Frequently Asked Questions: Coal Tar based Sealcoat

What is coal tar sealcoat and why is it a human and aquatic health threat?

- Coal tar is a thick, black or brown liquid that is a byproduct of the carbonization of coal for the steel industry or the gasification of coal to make coal gas.
- Coal tar contains very high concentrations (5-10%) of Polycyclic Aromatic Hydrocarbons (PAHs) which is a class of chemicals that contain known and suspected carcinogens, mutagens and/or teratogens (causing birth defects).

What is the science behind the need for action?

- Aquatic health: Explicit link now between coal tar runoff and toxicity to aquatic organisms (mortality, cardiotoxicity, DNA damage). Runoff remains acutely toxic for weeks to months after CT sealcoat application.
- Human health: **Cancer risk estimated at 38 times greater** in people who spend their lifetime living near coal tar seal-coated surfaces, especially children because they interact more (play on/near) with the pavement.
- Human health: The International Agency for Research on Cancer lists coal tar pitch (a major component of coal tar sealcoat) as a **Group 1 carcinogen**, which means it is known to cause cancer in humans.
- Human health: PAHs are correlated with lower IQ, childhood asthma, low birth weight, premature delivery, heart malformations and developmental delays.
- Economic impact: Creating **toxic sediments in stormwater systems** requiring costly disposal (estimated cost exceeding $1 billion for clean-up of MN catch basins)

Is there an alternative to Coal Tar?

- Asphalt based sealcoat is a readily available alternative. Coal tar sealcoat contains 1000 times the amount of PAHs than asphalt based sealcoats.
- **Anthony's Asphalt** in Dexter, MI applies only asphalt based sealcoat.
- Anthony has shared first hand observations on how coal tar harms applicators.
- We are looking to identify others. If you know of others, please let us know.
- Another alternative is to avoid any sealcoating.

What actions have others in the area taken?

- **Van Buren Township passed first township wide ban in Michigan** in December 2015.
- UM banned use on all University properties
- Washtenaw County no longer allows the use of coal tar sealcoat for county projects.
- City of Ann Arbor, Scio Township, Dexter, Milford, Belleville and Sumpter are all in varying stages of action of instituting a ban.
- Representative Kristy Pagan (D-Canton) introduced HB 5174 to the State of Michigan in December 2015. (likely a long road ahead on this)

What actions have been taken nationwide?

- Austin, TX was first municipal ban ten years ago
- **MN, WA and District of Columbia have bans**

- Also, dozens of counties, townships and villages throughout the US
- Issue has been taken to the USEPA but no action has been taken yet to regulate this substance at the federal level.
- Most major hardware retailers voluntarily stopped stocking coal tar sealcoat products.

Do we have evidence that the problem exists here?

- HRWC sampled 3 detention basins in Ann Arbor and found high concentrations of many types of PAH compounds in all three basins. The concentrations often exceeded "probable effects concentrations" which indicate when a toxin is likely to negatively impact aquatic organisms.
    - More detail: *Of the ten PAH compounds with scientifically identified "probable effects concentrations" (PEC, i.e. the concentration that results in health impacts or death in aquatic organisms), sediments from the Malletts Creek pond exceeded the PEC for eight PAH compounds! Some of those PAHs are known carcinogens. Sediments in the Traver and Fleming ponds exceeded the PEC for 6 and 4 of the PAH compounds, respectively. In the Malletts Creek sample, the PEC for one PAH was exceeded by more than 10-fold. The bottom line is these detention pond sediments are highly toxic!*
- Samples of sediment from behind Peninsular Dam in Ypsi have PAH levels above Probably Effects Concentrations.
- We have called many applicators and confirmed that the product primarily applied for asphalt maintenance is coal tar sealcoat.
- Published scientific studies have traced 50-75% of all PAHs found in Great Lakes sediments to originate from coal tar.

What is HRWC advocating?

Homeowners and those who manage grounds for **private entities such as churches, daycares or businesses can help**....

- Eliminate sealcoating as a maintenance practice for asphalt surfaces.
- If sealcoating cannot be eliminated, use asphalt-based sealcoat rather than coal tar sealcoat.

Municipalities can change policies and practices....

- Pass an ordinance banning the use of coal tar and other high PAH sealcoat within the municipality.
- Adopt a resolution committing to the reduction or elimination of the use of coal tar sealcoat on city property.
- Educate residents and businesses about this issue
- We have sample ordinance language available

Are bans effective?

- Yes. 10 years after Austin, Texas implemented ban, 58% reduction in PAH levels in lake sediments.

Why regulate for "other high-PAH sealcoats?"

- Since the backlash against coal tar sealcoat has grown, alternative products have come to market with claims of being "coal tar free" or "environmentally friendly" while still containing high concentrations of PAHs.
- We recommend regulating any sealcoat product not exceed 0.1% PAH content, by weight. This allows the use of asphalt based sealcoat (which typically has 0.005 – 0.01% PAHs)

How does this change affect business? Pavement maintenance companies?

- Washtenaw County bid process was unaffected by requirement to use alternative sealcoat product. They received competitive bids for work using asphalt-based sealcoat.
- Anthony of Anthony's asphalt has seen business succeed and grow after switch. He is able to provide competitive bids and win jobs.