



Equipment

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DOE Fleet Equipment
Procurement Analysis

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Evaluation of Equipment Production and Procurement Practices

A comparison of Caltrans' equipment production and procurement practices with other state DOTs

WHAT WAS THE NEED?

The California Department of Transportation (Caltrans') Division of Equipment (DOE) is responsible for producing and procuring equipment to meet the operational needs of Caltrans divisions, units, and districts. DOE is responsible for approximately 13,000 vehicles, which range from light vehicles such as passenger cars and utility vehicles to heavy-duty on-road vehicles, such as dump trucks to off-road equipment such as loaders. Some equipment is used daily while other equipment is used infrequently for highly specialized tasks (for example, emergency response).

Currently, the DOE utilizes a variety of methods to produce and procure equipment. The DOE purchases some pieces of equipment as turnkey products from manufacturers (e.g., passenger cars) while building some other pieces in-house (e.g., highly specialized equipment that are not available in the market). In some cases, the DOE purchases base equipment from a manufacturer then outfits additional tools or modifies the equipment to meet specific needs. The decision of which production or procurement method is to be used for a specific piece of equipment depends on a variety of factors, including technical, legal, fiscal, and political.

Other State Department of Transportations (DOTs) also acquire, maintain, and deploy similar types of equipment and each state DOT employs certain practices to the production and procurement of its equipment. Some of these practices may be similar to those employed by Caltrans while others may be different. It was important to understand and compare the equipment production and procurement practices currently used by other state DOTs, so Caltrans can improve its equipment production and procurement process.



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WHAT WAS OUR GOAL?

To investigate and understand equipment production and procurement practices of other state DOTs to improve the equipment production and procurement process at Caltrans.

WHAT DID WE DO?

Researchers administered a survey to collect information and gauge attitudes regarding renting, purchasing, and fabrication of vehicles and vehicular equipment.

Researchers contacted fleet and equipment managers, directors, engineers, and superintendents from fifty state DOTs well as nine provincial Canadian Departments and Ministries of Transportation to participate in the survey between November 2015 and July 2016.

Of those contacted, twenty-six respondents from state DOTs and two respondents from Canadian Departments of Transportation and Infrastructure agreed to participate.

Survey results and existing public data –Vehicle Miles Traveled, Functional System Lane-Length, and Fatality Rate per 100 Million Annual Vehicle Miles Traveled – were analyzed independently or combined with the survey results to provide additional context.

WHAT WAS THE OUTCOME?

The overall analysis of survey responses provided the following key findings:

- Self-building of specialty vehicles is a common practice among approximately half of the state DOTs with consistently reported financial and vehicle quality benefits
- State DOTs with developed or ongoing self-building expertise have more favorable and beneficial results when compared to states with limited self-building experience
- State DOTs with a higher proportion of specialty vehicles (snow removal, construction, heavy equipment) receive greater benefit from the self-building process
- State DOTs with proven self-building success would benefit from expanding the self-building process if provided with enhanced facilities and additional staffing.

WHAT IS THE BENEFIT?

Regardless of what still remains unknown, the information shared by all respondents has helped to provide a contextual foundation to the act of self-building that did not exist before.

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<https://dot.ca.gov/-/media/dot-media/programs/research-innovation-system-information/documents/final-reports/ca17-2738-finalreport-a11y.pdf>