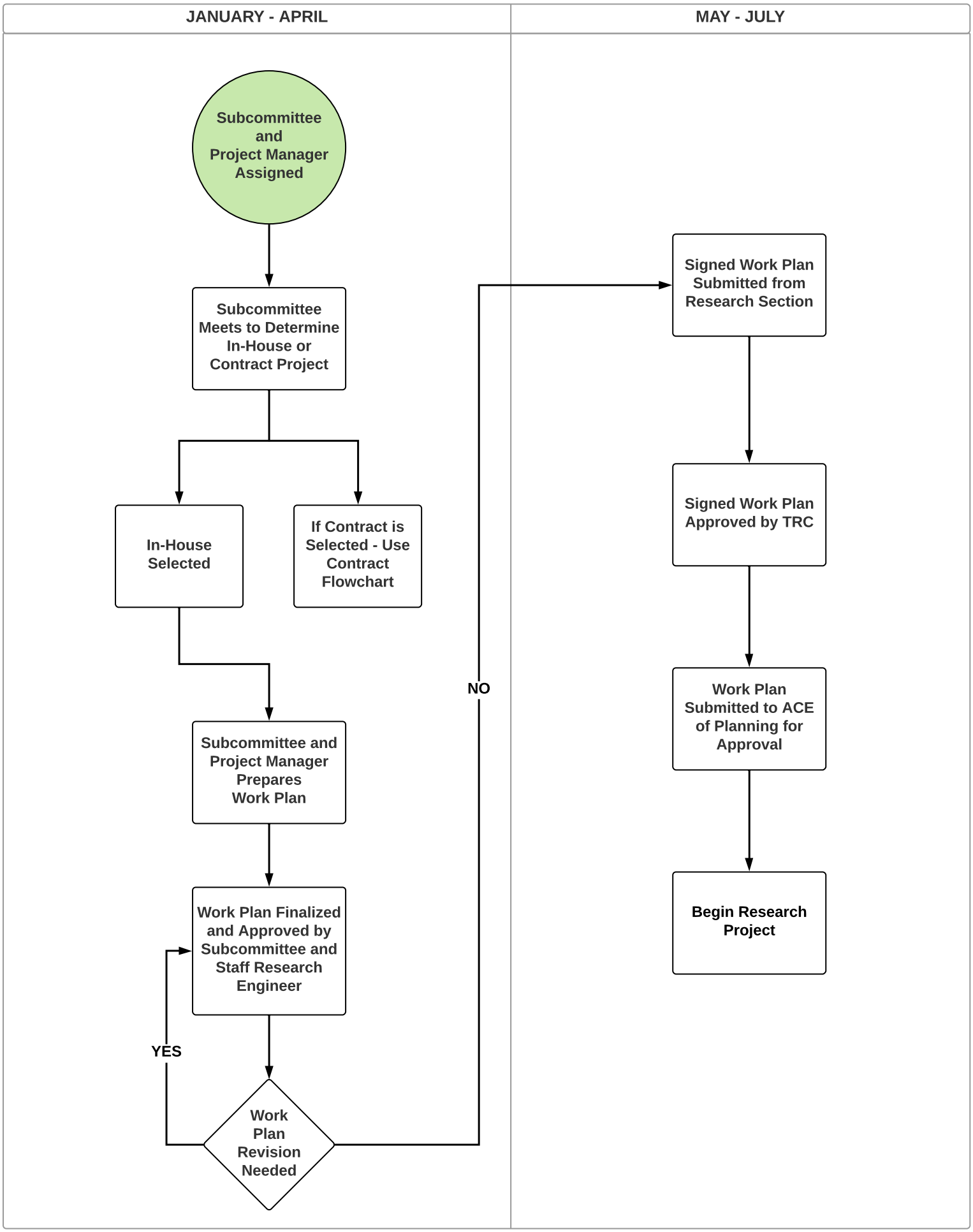
TRC RESEARCH PROJECT DEVELOPMENT PROCESS



TRC RESEARCH PROJECT - CONTRACT RESEARCH PROJECT PROCESS

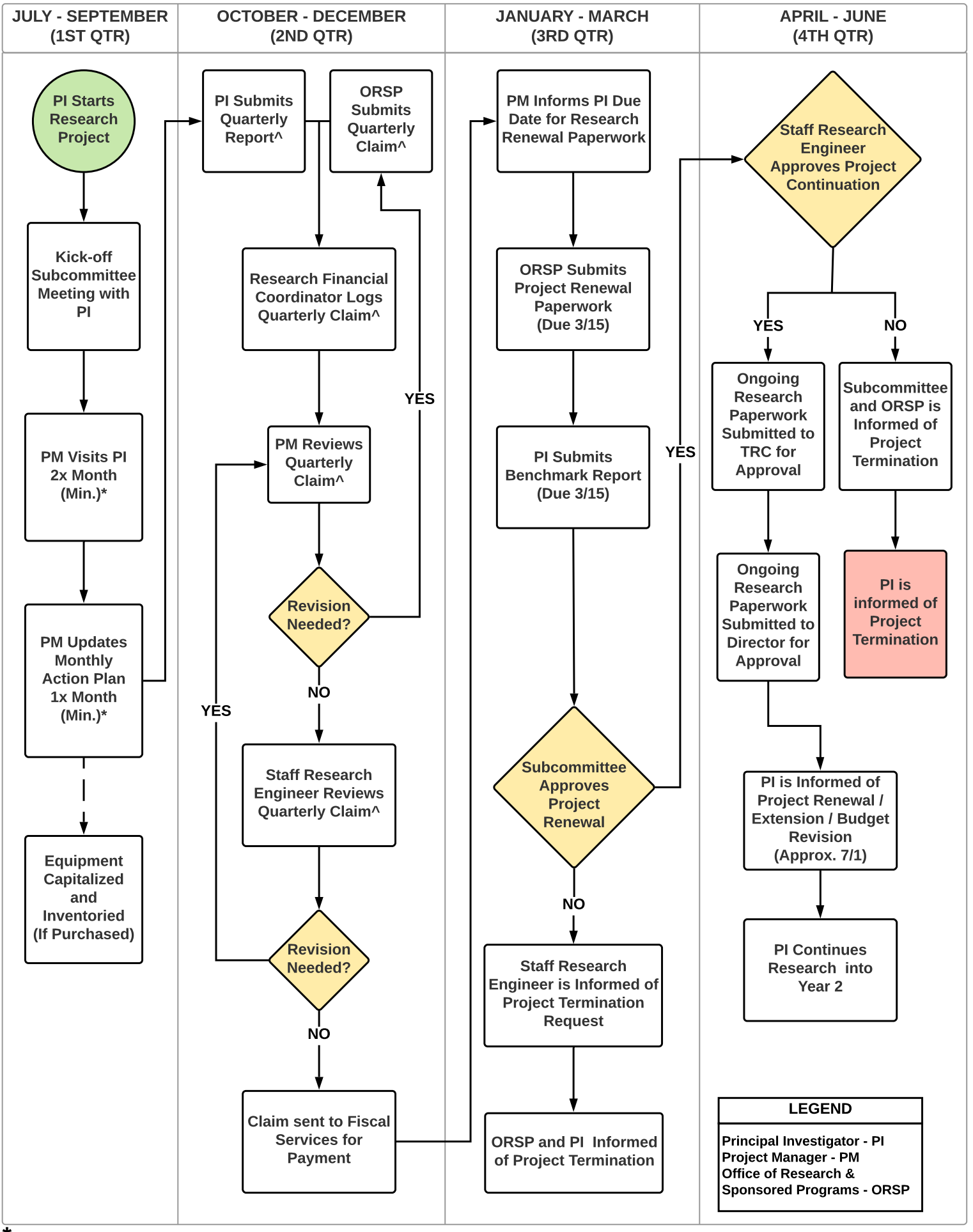


TRC RESEARCH PROJECT - IN-HOUSE RESEARCH PROJECT PROCESS



Last Modified: 1/31/2019

TRC RESEARCH PROJECT MANAGEMENT PROCESS (YEAR 1)

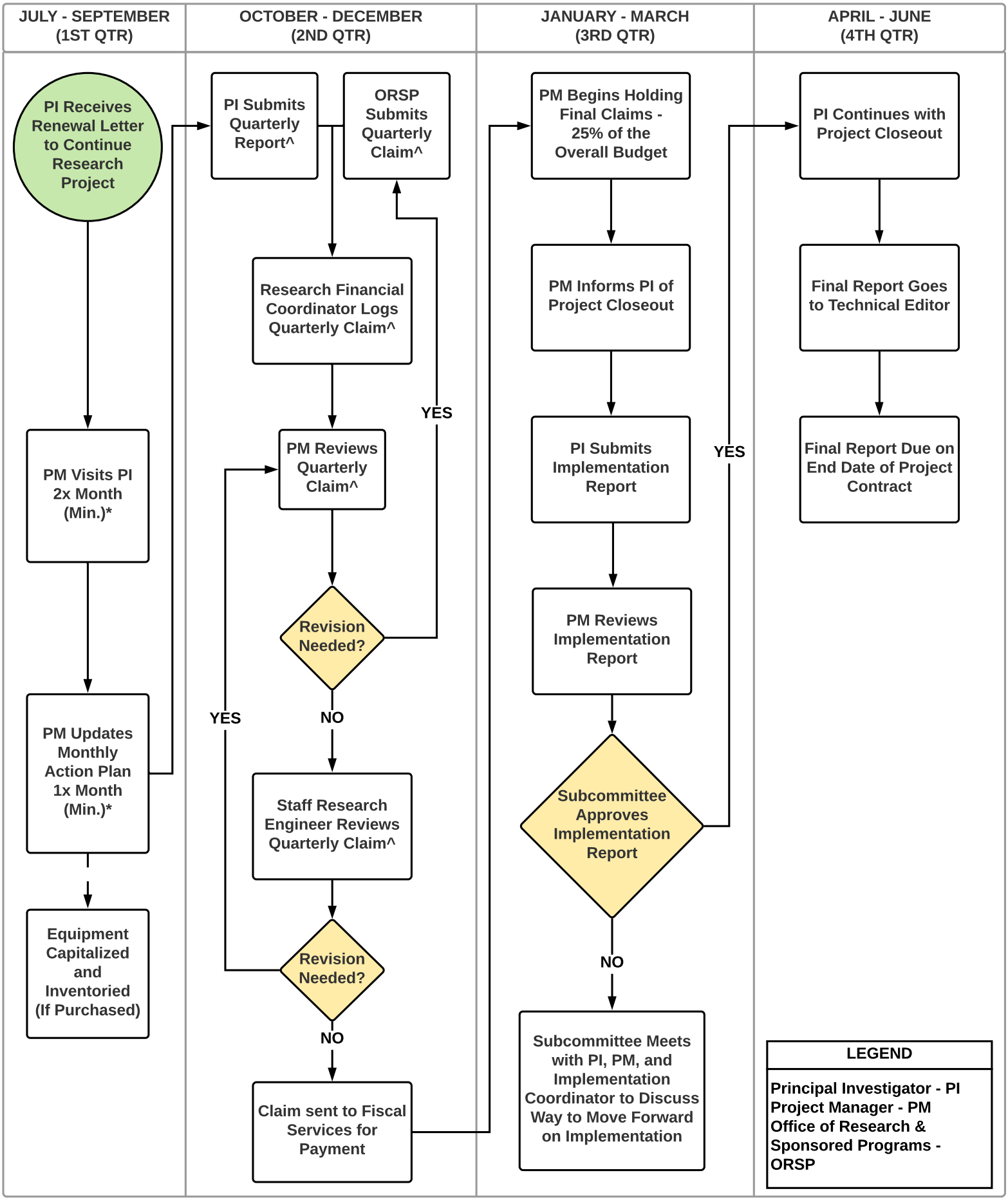


***** - These Activities are Performed Every Month for the Duration of the Project

^ - These Activities are Performed Every Quarter for the Duration of the Project

Last Modified: 1/31/2019

TRC RESEARCH PROJECT MANAGEMENT PROCESS (YEAR 2)

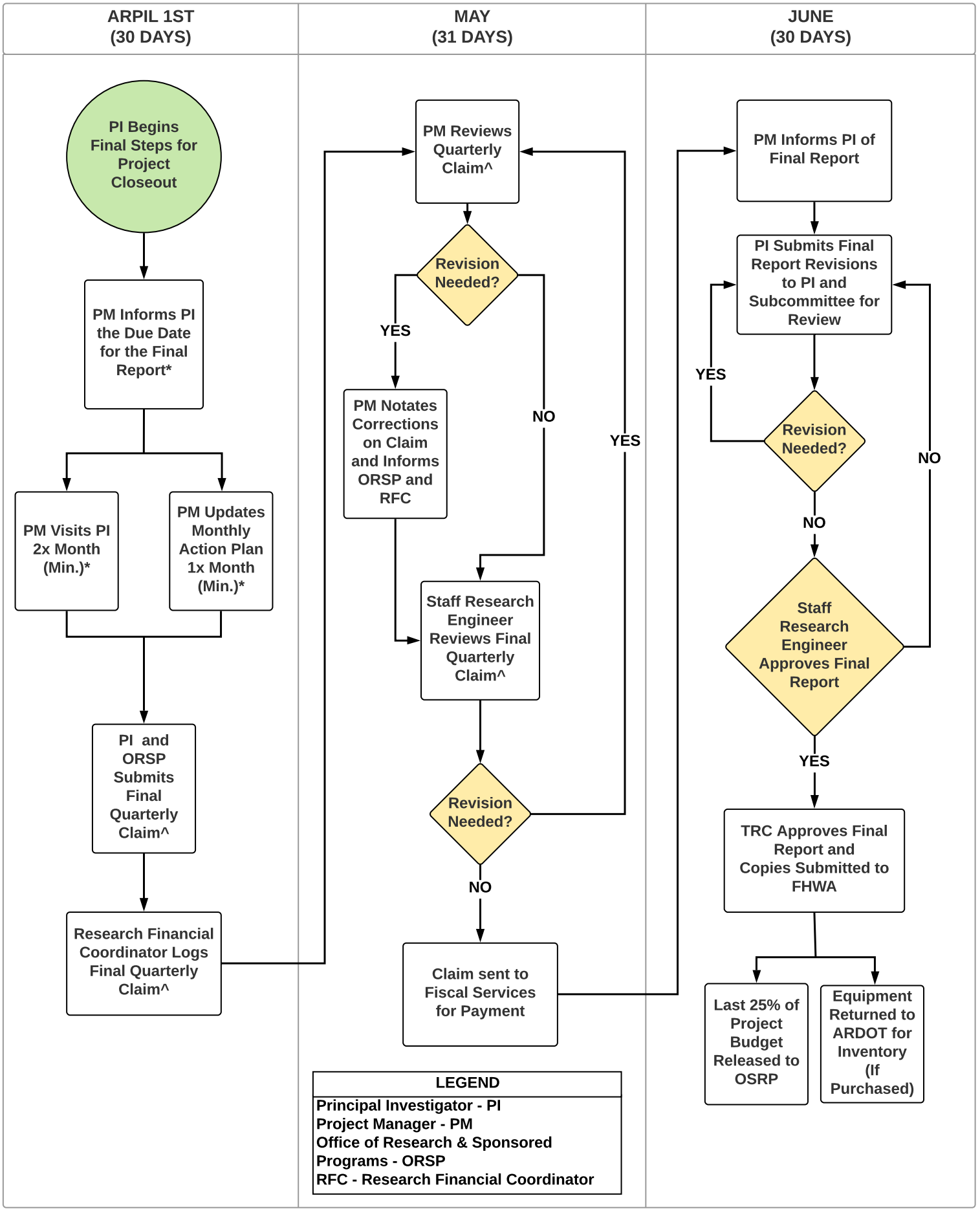


***** - These Activities are Performed Every Month for the Duration of the Project

^ - These Activities are Performed Every Quarter for the Duration of the Project

Last Modified: 1/31/2019

TRC RESEARCH PROJECT MANAGEMENT PROCESS - PROJECT CLOSEOUT

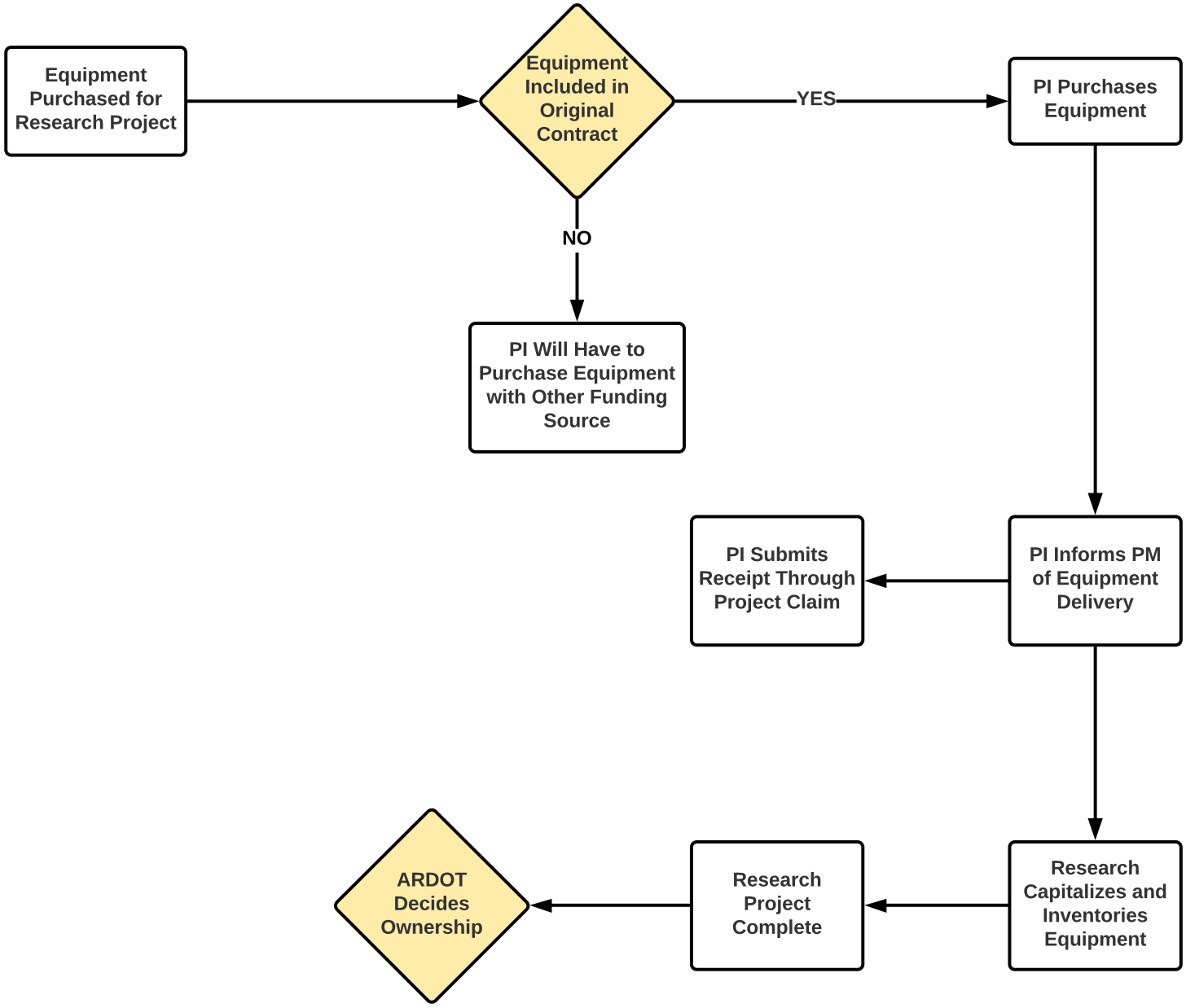


***** - These Activities are Performed Every Month for the Duration of the Project

^ - These Activities are Performed Every Quarter for the Duration of the Project

Last Modified: 2/4/2019

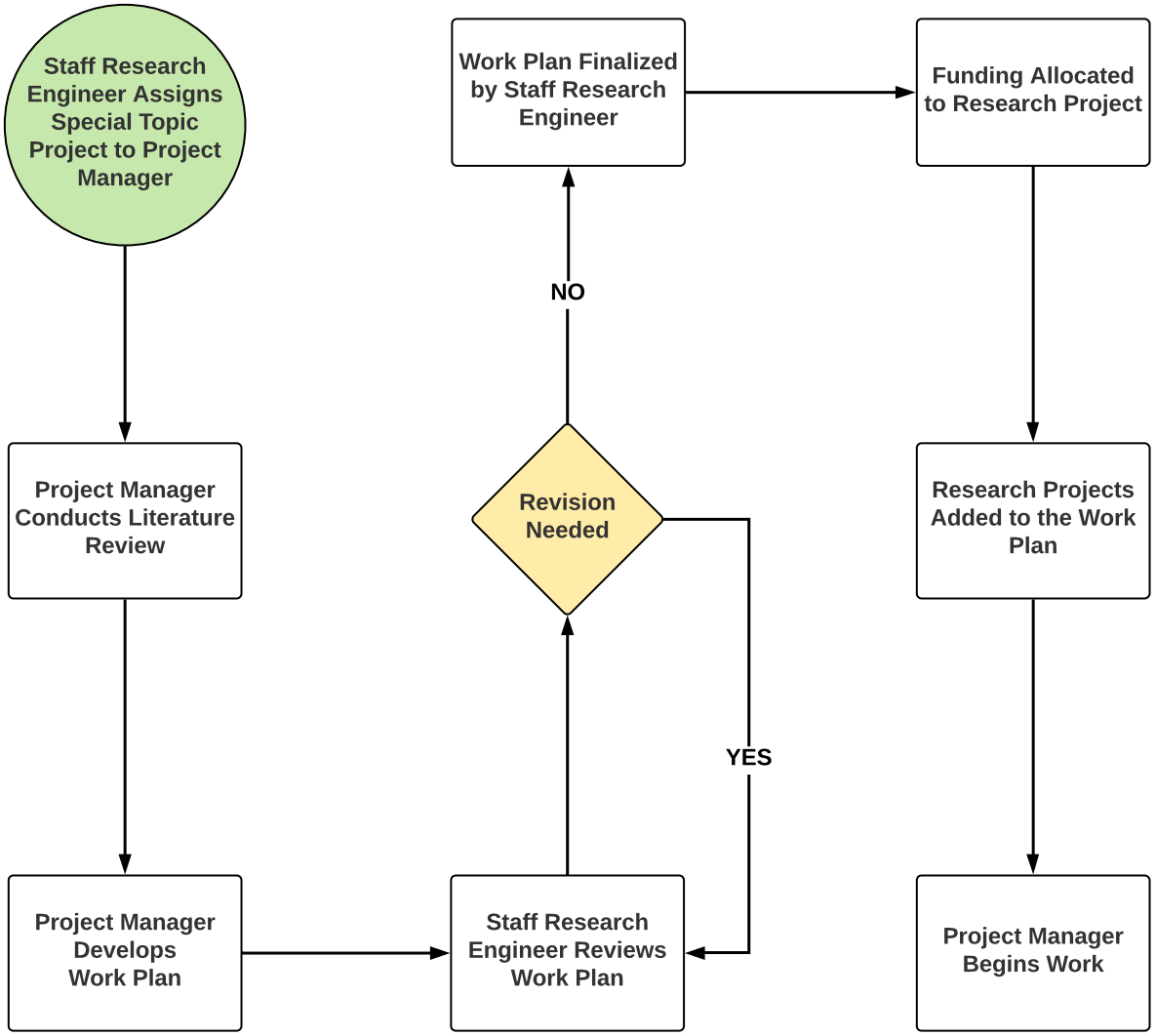
TRC RESEARCH PROJECT EQUIPMENT INVENTORY PROCESS - CONTRACT PROJECT



LEGEND
Principal Investigator - PI Project Manager - PM

Last Modified: 2/4/2019

RESEARCH PROJECT DEVELOPMENT PROCESS FOR SPECIAL TOPICS AND OPPORTUNITIES



Appendix 3: Responsibilities Checklists

PI for Contract Projects (Checklist included in PI Quick Reference)

☐ As requested, attends Project Subcommittee meetings.
☐ Prepare contract project proposal.
☐ Coordinate the research of the contract project.
☐ Update PM on project status as requested.
☐ Submit Quarterly Reports to the PM within seven (7) days of the end of every project quarter.
☐ Complete an in depth Implementation Plan with the PM, a member of the RIC, and the subcommittee six (6) months before project completion.
☐ Submit a Final report no later than the completion date of the project contract.
☐ Submit Benchmark and Interim Reports at specified intervals as specified within the Contract.
☐ Manage Contract Project timeline throughout the duration of the project based on submitted work plan.
☐ Submit claims for cost reimbursable contracts every quarter and managing contract budget expenditures.
☐ Ensure all documentation submitted to the Department is accurate and complete with minimal errors.
☐ Present updates or findings at TRC meetings as requested.

PM for Contract Projects

☐ Assist in preparing and reviewing the RFP, proposals, and work plans for new projects.
☐ Schedule and conduct a project kick off session at the beginning of the project.
☐ Monitor progress of the project, ensuring that project is in accordance with timeline.
☐ Coordinate efforts of all personnel directly involved with the work.
☐ Act as secretary to the Research Project Subcommittee and record project subcommittee minutes.
☐ Coordinate with the PI, subcommittee, and other Department employees.
☐ Review all reports and claims prepared by PI; checking for accuracy and completeness.
☐ Create and update monthly Action Plan and conduct bi-weekly visits and monthly in-person visits.
☐ Keep the subcommittee informed of progress and activities of the researchers.
☐ Schedule and conduct a project close out session upon completion of the project.
☐ Assist RIC with all implementation tracking throughout life of the project and no less than three years after the completion.
☐ Work with subcommittee to document project results incorporated into highway projects.
☐ Ensure that Project Information file is kept up to date, no update should be later than the past quarter.

☐ Save, organize, and keep files up-to-date on Research drive and paper files. This includes all reports, minutes, correspondence, proposals, contracts, etc.
☐ Serve as liaison between the subcommittee and the area of the Department involved with implementation.
☐ Perform necessary administrative and technical activities on behalf of the Department.

Pm for In-House Projects

☐ Prepare Project Work Plan.
☐ Coordinate all research within the scope of the project.
☐ Schedule and conduct a project kick off session at the beginning of the project.☐ Complete and submit all required reports.
☐ Manage project timeline throughout duration of the project.
☐ Schedule and conduct a project close out session upon completion of the project.

Project Subcommittee

☐ Assist the Pm in the development of the Work Plan or RFP, this may be done through email and in-person meetings.
☐ Reviews all proposals received and makes recommendations to the TRC concerning the proposals.
☐ Assist in necessary revisions when a Work Plan or Proposal is not approved by the Department's Administration.
☐ Provide expertise and other assistance as needed while research is on-going.
☐ Review proposed changes in the scope, objectives, or budget on a project after work has started and submit recommendations to the Staff Research Engineer.
☐ Review, submit changes to, and approve the minutes of all meetings; these are to be recorded by the subcommittee secretary (PM).
☐ Attend subcommittee meeting at least once per fiscal year or as often as the Chairperson may direct to assure that all members are aware of progress, problems, work schedule, etc.

Project Subcommittee Chairperson

☐ Reviews all proposals received and makes recommendations to the TRC concerning the proposals.
☐ Assist in necessary revisions when a Work Plan or Proposal is not approved by the Department's Administration.
☐ Provide expertise and other assistance as needed while research is on-going.
☐ Review proposed changes in the scope, objectives, or budget on a project after work has started and submit recommendations to the Staff Research Engineer.

☐ Review, submit changes to, and approve the minutes of all meetings; these are to be recorded by the subcommittee secretary.

☐ Call and attend subcommittee meeting at least once per fiscal year or as often as needed to assure that all members are aware of progress, problems, work schedule, etc.

Research Financial Coordinator

☐ Coordinate and monitor project research budgets for the Section in accordance with applicable federal and state regulations.

☐ Review and submit research contract claims.

☐ Issue PO numbers for office purchases, insure that all bills and invoices received by the Research section are paid, and maintain both digital and paper records related to CPO's.

☐ Maintain a copy of the Department's Accounting Manual. Should also have a base knowledge of applicable sections of the manual and have the ability to navigate it as needed.

☐ Conduct in-house research and literature reviews as needed.

☐ Monitor Section and Division budgets and Work Program activities.

☐ Compile financial summary, budget, and activities to be included in the annual Work Program.

☐ Coordinate and communicate with other Divisions and Sections of ARDOT on financial matters such as Minute Orders, Job Numbers, Invoicing, etc.

☐ Perform necessary administrative and technical activities on behalf of the Department.

Research Implementation Committee

☐ Provide the implementation recommendations as developed by the Project Subcommittee, considering the following questions:

- ☐ Do the study findings have potential application?
- ☐ Are the results practical for application to the transportation system or some other area?
- ☐ Do the findings show no conclusion but suggest other research needed?

☐ Describe potential impact of the recommendations in terms of cost, efficiency, safety, convenience, aesthetics, etc. Describe required changes to existing specifications, standards, procedures, etc, considering the following question:

- ☐ Will the findings have impact on the state of the art?
- ☐ Will the findings result in the application of new specifications, standards, or design procedures?
- ☐ Will the findings result in revision of existing specifications, standards, or design procedures?
- ☐ Will the findings result in the modification, development, and use of materials or equipment?

☐ Will the findings show other positive benefits such as reduced costs, greater efficiency, safer highways, greater convenience, aesthetics, etc.?

☐ What will be the economic result of applying the findings to the transportation and/or other applicable systems?

☐ Identify the target audience.

☐ List whomever you want to reach, their primary interest, and your objective in reaching them, considering the following questions:

☐ Who will benefit from this research?

☐ Where in the transportation or other applicable area can the findings be applied?

☐ Who will benefit from the findings?

☐ Describe practical areas of application and List the activities required for implementation, including resource needs. Consider needs for training, multimedia, and marketing.

☐ Identify which strategies would be most effective in implementation.

☐ Create a schedule for each discrete strategy or tactic.

☐ Define roles and responsibilities of all personnel involved in the implementation effort.

☐ Identify who will be the decision-makers to implement results of the research.

☐ Identify methods for evaluating the implementation effort.

☐ How will benefits be quantified or assessed?

Research Implementation Coordinator

☐ Prepare all needed documentation for the Implementation Committee as seen in the Research Implementation Committee checklist.

☐ Serve as Secretary for the Research Implementation Committee.

☐ Report findings to Research Implementation Committee.

☐ Insure implementation remains a primary objective for each project.

☐ Document all costs associated with the implementation of all research projects.

☐ Keep track of the implementation on all research projects using Research Project Implementation Tracking form.

☐ Attend Project Subcommittee meetings to provide update on current implementation tracking.

☐ Complete a more in depth Implementation Plan with the PM, PI, and the subcommittee six (6) months before project completion.

☐ Submit an annual implementation report, based on the established Implementation Plan, on completed projects each March for at least three years following the end of a project.

☐ Make an Implementation Plan with the PM, the PI, and the subcommittee at the beginning of the project.

Research Librarian

☐ Maintain a database with all research in progress and completed research.

☐ Ensure that all database subscriptions are maintained and up-to-date.

☐ Ensure research projects are updated on TRB's RiP and TRID.

☐ Compile and publish the Research Newsletter.

☐ Maintain Research Library both physically and electronically.

☐ Screen and disseminate non-Departmental research.

☐ Distribute state DOT Research Reports in accordance with the directive of the Federal Highway Administration (FHWA) and the State of Arkansas Library.

Standing Subcommittee

☐ Conduct initial review of Problem Statements within their area of expertise.
☐ Make recommendations and rank problem statements within their area of expertise.
☐ Provide comments on problem statements for proposers to use to make corrections in the future.
☐ Reject any problem statements that fall within the parameters in the Problem Statement Rejection Form.

Standing Subcommittee Chairman

☐ Take leadership role in directing standing subcommittee meeting.
☐ Serve as Department representative for field of expertise.
☐ Coordinate with Standing Subcommittee Coordinator to set up meeting time and location.
☐ Conduct initial review of Problem Statements within their area of expertise.
☐ Make recommendations and rank problem statements within their area of expertise.
☐ Provide comments on problem statements for proposers to use to make corrections in the future.
☐ Reject any problem statements that fall within the parameters in the Problem Statement Rejection Form.
☐ Serve as champion for top ranked subcommittee problem statement during TRC voting.

Standing Subcommittee Coordinator

☐ Coordinate the activities of their appointed subcommittee.
☐ Work with Standing Subcommittee Chairman to determine meeting time and place.
☐ Send notifications of standing subcommittee meetings.
☐ Serve as liaison on behalf of the subcommittee and the TRC.
☐ Coordinate efforts of all personnel directly involved with the work.
☐ Attend Standing Subcommittee meeting and Advisory Council meeting.
☐ Take notes of standing subcommittee comment on problem statements.

☐ Examine standing subcommittee votes and give overall rank of problem statements.
☐ Articulate Standing Subcommittee comments to Advisory Council.
☐ Send Standing Subcommittee and Advisory Council comments back to problem statement submitters after Advisory Council meeting.
☐ Record subcommittee minutes.
☐ Review problem statements.
☐ Perform TRID Search.
☐ Perform RIP Search.
☐ Perform SPTC Search.
☐ Perform NCHRP Search.
☐ Perform necessary administrative and technical activities on behalf of the Department.

LTAP/T^2 Advisory Committee

This advisory committee steers and assists in the direction of the LTAP/T^2 program.
☐ Assist the LTAP/T^2 Program Manager in the development of the LTAP/T^2 program, this may be done through email and in-person meetings .
☐ Review all materials provided by the LTAP/T^2 Program Manager.
☐ Provide expertise and other assistance as needed.
☐ Attend committee meeting as often as the LTAP/T^2 Program Manager may direct to assure that all members are aware of progress, problems, work schedule, etc.

LTAP /T^2 Program Manager

☐ Prepare the yearly work plan and budget for the program.
☐ Work directly with the instructors and local agencies concerning class planning, scheduling, and other technology transfer details.
☐ Review submitted evaluation forms from students and teachers and make necessary adjustments.
☐ Review proposed training courses and consult with instructors when necessary.
☐ Provide summary reports to the LTAP/T^2 Advisory Committee.
☐ Promote LTAP/T^2 Program Statewide.
☐ Promote Every Day Counts (EDC) initiatives per ARDOT's involvement.
☐ Promote the ROADS Scholar Program through emails, and work groups, as well as during statewide meetings, and training.
☐ Submit ROADS Scholar data to the University of Arkansas at Fayetteville's Center for Training Transportation Professionals (CTTP).
☐ Submit list of upcoming training to the University of Arkansas at Fayetteville's Center for Training Transportation Professionals (CTTP) for the LTAP/T^2 calendar.
☐ Develop Management/Supervisory training for our local partners.

Appendix 4: Constitution, By-Laws, and Standing Rules

CONSTITUTION, BY-LAWS,

AND

STANDING RULES

OF THE

ARKANSAS TRANSPORTATION RESEARCH COMMITTEE

ARKANSAS STATE HIGHWAY AND TRANSPORTATION DEPARTMENT

December 2014

CONTENTS

CONSTITUTION

Article I NAME. The name of this committee shall be TRANSPORTATION RESEARCH COMMITTEE, hereinafter referred to as the TRC; a cooperative organization representing the Arkansas State Highway and Transportation Department (AHTD), Federal Highway Administration (FHWA), and other institutions or agencies having common interest in the promotion of transportation research.

Article II OBJECTIVES. The TRC has been created under the authority of Highways and Transportation Department Administrative Order Number 62-5 of March 7, 1962, as amended by Administrative Order 77-3 of June 13, 1977, with the following objectives:

A. To promote and encourage transportation research as a necessary function of the AHTD, as an essential element in the State's program of higher education, and as a vital measure in the improvement of transportation in Arkansas.

B. To coordinate research into the problems of mass transit and reasonable solutions to these problems.

C. To translate State Highway Commission Policy into specific transportation research projects.

D. To coordinate transportation research activities, develop comprehensive research programs, screen research project proposals, and review the results of the research projects.

E. To recommend action in regard to application of the findings of transportation research activities.

F. To promote the utilization of new technology wherever possible.

G. To disseminate pertinent information from transportation research.

H. To develop personnel and facilities adequate for a full and continuing program of transportation research.

Article III MEMBERSHIP. The TRC shall be composed of the following representatives of AHTD:

Deputy Director and Chief Operating Officer
Deputy Director and Chief Engineer
Assistant Chief Engineer – Planning
Assistant Chief Engineer – Design
Assistant Chief Engineer – Operations
State Construction Engineer
State Maintenance Engineer
System Information and Research Engineer
Roadway Design Engineer
Bridge Engineer
Materials Engineer

Transportation Planning and Policy Engineer
Division Head, Surveys Division
Division Head, Environmental Division
Division Head, Computer Services
Two AHTD District Engineers (appointed by the Director)
FHWA Division Administrator (non-voting)
Chairperson of the Advisory Council for Transportation Research (non-voting)
Staff Research Engineer - TRC Secretary (non-voting)

One District Engineer will be appointed by the Director each odd numbered year. District Engineers will serve on a rotating base for a four year term. The Director at his discretion may designate other members. An alternate shall be named for each member to serve in their stead at any meeting or in any other capacity relative to TRC activity.

The TRC shall be authorized to expand the organization on a non-voting membership basis, by appointment of associate members from the cooperating agencies by the Chairperson, with the consent of the affected agency. Associate membership shall be limited to specific research activities as specified by such appointment.

Article IV OFFICERS & ELECTIONS. The Officers of the TRC shall be a Chairperson and a Vice-Chairperson elected from the membership. The Vice-Chairperson will serve for a two-year term and upon completion of the initial term will automatically become Chairperson for the next two-year term. A new Vice-Chairperson will be elected on alternating

years. The TRC Secretary shall be the Staff Research Engineer of the System Information and Research Division who will be a non-voting TRC member.

A. Election shall be by nomination and shall require only a simple majority or quorum of those voting to elect.

B. Election shall be held at the regular fall meeting in odd-numbered years, and the new Vice-Chairperson shall take office immediately upon election.

C. Should the office of Chairperson become vacant, the Vice- Chairperson shall immediately be Chairperson. Any other vacant office shall be filled by appointment by the Chairperson for the remainder of the two-year term at the next regular meeting of the TRC.

Article V MEETINGS & QUORUM. The TRC shall be limited to a necessary minimum of regular meetings, but the number of called meetings shall be contingent upon the proper pursuit of TRC objectives.

A. The TRC shall hold at least two regular meetings per year, and other meetings as deemed advisable by the Executive Board (pg. 11) or TRC Chairperson.

B. The time and place of any meeting will be determined by the Chairperson, who shall instruct the Secretary to

notify members at least 30 days prior to the date selected.

C. The Chairperson may call special meetings for the purpose of acting upon specific TRC business which cannot be appropriately conducted at a regular meeting.

D. A majority of the members or their alternates shall constitute a quorum for all meetings.

Article VI AMENDMENT. The TRC Constitution may be amended according to the following procedure:

A. Written copies of proposed amendments shall be submitted to the Secretary, who shall submit one copy to each member at least 15 days prior to the meeting at which the proposed amendment is presented for adoption.

B. The adoption of the proposed amendment shall be determined by a two-thirds vote of those holding full membership.

C. A duly executed Administrative Order by the Director of Highways and Transportation may affect immediate amendment to the Constitution.

BYLAWS

Article I MEMBERSHIP. The Committee shall include AHTD personnel representing the various Divisions and Districts; the Chairperson of the Advisory Council for Transportation Research (see Addendum); the FHWA; and others as necessary to the conduct of an efficient and effective research program.

A. Members. The Director of Highways and Transportation shall appoint members as set forth in Article III, paragraph one, of the Constitution, and a memorandum of each appointment will be accepted by the Secretary as accreditation to the TRC. Members shall have full authority to participate in TRC business, serve as officers, serve on subcommittees, and vote on all questions which may come before the TRC. Membership may be terminated by the withdrawal of accreditation, or by retirement or resignation from the organization represented.

B. Alternate Members. The AHTD staff assistant to each TRC member shall serve as an alternate to that member. If for any reason a member cannot perform their duties, the alternate shall function as his deputy. As regards the tenure of office, duties, and privileges of their position, all rules pertaining to members shall apply to alternate members except that alternate members shall not hold a TRC office.

C. Associate Members. The Chairperson of the TRC may appoint associate members to the TRC. The appointment shall specify the project or activity for which the appointment is made and completion of the specific project or activity shall terminate the associate membership. A resolution of membership for an associate member may be initiated by any member of the TRC under Special Order of Business. Associates shall be selected by reason of the special knowledge, training, experience, or skill they are able to bring, in an advisory capacity, to project problems or activities in the purview of the TRC's interest and objectives. Associates may be members of the Advisory Council for Transportation Research (see Addendum) and may participate in the discussion of any business before the TRC, but shall never initiate or introduce business or vote upon any question. The Director of Highways and Transportation may also designate any highway employee as an associate by issuance of a memorandum to that effect.

Article II VOTING. Each member or alternate member in attendance shall have one vote to be cast as they see appropriate. Written proxy voting shall be permitted upon presentation of the proxy to the Secretary in advance of the voting.

The Chairperson shall be entitled to vote when the vote is by ballot and in all other cases where the vote would change the results. When there is a tie vote, the motion fails unless the Chairperson gives his vote for the affirmative.

Where the Chairperson gives his vote in the negative, he can defeat the measure.

Article III DUTIES OF THE OFFICERS.

A. It shall be the duty of the TRC Chairperson to preside at all regular or special TRC meetings.

B. The Chairperson may appoint a Chairperson pro tem to preside over the conduct of a specific item of business.

C. It shall be the duty of the Vice-Chairperson to preside in the absence of the Chairperson unless a Chairperson pro tem has been named.

D. Should the office of Chairperson become vacant; the Vice-Chairperson shall become Chairperson for the remainder of the two-year term.

E. It shall be the duty of the Secretary to keep minutes of each meeting and to perform administrative duties as TRC activities may require before, during, and after TRC meetings.

F. The duties of associates shall be confined to those necessary for the proper prosecution of the functions assigned to them.

Article IV MEETINGS - ORDER OF BUSINESS. Regular meetings shall be held as provided in Article V of the Constitution. The order of business shall include:

Minutes of preceding meetings
Announcements and reports by the Secretary
Reports by Subcommittees
Special order of business
Regular order of business

The order of business may be altered at any regular meeting by a two-thirds vote upon a motion immediately after the reading and approval of the Minutes. Special meetings shall be held as provided in Article V of the constitution. No business other than that stipulated in the advance notice shall be considered.

Article V SUBCOMMITTEES. The Chairperson shall have the authority to appoint subcommittees within the following limits:

A. The objectives of the subcommittee shall conform to Article II of the Constitution.

B. Project subcommittees shall function to coordinate the TRC's interest in research projects. A project secretary may be appointed to perform administrative duties for the subcommittee if the subcommittee so desires. The subcommittee secretary will usually be the project coordinator appointed by the Staff Research Engineer.

C. The Chairperson of a project subcommittee shall be selected from the members or alternate members of the TRC.

D. The TRC officers shall be ex-officio, non-voting members of all subcommittees and the TRC Chairperson shall be notified of all subcommittee meetings.

Article VI EXECUTIVE BOARD. An Executive Board shall be composed of the Chairperson of the TRC, as Chairperson; the System Information and Staff Research Engineer; the TRC Secretary, as secretary; and two members appointed by the Director of Highways and Transportation. The Executive Board may meet immediately prior to a regular TRC meeting or when called by the Chairperson or two or more members. The Executive Board shall have authority to act on matters which, in the judgment of the Board, shall be acted upon before the next regular meeting of the TRC but may not act to delete items entered on the Agenda as Special Order of Business. The Executive Board shall make a full and accurate report of its discussion and action at the subsequent regular meeting.

Article VII PARLIAMENTARY AUTHORITY. All business meetings of the TRC and its subcommittees shall be governed by the rules contained in Robert's Rules of Order, revised, in all cases in which these rules are applicable and consistent with the Constitution and Bylaws of the TRC.

A. Standing Rules may be adopted to guide the TRC in the conduct of meetings and TRC business. The Standing Rules may be suspended during a convened session by a majority vote of members present and voting. The Standing Rules may be amended by a two-thirds vote of members present and voting.

B. A Procedural Manual for Transportation Research Projects shall be prepared to guide researchers, project directors, and subcommittees in the administrative functions necessary for all research projects.

Article VIII AMENDMENT. The TRC Bylaws may be amended as provided in Article VI of the constitution except that two-thirds of those holding full membership shall vote affirmative.

STANDING RULES FOR CONDUCT OF BUSINESS

Note: Provisions have been made in the Bylaws for adoption of Standing Rules as the TRC deems necessary, but none are proposed at this time. If there are rules which should be proposed, these should be submitted to the Secretary with a copy to the TRC Chairperson.

ADDENDUM TO THE BYLAWS
ADVISORY COUNCIL FOR TRANSPORTATION RESEARCH

PURPOSE: The purpose of the Advisory Council for Transportation Research shall be to assist the TRC by reviewing, consolidating, and recommending action to be taken by the TRC in regard to research problem statements. Advisory Council members will be asked to lend their technical expertise to the Transportation Research Program by serving on project subcommittees, providing periodic review of all research activities, and assisting the TRC and project subcommittee in the preparation of implementation packages as required.

MEMBERSHIP: By invitation of the Director, active or retired, representatives of educational institutions, private industry, and other transportation related agencies and associations, may be asked to serve on a voluntary basis as members of the Advisory Council. Proposed changes of representative, with the reason for such a change, shall be submitted to the TRC Secretary in writing. The Director may expand or restrict representation on the Advisory Council at any time that he feels such revisions would best serve the purposes of the Research Program.

In the event that a member of the Advisory Council is unable to attend a Council meeting, he may send an alternate from his agency, but should notify the TRC Secretary of such arrangement in advance of this meeting.

DUTIES OF OFFICERS: The Council shall elect from its members a Chairperson and a Vice-Chairperson. The Department's Staff Research Engineer shall be the Council Secretary. Each of the elected officers shall serve a two-year term. The Chairperson shall be an ex-officio, non-voting member of the TRC. The Chairperson will attend meetings of the TRC and inform the TRC of the Council's recommendations and established priorities. The TRC shall consider the Council's recommendations when establishing final project priorities.

OPERATING PROCEDURES: The Advisory Council will be involved in all research projects from the initial submission of a research idea until approval of the final report. Major Council functions are outlined as follows:

1. Review all Research Needs Statements for relevancy and need at annual Advisory Council meeting,
2. Set priorities on research needs; the Chairperson shall report the priorities to the Transportation Research Committee for consideration, and
3. Review implementation package if applicable.

VOTING: All members of the Council, except the Secretary, shall have voting privileges. Priorities for research projects shall be established by simple majority vote of the members present. The Chairperson and Vice-Chairperson shall be elected in a like manner.