EH&S Challenges
Facing the Asphalt Pavement industry
Presentation Overview

- NAPA partners
- Overview of NAPA’s EH&S program
- Health & Safety issues
- Environmental issues
- Upcoming events
- Questions
NAPA and NAPA Partners

- NAPA / SAPA relationship
- Incoming Chairman
- Priorities
  - Highway Funding
  - Competition with Concrete
  - Regulatory Issues
  - Sustainability
- Membership
Two Committees:

- Health & Safety
- Environmental

Environmental Survival Fund

- EPA Delisting
- Fumes Issue

Ongoing Compliance Assistance

Regulatory and Legislative

An extension of your EH&S staff
Crystalline Silica Rule

- Known hazard
- Top priority of OSHA
- Draft Rule issued
  - Respirators required during roadway milling
  - We have a better solution
  - Participated in all aspects of rulemaking process
- Milling Machine Partnership
Milling Machine Partnership

- Agency-Labor-Industry Partnership
- 10 years of dust control verification
- New Machines (starting 2017): vacuum & spray systems
- Existing machines (up to 5 yrs old): retrofit spray made avail.
- NIOSH to publish guidance: systems will meet Standard
- No milling respiratory protection; checking other activities
*** Section 2 - Hazards Identification ***

GHS Classification:
- Acute Toxicity Oral - Category 3
- Skin Corrosion/Irritation - Category 1B
- Eye Damage/Irritation - Category 1
- Skin Sensitization - Category 1
- Carcinogenicity - Category 1A
- Toxic to Reproduction - Category 2
- Specific Target Organ Toxicity Single Exposure - Category 2
- Specific Target Organ Toxicity Repeat Exposure - Category 2
- Hazardous to the Aquatic Environment Acute - Category 3
- Hazardous to the Aquatic Environment Chronic - Category 3

GHS LABEL ELEMENTS

Symbol(s)

Signal Word
Danger

Hazard Statements
- Toxic if swallowed.
- Causes severe skin burns and eye damage.
- May cause an allergic skin reaction.
- May cause cancer.
- Suspected of damaging fertility or the unborn child.
- May cause damage to organs . . .

Harmful to aquatic life with long lasting effects.
Updating (M)SDSs

- Requires standardizing and updating SDSs by June ‘15
- Warnings are front-and-center
- (M)SDSs typically used by activists to generate concern
- Opportunity for industry to address product hazard
- Prelim. analysis: “non-labeled”
- Consistent hazard language
- Developing guidance

GHS Classification:
- Acute Toxicity Oral - Category 3
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- Eye Damage Irritation - Category 1
- Skin Sensitization - Category 1
- Carcinogenicity - Category 1A
- Toxic to Reproduction - Category 2
- Specific Target Organ Toxicity Single Exposure - Category 3B
- Specific Target Organ Toxicity Repeat Exposure - Category 3B
- Hazardous to the Aquatic Environment Acute - Category 3
- Hazardous to the Aquatic Environment Chronic - Category 3

GHS LABEL ELEMENTS
- Symbol(s)
- Signal Word: Danger
- Hazard Statements:
  - Toxic if swallowed.
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  - May cause an allergic skin reaction.
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  - Suspected of damaging fertility or the unborn child.
  - May cause damage to organs . . .
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*** Section 2 - Hazards Identification ***
More than 37,000 WZ crash injuries annually & 600+ fatalities

Most relevant to asphalt paving operations on live lanes

State DOTs have authority / means to implement protection but associated cost / payment and public egress is an issue

NAPA & stakeholders developing best practices with FHWA

NAPA Care Fund
Safety Benchmarking

- OSHA 300 logs required for worksite / job injuries
- OSHA pushing for electronic reporting & Suppl. Rule
  - 2015 changes include mandatory reporting of hospitalizations
- NAPA continues to request Member information
- 2012 rate at 2.9 injuries per 100 FTE (one-third reporting)
  - vs. 4.4 for general highway construction
- Focus on causation & prevention best practices
  - Slips/trips/falls & over-exertion with material handling

OSHA’s Form 300 (Rev. 01/2004)

Log of Work-Related Injuries and Illnesses

You must record information about every work-related death and about every work-related injury or illness that involves loss of consciousness, restricted work activity or job transfer, days away from work, or medical treatment beyond first aid. You must also record significant work-related injuries and illnesses that are diagnosed by a physician or licensed health care professional. You must also record work-related injuries and illnesses that meet any of the specific recording criteria listed in 29 CFR Part 1904.4 through 1904.12. Feel free to use two lines for a single case if you need to. You must complete an Injury and Illness Incident Report (OSHA Form 301) or equivalent form for each injury or illness recorded on this form. If you’re not sure whether a case is recordable, call your local OSHA office for help.

OSHA’s Form 300 (Rev. 01/2004)
Trucking “Hours of Service” (HOS)

- Electronic logging proposal
- “Short Haul” exemption to 30-min mandatory break
  - NAPA / stakeholders successful in bid to remove break
  - 100 air-mile radius: start & return w/in 12 hrs
  - 10 consecutive hrs off duty
- Adhere to other FMCSA regs and record log when need
Greenhouse Gas Regulations

- Climate Change and CO₂ Reduction
  - Transportation sector is a large CO₂ contributor
  - EPA regulating larger sources (e.g., Power Plants) now . . .
  - “Cap-and-Trade” . . . not yet at federal level

- Some state GHG reporting required for asphalt mix plants
  - NAPA’s GHG Calculator is useful
  - Recognizing “carbon credit” for certain practices

- Concrete industry advocates pavement deflection / reflectivity
  - NAPA responding with valid science
## How to use it:

### Actual CO2e Emissions and Credits

<table>
<thead>
<tr>
<th>Year</th>
<th>Mix Produced (Tons)</th>
<th>300,000</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Plant Combustion</strong></td>
<td>Fuel Oil (Gal)</td>
<td>200,000</td>
</tr>
<tr>
<td></td>
<td>Recycled Oil (Gal)</td>
<td>200,000</td>
</tr>
<tr>
<td></td>
<td>Natural Gas (DTH)</td>
<td>27,800</td>
</tr>
<tr>
<td><strong>Plant Equipment &amp; Vehicles</strong></td>
<td>Gasoline (Gal)</td>
<td>7,500</td>
</tr>
<tr>
<td></td>
<td>Diesel Fuel (Gal)</td>
<td>35,000</td>
</tr>
<tr>
<td></td>
<td>Propane (Gal)</td>
<td>10,000</td>
</tr>
<tr>
<td><strong>Line Power (kWh)</strong></td>
<td>Pennsylvania</td>
<td>200,000</td>
</tr>
</tbody>
</table>

### Metric Tonnes CO2e Emissions

1 Metric Tonne = 1.1 US Tons

### Metric Tonnes CO2e Credit

### Credits

<table>
<thead>
<tr>
<th>Fuels</th>
<th>Average</th>
<th>Tons</th>
<th>% Mix</th>
<th>Target %</th>
</tr>
</thead>
<tbody>
<tr>
<td>WMA</td>
<td>Mix ofF</td>
<td>270</td>
<td>100,000</td>
<td>33.3</td>
</tr>
<tr>
<td>RAP</td>
<td>% AC</td>
<td>4.6</td>
<td>50,000</td>
<td>16.7</td>
</tr>
<tr>
<td>RAS</td>
<td>% AC</td>
<td>18.4</td>
<td>5,000</td>
<td>1.7</td>
</tr>
</tbody>
</table>

### MMBTU/Ton Mix

Verify accuracy of Plant Fuel data if value is outside the Green Zone

<table>
<thead>
<tr>
<th>Reportable</th>
<th>Tonnes CO2e</th>
<th>Percent of Total</th>
<th>Lbs CO2e/Ton Mix</th>
</tr>
</thead>
<tbody>
<tr>
<td>Plant Combustion</td>
<td>5,561</td>
<td>90.4%</td>
<td>40.9</td>
</tr>
<tr>
<td>Equipment &amp; Vehicles</td>
<td>483</td>
<td>7.9%</td>
<td>3.6</td>
</tr>
<tr>
<td>Electric</td>
<td>104</td>
<td>1.7%</td>
<td>0.76</td>
</tr>
<tr>
<td>Less Credits</td>
<td>-1,487</td>
<td>-24.2%</td>
<td>-10.9</td>
</tr>
<tr>
<td><strong>Net CO2e</strong></td>
<td>4,662</td>
<td></td>
<td>34.3</td>
</tr>
</tbody>
</table>
EPA proposing broad definition

Real potential for asphalt plant impact
  • certainly quarries

House voted to limit EPA’s authority

NAPA working with stakeholders
➢ EPA proposing broad definition
➢ Real potential for asphalt plant impact
  • certainly quarries
➢ House voted to limit EPA’s authority
➢ NAPA working with stakeholders
NAPA provides guidance on writing SPCC plans

Additional guidance on asphalt tank inspections forthcoming
- Risk characterization to set formal evaluation frequency
- Inspector “qualifications”

Understand what is being stored on property
- asphalt rejuvenators
- Anti-strips
- WMA modifiers
Alphabet soup is **here to stay** even though process broken

- **Green Construction Codes**

- **envision™**

- **ISI INSTITUTE FOR SUSTAINABLE INFRASTRUCTURE**

- **U.S. GREEN BUILDING COUNCIL**

- **LEED CERTIFIED**

- **USGBC**
Alphabet soup is **here to stay** even though process broken

- Affecting product selection decisions now . . . and more into the future
- Calif. probably more aware than others
- Concrete industry advocating pavement deflection / reflectivity
- **NAPA** working to dispel myths and promote real science

- Life cycle assessment and Env. Product Declarations
- Contact Heather Dylla, Dir. Sustainable Engineering
Community Activism

- Perception vs. reality
- Addressing community concerns
- RAP, leachate, emissions
- Community open houses
- Tours for elected officials
- NAPA brochures

The Environmental Impact of Asphalt Plants

Hundreds of communities across the country coexist peacefully with asphalt plants. These facilities are in urban, suburban, and rural areas, and most of them are known as good neighbors who are engaged with their community and dedicated to sustainable operations.

However, there is a lot of misleading and often daunting information about asphalt plants and asphalt products. Therefore, it's important to understand what's fact, what's fiction, and what the differences are between different types of asphalt products.

As with any industrial facility, it’s helpful to understand what happens behind the gates at an asphalt plant. This paper provides basic information about what happens at an asphalt plant including how it impacts your neighborhood, the community, and the environment.

Well Regulated by the U.S. EPA

Asphalt plants, or more accurately asphalt pavement mixing facilities, are industrial operations that mix liquid asphalt binder (also called asphalt cement) with crushed rock, gravel, and sand (collectively called aggregates) to make pavement. Asphalt binder, the glue that binds the aggregates together, is one of many distilled products obtained from the oil refining process. Similar to other refined oils, such as lubricating oils, asphalt binder is processed to meet defined standards. Some mixes also require additives, which can range from chemicals that improve mix performance to natural fibers that strengthen specialty mixes. The use and storage of these materials is carefully monitored and regulated.

Asphalt pavement mixing facilities are well-regulated by federal and state environmental agencies, and they employ multiple emission control systems. The small amount of emissions released from these control systems are closely monitored to ensure they stay well below any permitted level set by the U.S. Environmental Protection Agency (EPA) and other regulators to ensure that they pose no health or environmental risk to nearby communities.

In fact, over a decade ago, the EPA reviewed emissions from asphalt plants and determined that such facilities are not a major source of air pollution and were subsequently delisted by the agency. Subsequent studies by various regulatory agencies have confirmed that emissions from asphalt pavement mixing facilities do not present an environmental or public health hazard.

Emissions — Very Low and Getting Lower

The majority of emissions at asphalt mixing facilities come from the combustion of fuel, such as natural gas, that are used to dry and heat the rock or aggregate and to keep the temperature of the asphalt hot. Most of the other potential emissions, such as the dust gener-
NAPA Annual Meeting: January 25-28, Marco Island FL
- Session on Regulatory Issues
- EH&S Committees meet

World of Asphalt: March 17-19, Baltimore MD
- EH&S Compliance Workshop
- Work Zone Safety Conference
- Milling Machine Partnership Recognition

TCC Legislative Fly-In: April 14-15, Washington DC
Questions and Thank-you

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