Porous Asphalt Pembane for Stormwater Management
The UNH Stormwater Center  Web: www.unh.edu/erg/cstev/

| Benefits and Uses | Porous Asphalt can be used in place of traditional stormwater management measures given the proper conditions. Porous Asphalt’s primary advantages are: 1. Quantity and Flood Control 2. Water Quality Treatment 3. Recharges Groundwater to Underlying Aquifers 4. Allows for Reduction of Stormwater Infrastructure (Piping, Catch-Basins, Retention Ponds, Curbing, etc.) 5. Suitable for Cold-Climate Applications, Maintains Recharge Capacity When Frozen 6. Allows for Reduced Salt and Sand Usage Due to Low/No Black Ice Development 7. Maintains Traction While Wet 8. Reduced Spray from Traveling Vehicles, Reduced Roadway Noise 9. Extended Pavement Life Due to Well Drained Base and Reduced Freeze-Thaw |
| Disadvantages | Requires Routine (Quarterly) Vacuum Sweeping (Vac-Assisted Dry Sweeper Only)  • Proper Construction Stabilization and Erosion Control are Required to Prevent Clogging  • Quality Control for Material Production and Installation are Essential for Success  • Accidental Seal-Coating or Similar Surface Treatment Will Cause Failure |
| Cost & Maintenance | Total Project Cost is Comparable for Porous Asphalt with Reduced Stormwater Infrastructure VS. Standard Pavement Applications where Stormwater Infrastructure is Required  • Materials Cost is ~20-25% More Than Traditional Asphalt  • Long-term Maintenance is Required by Routine Quarterly Vacuum Sweeping  • Sweeping Cost May Be Off-set by Reduced Deicing Costs  • Repairs Can Be Made with Standard Asphalt Not to Exceed 10% of Surface Area |
| Design Criteria | Soil Permeability is Recommended Between 0.25-3.0 Inches Per Hour  • Recommended Drainage Time of 24-48 Hours  • Sub-Drains Should be Used Where Proper Drainage May be an Issue to Minimize Frost Damage  • Most Appropriate for use with Low-Use Roadways and Parking Lots—Without a Modified Asphalt Binder  • 3-5 Feet of Vertical Separation is Needed from Seasonal High Groundwater |

**TYPICAL POROUS ASPHALT CROSS-SECTION**

- 4” of porous asphalt
- 4” thickness of ¾” crushed stone
- 8-12” thickness of open graded reservoir subbase
- 4” thickness of ¾” > crushed stone for frost protection
- Soil permeability >0.5 in/hr

**Additional Resources**
- Ferguson, B. (2005), Porous Pavements, CRC Press.