

Pavement

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**Project Title:**

White Paper on the Application of Permeable Pavement with Emphasis on Successful Design, Water Quality Benefits, and Identification of Knowledge and Data Gaps

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## White Paper on the Application of Permeable Pavement with Emphasis on Successful Design, Water Quality Benefits, and Identification of Knowledge and Data Gaps

A summary of the current practices, design methods and potential applications of permeable pavement

### WHAT IS THE NEED?

During the past two decades tremendous progress had been made in the application of the permeable pavements (PP) especially with technical issues related to structural design, hydrologic design, water quality protection, and pavement surface clogging. However, some important technical questions remain unanswered and need to be addressed before permeable pavements are fully integrated into design practice and implemented in freeways with large traffic volumes and truck loads.

### WHAT WAS OUR GOAL?

The objective of this whitepaper was to review the application of permeable pavement in various jurisdictions with emphasis on successful design, water quality benefits, and identification of knowledge and data gaps to enhance sustainable transportation.

### WHAT DID WE DO?

This research embraced the Minnesota Department of Transportation (MnDOT) literature review efforts and used the content of the annotated literature to prepare a summary white Paper. The white paper summarized the latest academic research progress in the mixed permeable pavement design, hydrologic performance, maintenance, water quality benefits, knowledge gaps and unresolved issues, and the future direction in



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permeable pavement application. Additionally, the paper highlighted the current practice and design progress in the application of permeable pavement for highway projects.

## WHAT WAS THE OUTCOME?

The research summarized the best practice of the successful permeable Pavement application from the perspectives of mix design, water quality and knowledge gaps for highway application. A positive potential for using permeable pavement in highway projects is revealed based on overall structural and hydrologic performance, although majority of the current permeable pavement applications are with low volume traffic volume such as parking lots. The final deliverable of this project is a whitepaper.

## WHAT IS THE BENEFIT?

This whitepaper result may lead to new progress in this relatively new permeable pavement technology. The research may also help Caltrans bridge the technical gaps in permeable pavement highway design, long term performance and maintenance.

## LEARN MORE

Review the complete report.

<http://ncst.ucdavis.edu/wp-content/uploads/2014/08/09-30-2015-NCST-SR-Permeable-Pavement-FINALv5.pdf>