**Research Project Work Plan**

**for**

[project title]

[Project Number]

Submitted by

[Investigator Name(s)]

[Title(s)]

[Institution or Firm]

[Address]

for

Oregon Department of Transportation

Research Unit

555 13th St. NE, Ste 2

Salem, OR 97301-6867

**[Month Year]**

Revised: [Month Year]

**Research Project Work Plan**

**for**

[project title]

1. Identification
	1. Organizations Sponsoring Research

Oregon Department of Transportation (ODOT)

Research Section

555 13th Street NE

Salem, OR 97301 Phone: (503) 986-2700

Federal Highway Administration (FHWA)

Washington, D.C. 20590

\*List Grant Funding Organization

* 1. Corresponding Principal Investigator (ODOT requests only one per institution or firm)

[Name, Title]

[Department]

[Institution or Firm]

[Address]

[City, State ZIP] Phone: [number]

* 1. Co-Principal Investigator(s)

[Name, Title]

[Department]ODOT Research Coordinator

[Institution or Firm]

* 1. Technical Advisory Committee (TAC) Members

[Names, Affiliations] [*indicate which member is Chair, research proposer*]

* 1. Research Coordinator

[Name, Affiliation] [*ODOT Research staff person*] Phone: [number]

* 1. Project Champion

[Name, Affiliation] [*ODOT person with sufficient authority to help overcome impediments and influence implementation*]

1. Problem Statement

This is a description of the specific problem that is the basis for the research. The problem statement should include identification of what the problem is, who is affected, and how they are affected.

* 1. Background and Significance of Work

The background on the nature of the problem is described here, including other efforts to address the problem, the gaps in knowledge that remain, and the significance of this work in the larger field of knowledge. Describe the findings of literature searches or information currently known. Then indicate why the proposed work is significant as compared to other related research efforts.

1. Objectives of the Study

The specific objectives of the project, which will address the problem, are stated here. Make sure the objectives are clearly stated, measurable, reasonable and feasible. In the Research tasks below (Section 5.0), indicate what will be measured and in what way the measurement will be accomplished.

* 1. Benefits

With the accomplishment of the objectives, what will the specific benefits of this project be to ODOT and transportation in general?

1. Implementation

A more specific statement is made here on how the findings of the research will be disseminated, who will use them, and how they will be used. Implementation includes activities designed to make the research results more accessible such as presentations, a paper or other summary document, video, Research Note, Inside ODOT article, internet presentation, etc. The project work plan should include an implementation plan with sufficient detail to indicate the following:

* How the findings of the research will be disseminated (e.g. written reports, journal articles, conference sessions, presentations, news releases, etc. for various audiences); and
* Any specific follow-on efforts to be undertaken to enhance the usability of the research findings (e.g., manuals, guides, workshops, video, etc.).
* Where in the existing transportation governance structure will the responsibility be located for applying the research finding in the field or in the practice of transportation professionals.
1. Research Tasks

Each of the specific tasks to be performed in the research project are described here. The descriptions should be concise but provide a level of detail to show the current thinking of the research team.

Examples of information that should be described in the Tasks include the following: experiment design, types and number of specimens, tests and measurements, sampling methodology, data analysis methods, modeling approach, and significant or unique hardware and software development If the project is designed to be completed in phases, the organization of this section should reflect this, with the specific tasks listed under a heading for each phase.

Each major task should have a deliverable product, which will serve as evidence of completion of the task. In some cases, a progress report may be an acceptable interim deliverable. In other cases, a specific work product, research report or journal article may be the deliverable. It is desirable to specify an interim deliverable no less frequently than about once per quarter (three-month period). Each task is numbered and includes the following sub-headings:

*Task # :* [Name of Task]

Description of what will be done.

*Time Frame:* [The period of time in which the task will be completed]

*Responsible Party:* [Name(s) of the parties and facilities they will use]

*Cost:* [Estimated cost associated with the accomplishment of the task]

*Deliverable:* [The product of the completion of the task, e.g., report, data, other work product][Deliverables will be transmitted to the ODOT Research Coordinator]

*TAC Action:* [What action, if any, the Technical Advisory Committee will take, concerning the deliverable] [The ODOT Research Coordinator forwards acceptable deliverables to the TAC]

*ODOT Action or Decision:* [What decisions, if any, the ODOT Research Coordinator will make concerning the deliverable or overall project]

* 1. Expected tasks:

***Task 1: TAC Meeting #1***

Project kick off meeting.

*Time Frame:* [1-3 Months after NTP]

*Responsible Party:* PI, ODOT Research Coordinator, TAC

*Cost:* [Estimated cost associated with the accomplishment of the task. Do not include cost of ODOT personnel time.]

*Deliverable:* TAC meeting attendance, TAC meeting presentation, TAC Meeting Minutes

*TAC Action:* Review and understand project research problem statement, research question, the limits of the research, and the project schedule. Advise ODOT Research Coordinator regarding any critical issues with the project’s scope or schedule. Advise PI’s regarding related professional practices, standards, methods and context for the project.

*ODOT Action or Decision:* Review TAC advice, discuss with PI, and if necessary direct PI to make changes to project documents.

***Task 2: Draft Literature Review***

The literature review will focus on a number of issues relevant to the research problem statement and research question. A variety of topics will be researched such as:

* Defining the problem and research question, including excluded related issues
* Theoretic context
* Existing ODOT documents directly related to the research and that may influence the agency’s implementation of findings (e.g. specifications, standards, policies, or procedures)
* Research methods that may be used to answer the research question (include brief discussion of commonly applied methods that may not be appropriate for use on this project)
* Data resources, including availability and quality
* [ other items ]

*Time Frame:* [3-6 Months after NTP]

*Responsible Party:* PI

*Cost:* [Estimated cost associated with the accomplishment of the task]

*Deliverable:* Draft Literature Review

*TAC Action:* Read Draft Literature Review and advise ODOT Research Coordinator regarding any gaps in the literature.

*ODOT Action or Decision:* Review TAC advice, discuss with PI, and if necessary direct PI to make changes to project documents.

***Task 3: Draft Research Methodology.***

This task includes identification and description of required data, variables, and specification of analysis technique. The Draft Research Methodology will document the proposed data collection including data availability, data quality, optional data, excluded data, costs and risks to the project related to failure of the data collection. The Draft Research Methodology will discuss sampling methods and identify the expected sample size. The Draft Research Methodology will determine what kinds of statistical techniques will be used to analyze the collected data. The Draft Research Methodology will document approval for any work with human subjects, and protections of personnel private information related to any human subjects.

*Time Frame:* [6-9 Months after NTP]

*Responsible Party:* PI

*Cost:* [Estimated cost associated with the accomplishment of the task]

*Deliverable:* Draft Research Methodology Report Section, Draft Data Management Plan, Documentation of Institutional Review Board approvals for any work with human subjects.

*TAC Action:* Read Draft Research Methodology in preparation for TAC Meeting # 2.

*ODOT Action or Decision:* Schedule TAC Meeting #2

***Task 4: TAC Meeting #2***

This TAC meeting is intended to set the course for the completion of the project. On high risk and exploratory projects this is the point where ODOT will consider authorizing future work.

*Time Frame:* [6-9 Months after NTP]

*Responsible Party:* PI, ODOT Research Coordinator, TAC

*Cost:* [Estimated cost associated with the accomplishment of the task]

*Deliverable:* TAC meeting attendance, TAC meeting presentation, TAC Meeting Minutes, meeting agenda

*TAC Action:* TAC review of Draft Research Methodology and Draft Literature Review. Advise ODOT Research Coordinator regarding any critical issues with the project’s research design. If possible reach consensus regarding the content and methods contained in the draft research design. Advise ODOT Research Coordinator regarding project next steps.

*ODOT Action or Decision:* Review TAC advice. Assess project potential for successful completion. If necessary direct PI to make changes to project documents. Provide formal acceptance of Draft Research Methodology. Authorize PI to proceed with subsequent steps, notify by memo or email.

***Task 5: Data Collection.***

Collect data for analysis as identified in the Draft Research Methodology. Records will be kept of data collection tools or methods and tool/method calibration. The design of any specialized data collection tools or algorithms will be documented and delivered to the Agency Data will be recorded in a standardized and secure form. Data will be collected, stored and delivered to ODOT in compliance with Institutional Review Board approvals and Federal requirements. The PI will be responsible for documentation of any departures from the Draft Research Methodology.

*Time Frame:* [6-24 Months after NTP]

*Responsible Party:* PI

*Cost:* [Estimated cost associated with the accomplishment of the task]

*Deliverable:* A Memo documenting data collection, and any specialized data collection tools or algorithms. Provide documentation that the raw data is securely stored and protected from data corruption. (Federal projects may require delivery of raw data to the Agency)

*TAC Action:* None

*ODOT Action or Decision:* Review

***Task 6: Data Analysis***

Analyze data collected in Task 5, primarily using methods anticipated in Task 3. Revise as Draft Research Methodology to document deviations, and update the Draft Literature Review to support any methods of analysis not previously included in the literature review.

*Time Frame:* [1-3 Months after Data Collection]

*Responsible Party:* PI

*Cost:* [Estimated cost associated with the accomplishment of the task]

*Deliverable:* Draft Analysis Report Section

*TAC Action:* Review and comment

*ODOT Action or Decision:* Review

***Task 7: Draft Final Report***

Publication ready Draft Final Report in the prescribed ODOT report format. (Formatting includes correct fonts, spacing, citations and graphics) Contents include: an updated abstract, acknowledgement, disclaimer, introduction, Updated Lit Review (Task 2), Final Research Methodology (Task 3), Draft Analysis Report Section (Task 6), discussion of results, conclusions, and potential for future research, application, or technology transfer, final data management plan as an appendix, and other sections as appropriate.

*Time Frame:* [3-6 Months after Data Collection]

*Responsible Party:* PI

*Cost:* [Estimated cost associated with the accomplishment of the task]

*Deliverable:* Draft Final Report using ODOT’s report template

*TAC Action:* TAC review and feedback to the ODOT Research Coordinator

*ODOT Action or Decision:* Review and counsel prior to TAC meeting

***Task 8: TAC Meeting #3.***

This TAC meeting will include a review of the Draft Final Report, and Draft Research Note prior to the TAC meeting. The TAC will offer advice on the content and clarity of these work products. The TAC will also advise on post research implementation.

*Responsible Party:* PI, assisted by the ODOT Research Coordinator, TAC

*Cost:* [Estimated cost associated with the accomplishment of the task]

*Deliverable:* TAC meeting attendance, TAC meeting presentation, TAC Meeting Minutes

*TAC Action:* TAC review of Draft Final Report. Advise ODOT Research Coordinator regarding any critical issues with the project’s research design. Advise ODOT Research Coordinator regarding any required final edits to the Draft Final Report.

*ODOT Action or Decision:* Review TAC advice. If necessary direct PI to make changes to project documents.

***Task 9: Final Report***

Edit Draft Final Report to incorporate edits identified by the ODOT research Coordinator after the last TAC meeting

*Time Frame:* [1-3 Months after Data Collection]

*Responsible Party:* PI

*Cost:* [Estimated cost associated with the accomplishment of the task]

*Deliverable:* Final Report

*TAC Action:* None

*ODOT Action or Decision:* Review. Provide formal acceptance of Final Report. Publish Final Report on ODOT’s research website

***Optional Tasks:***

***Task #  : Conference or External Meetings Travel***

Travel and attendance at meetings and conferences when the primary purpose of the meeting or conference is the dissemination of project specific technical information  *or* Travel and attendance at meetings and conferences where technical information that would benefit performance of the study is being presented

*Time Frame:* [The period of time in which the task will be completed][After ODOT approves dissemination of project specific technical information]

*Responsible Party:* [Name(s) of the parties and facilities they will use]

*Cost:* [Estimated cost associated with the accomplishment of the task]

*Deliverable:* Meeting or conference presentation materials produced by the PI or project (e.g. PowerPoint) and conference agenda with the project specific technical presentation documented) Or a written summary of  technical information that benefits performance of the study for inclusion in the revised literature review section of the Final Report.

*TAC Action:* None

*ODOT Action or Decision:* Review and accept Deliverables

***Other*** ***Optional Tasks:***

* Interim Reports, Task Reports, or Other Publications.
* Any other project tasks
* Purchase of capital equipment (Typically after acceptance of **Draft Research Methodology)**
* Community/stakeholder outreach
* Additional TAC meetings
* Appendix: Draft Agency Documentation (e.g. Policy, Procedures, Specifications, or other implementation documents)
* Post-research training, classes or seminars conducted for ODOT staff
* Video presentations
	1. Reporting

All reports shall be produced in the standard ODOT Research Section report format provided to the Project Investigator by the Research Coordinator unless some other format is deemed to be more appropriate. The Project Investigator shall be responsible for submitting deliverables as professional-level written composition equivalent to the writing standards of peer-reviewed journals. These writing considerations include grammar, spelling, syntax, organization, and conciseness.

The Project Investigator, in consultation with the TAC and Research Coordinator, shall deliver to ODOT in electronic format the data produced during the project. The Project Investigator shall ensure the data is labeled and organized to facilitate future access. ODOT shall warehouse the data.

* 1. Safety and Related Training

Prior to accessing ODOT right-of-way (ROW), all personnel who will work on ODOT ROW shall complete safety training appropriate to the work to be performed within the ROW. The Project Investigator shall notify Project Coordinator in writing (email accepted) prior to the first day of work within the ROW that all project personnel who will access ODOT ROW have been trained. Until all ROW work is completed, the Project Investigator shall notify Project Coordinator in writing (email accepted) annually that an active safety training appropriate to the work to be performed within the ROW has been completed by all personnel who will work on ODOT ROW.

1. Time Schedule

This section specifies the time line for the project, listing the task headings and showing monthly and/or quarterly time blocks in which each task will be accomplished. Also shown are interim and final deliverables. (A sample matrix is shown below.)

|  |  |  |  |
| --- | --- | --- | --- |
| **Task** | **20--** | **20--** | **20--** |
| **FY--** | **FY--** |
| Jul - Sep | Oct - Dec | Jan - Mar | Apr - Jun | Jul - Sep | Oct - Dec | Jan - Mar | Apr - Jun |
| 1: |  |  |  | \* |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 2: |  |  |  |  |  |  |  |  |  | \* |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 3: |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | \* |  |  |  |  |  |
| 4: Report |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | R |  |  | F |

\*Deliverables

R - Draft report submitted for ODOT review.

F - Revised report submitted to ODOT for publication. End of contract.

Generally we schedule 3 months between draft report submittal and report submittal for publication.

1. Budget Estimate

An itemized budget for the project is included here showing expenditures for each task by fiscal year and in total.

|  |  |  |  |
| --- | --- | --- | --- |
| **Task** | **FY--** | **FY--** | **Total** |
| 1: |  |  |  |
| 2: |  |  |  |
| 3: |  |  |  |
| 4: |  |  |  |
| **Total for tasks (Contract amount)** |  |  |  |
|  |  |  |  |
| Support/management (ODOT completes) |  |  |  |
| **Total for ODOT** (ODOT completes) |  |  |  |