Permeable Pavement Standards Based on Lessons Learned

This project installed five new permeable mix designs, totaling 20,000 SF, and used new material testing procedures to further permeable pavement durability, enhance permeable pavement standards, and support an increase in confidence of permeable pavements.

Project outcomes

The permeable pavement project designed and constructed permeable pavements and bioretention treatment facilities with specialized sample collection systems for future water quality monitoring of the pavement. The project created a real world site to field test the new permeable pavement mix designs and analyze material testing procedures identified during the construction phase. Kevlar fibers, carbon composite fibers, and recycled asphalt shingles were incorporated into the mix designs for testing. The Tacoma School District’s iDEA parking lot and access road, near South Park Avenue and South 68th Street, was the site for the permeable pavement installation and study.

Success stories

This project was supported by an extensive partnership between City of Tacoma, Tacoma Public Schools, Washington State University, Boeing Corporation, Pierce Conservation District, Washington Green Schools, and Orcas Love Rain Gardens. (continued)

(continued) The project was located at a public high school where a special class was created to highlight the project and teach the students about stormwater and our impacts on Puget Sound.

FUTURE OPPORTUNITIES

This project resulted in opportunities for ongoing research on performance of the newly revised pavement mix designs at the project site. This work, to be-continued by the Puyallup extension of Washington State University under unrelated funding, will gather monitoring data from the project site over the next several years to evaluate the pavement performance.

In addition, the recommended testing protocols proposed this project could be used in projects around the Puget Sound region in future permeable pavement projects. Application of the construction testing proposed here can lead to more reliable permeable pavement installations better-meeting intended design specifications thus providing improved durability and long-term wear characteristics.

LINKS

City of Tacoma project webpage: https://tinyurl.com/TacomaGreenIdea
Tacoma Public Schools project https://www.tacomaschools.org/idea/Pages/Permeable-Pavement.aspx