

Environmental Initiatives Relating to Connecticut Pavement

James Mahoney

Executive Program Director

Connecticut Transportation Institute

University of Connecticut

james.mahoney@uconn.edu

860.486.9299

Wide Variety of Activities Regarding the Environment and Asphalt Pavement

- Porous Pavement
- Reduction of VOC's from liquid asphalt treatments
- Use of polymers to extend service life
- Warm Mix Asphalt
- Increased use of Recycled Asphalt Pavement (RAP)

Porous Pavement

- **Allows water to drain vertically through the pavement into a stone reservoir under the road until it is absorbed by the soil**
- **Reduces or Eliminates the need for sedimentation ponds**

Reduction in VOC's in Liquid Asphalt Treatments

- Some pavement surface treatments utilized petroleum solvents to “deliver” the asphalt binder
- When the solvents evaporate, the VOCs combine with nitrous oxide and sunshine to form ground level ozone
- Many treatments have been reformulated to reduce or eliminate VOCs

Use of Polymer Modified Asphalt Binder

- **Beginning this year to use polymer modified binder in limited access highways**
- **Polymer makes the pavement more elastic which will extend its service life**
- **Will reduce maintenance costs, user delays and extend period between road paving**

Warm Mix Asphalt

- **Reduces the production temperature of asphalt pavements**
- **Reduces the amount of fuel required for heating**
- **Reduces the emissions from the asphalt pavement**
- **Can be accomplished by addition of wax, chemical or water foaming agent**

Increased Use of RAP

- **Uses millings from roadways to reduce the need for asphalt binder and aggregate**
- **Utilizes what used to be considered a waste product**
- **In recent years, have increased the maximum amount of RAP to 20%**
- **Tends to harden the asphalt and this must be accounted for**

Potential Use of RAS in Pavement

- **ConnDOT has expressed the possibility of constructing a pilot project using RAS in 2012**
- **Need to develop a specification for the use of RAS and an evaluation process**
- **Looking for partners to assist with pilot such that construction is at no additional cost to ConnDOT**

Summary

- **Many changes taking place in a short period within the asphalt paving world**
- **Many of these items have both environmental benefits as well as economic benefits**
 - **Items that benefit the environment that also provide an economic benefit are most sustainable**
- **The use of RAS in a pilot project constructed in 2012 is a possibility**