

Caltrans Preliminary Investigation  
Draft Template  
CTC & Associates LLC  
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## **Overview**

The Caltrans Division of Research and Innovation receives and evaluates numerous research problem statements for funding every year. DRI wishes to conduct Preliminary Investigations on these problem statements in order to better understand the need for the research in light of efforts already made on the topic nationally and internationally.

## **Types of Preliminary Investigations**

DRI has identified three types of Preliminary Investigations to carry out, depending on the type of research proposed and the expected outcomes of that research.

### Granular

The research will develop and/or evaluate specific techniques, practices, or materials used in support of transportation. DRI needs a Preliminary Investigation that is detailed and robust in its assessment of research already completed and implemented on the proposed topic.

Example: Evaluation of pavement sensors

### Procedural

The research will address processes or procedures used in transportation planning, design, construction or maintenance. DRI needs a moderately robust Preliminary Investigation that captures related research, best practices and opportunities for Caltrans based on a national scan.

Example: Evaluation of lane construction approaches

### Strategic

The research will support senior Caltrans managers as they make strategic decisions for the department. DRI needs a high-level Preliminary Investigation that documents best practices and trends on the topic.

Example: Weighing the pros and cons of integrated corridor management

## **Goals of Preliminary Investigations**

DRI plans to use Preliminary Investigations as an important tool for evaluating problem statements and supporting the development of projects that receive funding. A successful Preliminary Investigation will:

- Provide information that will help a Project Panel (composed at a minimum of a DRI Project Manager and a Customer Representative) develop a research project plan that can be submitted to Caltrans' Program Steering Committee (PSC) and Research and Deployment Steering Committee (RDSC) for multi-year approval and funding.
- Assist a PSC in deciding what should be done to address the needs of the problem statement. The PSC may recommend pursuing best practices, carrying out a specific untapped segment of research, mining existing research results for implementation, collaboration with others (phase or project level) or foregoing the topic entirely because no new research is needed.
- Assist in identifying desired products or services that could be deployed upon successful completion of the research project.

## **Format**

CTC & Associates will prepare the Preliminary Investigation using Microsoft Word. We will use clear, technically accurate language with an emphasis on concise, bottom-line presentation.

## **Length**

The Preliminary Investigations will vary in length from two or three pages to seven or eight pages. The granular Preliminary Investigations will likely be longer and may include appendices so as to provide specific detail uncovered on the topic and meaningful alternative paths forward. The strategic Preliminary Investigations will be shorter, focusing on high-level approaches and best practices for consideration by Caltrans. In all cases, there will be a summary on page one of the key findings and possible next steps.

## **Content**

Each Preliminary Investigation will contain the following key information:

- Title of the Preliminary Investigation, requestor's name and office (Caltrans customer)
- Brief standard description of the purpose of a Preliminary Investigation
- Background  
Paragraph or two providing background on the research topic and how it is relevant to Caltrans. Then a specific description of the goals of the proposed research and the need for the Preliminary Investigation.
- Summary of findings  
One or two paragraphs highlighting the key findings.
- Next steps  
Brief, bottom-line description of the alternative paths forward on the proposed project based on the available information. Alternatives might include:
  - Implementation of existing research results or practices and contact information for relevant individuals and organizations.
  - Further refinement of a topic that is too large to address sufficiently in a single research project.
  - Acknowledgement that little is known on the topic, and the research project is needed.

In addition, each Preliminary Investigation will include the full scan results, a detailed listing of citations that support the Summary of findings and Next steps. CTC & Associates will customize each Preliminary Investigation to the topic at hand, organizing the available information in an effective, logical format so as to allow the reader to quickly review the document. The sections included will vary depending on the amount and type of information available on the topic and the most relevant sources found. Below are typical sections that would be included:

- Related Research  
Citations, links and brief descriptions/highlights of state, national and international research (completed and in progress) related to the topic. We'll also include contact information and interview results for key project champions reached during the process. The most relevant citations will appear first in the list.
- State practices  
Citations, links and brief descriptions/highlights of state practices, news articles, reports, etc. related to the topic. We'll also include contact information and interview results for key staff reached during the process. The most relevant citations will appear first in the list.
- Key Web sites  
Links and descriptions of Web sites that directly pertain to the topic and inform the direction of the proposed research.

- National guidance  
Web sites, specifications, reports, memos, etc. produced by FHWA, US DOT, TRB, AASHTO, etc. that provide guidance on the research topic. We'll also include contact information and interview results for key staff reached during the process.
- Gaps in findings  
Summary of any challenges encountered in searching for information on the topic.

# Caltrans Preliminary Investigation Search Process

## Overview

For each Preliminary Investigation, CTC & Associates will interview DRI staff, the Caltrans customer and other critical stakeholders to fully understand the scope and objectives of the proposed research. We will then conduct a search for relevant information using the resources below. We will cull for the most applicable, authoritative, timely and interesting information to include.

Specifically we'll focus on:

- Major research efforts that lead to national standards or summarize best practices.
- Recurring themes and critical subtopics.
- Different perspectives on the same issue by AASHTO, NCHRP/TRB and state DOTs.
- Recent developments, especially if they signal a change from conventional wisdom or practice.
- New technology or new application of existing technology that has a significant impact.

## Experts in the field

CTC & Associates will contact individuals such as those below in a targeted manner.

- TRB committee chairs and staff who are involved with relevant TRB committees, Cooperative studies and short-term studies for AASHTO committees.
- AASHTO committee members and staff.
- Contacts for specific programs at other state DOTs.
- FHWA and other US DOT contacts.
- Investigators who have authored related research.

## Online resources

- **State DOT search engine**  
Created by WSDOT Library staff, this Google Custom Search engine searches all state DOT sites. See the main Web page at <http://www.google.com/coop/cse?cx=006511338351663161139%3Acnk1qdck0dc>. This page also includes search engines for public transit agencies, UTCs, LTAP/TTAP centers and MPOs.
- **TRIS Online** (<http://ntlsearch.bts.gov/tris/index.do>)
- **TRB's Research in Progress** database (<http://rip.trb.org/>)
- **Google search engine** (<http://www.google.com>)
- **NCHRP Synthesis Reports** ([http://www.trb.org/news/blurb\\_browse.asp?id=5](http://www.trb.org/news/blurb_browse.asp?id=5)).
- **NCHRP research reports** (<http://www.trb.org/crp/nchrp/nchrpprojects.asp>)
- **Other TRB publications** (<http://pubsindex.trb.org/>), such as Records, Circulars, Special Reports, etc.
- **AASHTO** ([www.transportation.org](http://www.transportation.org)) for short term studies and task forces, policy directives, manuals, proceedings, innovations, etc.
- **WorldCat** (<http://worldcat.org/>)  
This free database indexes a global network of library catalogs.
- **Transportation Research Record** (<http://www.trb.org/TRRforAuthors/>)  
TRB publishes about 800 peer-reviewed papers annually in separate Transportation Research Record volumes grouped by subject area.

- **AASHTO Research Advisory Committee Listserv**  
The AASHTO RAC listserv reaches research managers at all 50 state DOTs, Puerto Rico and the District of Columbia, as well as Canadian agencies. Member DOTs often use this listserv to survey states about their practices in a specific area. Some Preliminary Investigations may merit sending a survey to the AASHTO RAC listserv.
- **WisDOT Research & Library pages** (<http://www.dot.wisconsin.gov/library/>)  
WisDOT's Research & Library Web pages have extensive lists of links to transportation resources around the country and the world.
- **News search engines and databases**  
<http://news.google.com/>, <http://news.yahoo.com/>, <http://news.altavista.com/>, etc.

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<http://alacarte.lexisnexis.com/>