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Project Title:
Improved Maintenance Methods
For Bridge Drains And Expansion
Joints

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Improved Maintenance Methods for Bridge Drains and Expansion Joints

This research will study select maintenance methods for bridge joints and deck drains to determine their suitability to Caltrans' maintenance operations.

WHAT IS THE NEED?

Bridge deck joints and drains have specialized maintenance needs. They are subject to higher debris loads due to bridge barriers containing debris on the structure instead of the debris being able to move naturally off the road.

Maintenance efforts are more constrained because shoulders are frequently narrower than the adjacent roadway, and there is no access to the area outside the shoulder to work from or retreat to in an emergency event. Clogged drains and packed joints can lead to bridge damage and costly repairs. These problems and challenges have led California Department of Transportation (Caltrans) to seek improved maintenance methods for bridge joints and deck drains.

WHAT ARE WE DOING?

Caltrans intends to review existing research and practices of other states, and consider existing commercial equipment and new concepts to identify better practices and equipment for adoption into Caltrans' operations.

WHAT IS OUR GOAL?

The goal of this research is to identify and implement improved maintenance methods on the State's bridges to reduce damage from debris and increase the efficiency of maintenance operations.



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WHAT IS THE BENEFIT?

Benefits include less damage to bridge structures, a reduction in associated repair costs, and lower maintenance costs through less maintenance efforts. An additional benefit will be increased safety for maintenance workers due to less exposure to highway traffic.

WHAT IS THE PROGRESS TO DATE?

Researchers continued literature and product search based on available information and focused on sweepers and hydrovac-type equipment, such as the Ditch Witch. Successful discussions this quarter with District 11 led to a site visit and demo in late March, where an AHMCT researcher observed the cleaning of 18 drain inlets on the bridge site. Several drain inlets were cleaned using the existing removal process while other inlets were cleaned with Ditch Witch rental equipment provided to the district. Through their experience, District 11 did not find as much benefits as expected with the Ditch Witch. Therefore, further research is being conducted on other alternatives such as equipment by Vermeer, which has several beneficial specifications over the Ditch Witch. For more information, contact the task manager.

IMAGE



Image 1: A bridge joint packed with incompressible debris.