

Section 3 Research Project Development

3.1 Introduction

DRISI provides research solutions to California's transportation problems through its research projects. The research solutions are composed of deployable products that can be implemented by Caltrans or other public agencies. Each research problem, project, and solution is sponsored and supported by a Caltrans division and/or district.

3.2 Project and Task Definition

3.2.1 Project Definition

A research project typically consists of a sequence of tasks that result in a deployable product, as defined in Section 1.1.3.

3.2.2 Task Definition

Tasks are the building blocks for a research project. Some projects may only need one task, others may require multiple tasks.

Multiple tasks break up the research into logical partitions to create the deployable product, and offer an opportunity for the PSC to reassess the progress of the project at regular intervals.

3.3 Project Selection Process

The research selection process is composed of annual and contingency components.

3.3.1 Annual Research Cycle

Research funding requests are reviewed, prioritized, and approved both individually and by functional programs during the annual research selection cycle.

The annual research cycle provides an opportunity to reassess the strategic alignment of ongoing and planned research. DRISI's Annual Funding Request Process can be found in appendix D or at: [DRISI Annual Funding Request Process](#).

3.3.2 Contingency Approval Process

The contingency process provides an opportunity to consider research requests that are outside of the annual research selection cycle.

DRISI's Contingency Funding Request Process can be found in appendix E or at: [DRISI Contingency Funding Request Process](#)

3.4 Project Preparation

3.4.1 Preliminary Investigations

Prior to initiating a research project, a Research Preliminary Investigation (PI) is performed. A PI is a literature review and identification of best practices in a specific field and function of the transportation system. The PI provides a comprehensive overview of historical and ongoing national and international work on a potential research problem.

Findings of a PI will indicate whether or not: a solution is available, relevant research is in progress that can be built upon, or new research is required. When new or additional research is needed, a research project is created.

The PI Request Form, PI Process Diagram, and completed PIs can be found at: [DRISI Preliminary Investigations](#).

3.4.2 Project Manager and Panel Roles

All research projects have a Project Panel. The role of the Project Panel is to guide the research project. The membership of the Project Panel is flexible and varies by the size and complexity of the project. At a minimum, the Project Panel consists of the research Project Manager (PM) and the customer representative.

If a project involves several functional areas or requires special expertise, the Project Panel should also include other experts to guide the project during the research activities. The Project Panel may have representation from academia, industry, non-government organizations, and local, state, and federal government. The research PM is the chair of the Project Panel and appoints all panel members, in consultation with the customer representative.

Activities

Project Panel activities may include:

- Developing the Project Plan
- Developing the scope of work for each task
- Working with researchers to monitor progress and facilitate the resolution of problems or delays
- Making recommendations to the PM regarding the selection of the contractor, project scope, budget, time modifications, and continuation of studies
- Reviewing the draft and final reports
- Recommending an implementation plan for research products (see section 6.3.2)

- How much will the project cost
- How much time will the project require
- Who are the project champion(s) and/or sponsor(s)
- When will the deployable product be ready to use

DRISI's Project Plan example is at: [DRISI Research Project Plan Example](#).

3.4.3 Project Plan

Definition

A Project Plan is a dynamic tool that guides the PM and the stakeholders of the project in execution of the project. This plan explains why the research is being conducted, the anticipated outcome of the project, the perceived benefits of the project, and identifies what deployable product is anticipated, as defined in Section 1.1.3.

The Project Plan also conveys the current planning decisions made related to cost, schedule and scope, together with the constraints facing the project and what additional resources the project will require.

For large and complex projects, the plan may evolve over time based on completed project work, technology shifts, or social trends.

Purpose

The purpose of a Project Plan is to answer fundamental questions about the scope, cost, and schedule of the project, including, but not limited to the following:

- Why is the project necessary
- What are the deployable products upon completion of this project
- What are the tasks necessary to complete the project
- What are the benefits upon completion of the project