Use of Pervious Pavement at Marine Terminals

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Port Mission
To enhance the region’s economy and quality of life by providing efficient cargo and air passenger access to national and global markets.

Port Vision
To be a prominent, innovative economic development engine while stewarding the region’s community and environmental best interests.
Port Fast Facts

• Three Airports including PDX, TTD, HIO
• Four Marine Terminals
• Seven Commercial & Industrial Parks
• Navigation Division operates Dredge Oregon
PNW gateway for Finished Vehicle Logistics

Auto Warehousing Company
- Ford
- Hyundai

Union Pacific Barnes Yard
- Chrysler
- GM
- Mercedes-Benz

Toyota Logistic Services
- Lexus
- Scion
- Toyota

Terminal 6
- Columbia River

Port of Vancouver

Auto Warehousing

Honda America Co.
- HONDA

BNSF Railway
- Ford
- Kia
- Nissan
- Hyundai
- Mercedes-Benz
2007 T6 Berth 601 Pervious Pavement Project
Initial Installation - Why Pervious Pavement?

- Ability to respond quickly to tenant request
- Decreased permitting time especially regarding stormwater outfall
- Decreased design time because stormwater infrastructure is not necessary
- No City Stormwater system connection fees
- Ideal subsurface conditions at T6
  - Six to eight feet of Columbia River dredge sand
- Ideal facility use requirements
  - Light weight loading from new passenger vehicles
Initial Installation

- Total Project Area 45 acres
  - 35.7 acres of pervious pavement
  - Remaining 9.3 acres was completed with an impervious heavier pavement for truck lanes and “truckaway” area
  - Impervious areas drain to vegetated swale or onto pervious paved areas for infiltration
Pavement Cross Section

- 3" Porous open graded asphalt pavement
- 1" “Choker course
- 10" Coarse aggregate – uniformly graded clean crushed aggregate with approximately 40% void space
- Nonwoven Geotextile Fabric
- Uncompacted subgrade
Pervious Pavement

Impervious Pavement
Pervious Pavement Benefits

• The cost of initial installation is slightly higher than regular pavement.

• Significantly lower lifecycle costs more than offset the initial additional investment
  – Decrease in crack seal maintenance and seal coating
  – About the same overall surface maintenance as regular pavement (sweeping, painting, etc.)
  – No stormwater system cleanout or maintenance costs.
Pervious Pavement Benefits

• Environmental benefits
  – More natural hydrologic cycle – groundwater recharge
  – Pollutant reduction in the pavement section matrix
  – No downstream erosion issue due to reduced impact of storm surge to adjacent waterways
  – Snow and ice melts significantly faster resulting in less chemical application
Pervious pavement is an excellent stormwater management tool if the subsurface conditions are suitable and the proposed use/operation are compatible with onsite infiltration.