Coal Tar Sealant, the Ban and the Science in Austin TX

Mateo Scoggins, City of Austin TX
What Are PAHs?  
(polycyclic aromatic hydrocarbons)

- Produced by combustion of fossil fuels
- Many are carcinogenic, toxic, and mutagenic
- Urban sources:
  - Used motor oil
  - Exhaust
  - Industrial emissions
  - Asphalt
  - Coal tar
  - Tires
What is sealcoat?

Before ...

During

After

... and long after
USGS looks at PAH cores in local reservoir...
City of Austin monitors stream bed sediment ...
City of Austin monitors stream bed sediment ...
Tracing the source

- Total PAHs, ppm
- Median
- 25%-75%
- Non-Outlier Range
- Outliers

- Scrapings
- Parking Lot
- Dirt
- Tributary Above Pool
- Barton Springs
- Above Pool
- Below Pool
- Barton Creek
Sealcoat products

Asphalt
- Oil based
- Lower in PAH
- Used mainly in western U.S.

Coal tar
- From coking of coal
- 50% or more PAH by weight
- Resists oil/gas

PEC of 23 ppm
PAHs in Parking Lot Sediments

- **Urban Lakes**: 12 mg/kg
- **Charles R. MA**: 66 mg/kg
- **Black R. Ohio**: 1,100 mg/kg (Superfund site)
- **Used Oil**: 7 mg/kg
- **Tires**: 30 mg/kg
- **Asphalt**: 10 mg/kg

- **PEC = 23**

- **Used Oil**: 730 mg/kg
- **Tires**: 80-200 mg/kg
- **Asphalt**: 2-10 mg/kg
Ecological Effects

- Ecological Effects
- Lab Toxicity
- Mesocosm
- Field study
- Amphibian study
Ban Coal Tar Sealants?

- > 600,000 gallons of coal tar sealant applied annually in Austin area (4 million pounds of PAHs)
- Wash-off study indicates sealants may represent majority of PAH load in streams studied
- Concentrations of PAH’s are increasing in receiving water and over 13% of Austin streams have PAH hot spots
- CTS tied to water quality degradation locally
Ban Outreach

- Stakeholders meetings (Jan 04, July 05)
- Presentations at state and national professional meetings
- Published research
- Technical briefings to EPA, USGS and US Department of Interior
- Congressional briefing
- Local public process
The Ban

- Use prohibited in the City jurisdiction
- Sale prohibited unless intended application outside jurisdiction
- Enforcement is complaint and staff driven
- Fines up to $2,000/day
Ban Status

- 7 violations to date.
- One state legal challenge
- Initial industry efforts
- Nat’l building suppliers pull CST
- Variety of “Post-Ban” research and media attention
Ban Monitoring

- Still early to make any conclusions
- Legacy sources, PAH character is older
- Some watersheds showing decreases
- Many are variable with no trends
Questions?