

# ON THE AIR

Summer  
2011

A Newsletter about  
Clean Air. Provided  
by Spokane Regional  
Clean Air Agency.

## Summer Smog Season *Keeping Safe from Smog*

**T**hose lazy, hazy days of summer are finally here! If you spend time with kids in the summer, you want to keep them safe while providing fun outdoor experiences. Did you know that on those hazy days, Spokane's air quality may be at or close to unhealthy levels? During summer, microscopic smoke particles and ground-level ozone combine with other pollutants to create smog. When air pollution is on the rise, you should avoid strenuous outdoor activity, especially if you have asthma or heart and lung disease.

### Ground-level ozone

Ozone is formed when pollutants, such as gasoline vapors and other volatile organic compounds, react in the presence of sunlight.

Ozone can cause coughing, throat irritation, and pain when taking a deep breath. It can also reduce lung function, inflame the lining of the lungs, and trigger asthma attacks. Repeated inflammation over time may permanently scar lung tissue.

### Fine particles

Microscopic particles of smoke can travel great distances and remain suspended in the air for a long time. Our area has been impacted by wildfires burning hundreds of miles away. When inhaled, smoke particles bypass the body's natural defense system and can lodge deep into the lungs.

Your chances of being affected by air pollution increase the longer you are active outdoors or the more strenuous the activity. Kids and teens who are active outdoors—especially those with asthma or other respiratory problems—are particularly sensitive.

### Check the Air Quality Index

Each morning, Spokane Clean Air provides a two day air quality forecast, available online, [www.spokaneleanair.org](http://www.spokaneleanair.org). While online, you can sign-up to receive the daily report via email.

Fortunately, most of our days are in the good or moderate range, so get out there and enjoy the beautiful summer weather and fresh air! ■

## July's Mow Down Air Pollution Give-away



**T**he annual Mow Down Air Pollution promotion is back, thanks to generous donations from Black & Decker, Lowes and our media partner, KHQ Television.

From July 1-31, residents can enter-to-win electric yard tools, including an electric lawn mower donated by Lowes. Enter online at [KHQ.com](http://KHQ.com), click Interact, then Current Contests, or in person at Spokane Clean Air's office, 3104 E. Augusta Ave.

### Help Mow Down Air Pollution this summer:

**Mow later.** Mowing late afternoon or evening reduces the amount ozone formed by the action of intense sunlight on the released gasoline vapors.

**Avoid spills.** One ounce of spilled gas is equivalent to the pollution emitted by driving 25 miles.

**Keep equipment tuned.** Follow operator's manual for maintenance schedule.

**Consider electric.** Switch to electric or manual tools—it's better for our environment and it will save you time and money on gas and repairs.

**Reduce Mowing.** Use low-maintenance turf grasses or other mixtures that grow slowly and require less frequent mowing. Decrease lawn area: plant trees, shrubs, rock gardens, etc.

For more clean air tips, visit [spokaneleanair.org](http://spokaneleanair.org)



Throughout the year, Spokane Clean Air receives calls from residents concerned about odors. During summer, odor complaints tend to peak, probably because people are getting outside more and opening up windows. Complaints are filed against a variety of operations, including animal rendering, asphalt plants, coffee roasting, composting, spray paint operations, wastewater treatment plants, etc. Odors can be a nuisance, but are they a public health hazard?

### Health Impacts of Odors

Odors are a complex mixture of gases, vapors, and dust. It is possible for certain odorous emissions to have an impact on physical health while others may not. The potential impact of any odor depends upon the concentration of odorous emissions, and the frequency and duration of exposure. The most frequently reported symptoms attributed to odors include headache, nausea, hoarseness, cough, congestion, palpitations, shortness of breath, and eye, nose, and throat irritation.

### Odor/Nuisance Regulation

Spokane Clean Air takes odor complaints seriously and follows protocols established through our air quality regulations to protect the air and public health. Per agency Regulation I, Article VI, Section 6.04:

*It shall be unlawful for any person to cause or allow the emission of any air contaminant in sufficient quantities and of such characteristics and duration as is, or is likely to unreasonably interfere with enjoyment of life and property.*

# Warmer Weather Prompts More Odor Complaints

## Response to Odor Complaints

Once a complaint is received, it is recorded into a database and then assigned to a field inspector for follow-up. Inspectors generally respond to complaints during regular business hours. Three conditions must be met to consider enforcement action:

(1) An inspector detects an odor at an intensity level of 2 or greater using this scale:

**Level 0** – no odor detected

**Level 1** – odor barely detected

**Level 2** – odor is distinct, definite, any unpleasant characteristics are recognizable

**Level 3** – odor is objectionable enough or strong enough to cause attempts at avoidance

**Level 4** – odor is so strong that a person does not want to remain present

(2) The person(s) impacted by the odor provides an affidavit describing the impact that the smell is having on their lives. Persons providing affidavits may be required to testify at a hearing if the case is challenged.

(3) An inspector independently identifies the source of the odor.

## Enforcement Action

Before issuing a Notice of Violation (NOV) the Agency may give the person causing the odor 15 days to provide information which demonstrates to the satisfaction of the Agency that all controls and operating practices to prevent or minimize odors to the greatest degree practicable are being employed.

If the Agency determines that all such efforts are being employed by the

person causing the odors and that no additional control measures or alternate operating practices are appropriate, the Agency may decline to pursue formal enforcement action. This does not preclude a person affected by odors to pursue his or her own legal action against someone causing odors.

If enforcement action is pursued, a NOV will be issued and the recipient has 30 days to respond to the allegation(s). After 30 days, a fine may be assessed. In calculating the fine, a variety of factors are considered, such as how long the violation occurred, the compliance record of the person receiving the violation, responsiveness in correcting the violation, and any financial gain associated with non-compliance.

The person receiving the fine has 30 days to make payment, request mitigation, or file an appeal. It will typically take at least three months from the time a complaint is received until the case is resolved. In some cases where enforcement action is challenged, it may take more than 12 months to resolve.

## Filing Odor/Nuisance Complaints

To file a complaint, contact Spokane Clean Air as soon as possible at 477-4727. The call may be answered by voice mail recording if it placed during non-business hours. You may also register your complaint online at [www.spokanecleanair.org](http://www.spokanecleanair.org), under "Contact Us." You will be prompted to provide information, including your name, address, and phone number. Also plan on providing the date, time and location of the odor when first detected. For more information, contact us at 477-4727. ■

# Patriotic Motors...

*Saving America one car at a time*

**P**atriotic Motors is a local electric car conversion and components company started in 2008 by Tim Foster. Inspired by a “big oil” memo stating that oil supplies would peak by 2012, supplies would take a big dive by 2020, and that there would be no more oil by 2058, Foster knew he needed to do something.

While taking entrepreneur classes at Spokane Community College (SCC), Foster researched alternatives fuels.

“I couldn’t find anything that made sense, even battery electric, and this was back when gasoline was about \$2.89 per gallon,” said Foster. “But if you couple battery electric with photovoltaic solar, it makes sense.”

In 2007, he converted his first vehicle, a 1996 Jeep Cherokee. “It wasn’t the perfect conversion” recalled Foster, “but I sold it to a man in Austin, Texas and I understand it’s still on the road today.”

The next year, Foster started his company, Patriotic Motors. Since then, he has converted a handful of cars, including a 1999 Isuzu Rodeo, which won first place in SCC’s Spring Fling Car Show. His most recent project is a Subaru Forester conversion that was recently displayed at Spokane’s Earth Day Celebration.

“The owner of the Subaru invested over \$30,000 for a top-of-the line conversion to use as a prototype. It has 100 lithium batteries distributed under the hood and in the back cargo space to maintain the important stock weight distribution. After the conversion, the car weighed about 200 pounds heavier. It is set-up for 180 amps, will top at 75 mph, and has a range of about 100 miles.

The Subaru gets an 80% charge in two hours on a 240 volt 30 amp circuit, which is the same type of outlet that an electric range uses. A 100% charge using a normal household outlet of 120 volt 15 amps will take around 14 hours.

Currently, there are three basic categories of battery technology: nickel metal hydride, lead acid and lithium. Nickel metal hydride batteries are used in major manufacturers vehicles but are not readily available to non-OEM (Original Equipment Manufacturer) converters like Foster. Lithium is the



newest and most energy dense and most manufacturers are now using that technology instead. It is also readily available from Chinese companies, but American companies are reluctant to sell to non-OEM.

Several research projects are underway to discover new battery technology with more assets than lithium, such as high power density, less thermal issues, cheaper to manufacture, etc.

Based on current technology, Foster believes Lithium is the way to go. Lithium batteries cost more, but they have 10-15 year life while lead acid have 3-5 years. Lithium batteries are lighter and smaller – another plus.



*Tim Foster, Owner of Patriotic Motors, in the Subaru he converted to battery electric.*

Thinking about an electric battery conversion but not sure if it makes sense for you? According to Foster, an initial investment in a good quality conversion, using Lithium batteries, with a 60 mile range between recharge, will cost about \$15,000. It’s the operating costs that are exciting – 9 cents per mile!

This includes the lithium batteries and electricity at 7 cents per kilowatt. For lead acid batteries, it’ll be around 11 cents per mile. Compare this to gasoline cars at about 20 cents per mile, if you get around 18 miles per gallon. This is just the fuel costs – it is not counting maintenance costs associated with an Internal Combustion Engine, which has a fuel system, exhaust system and a cooling system.

You will not see these with an electric battery conversion!

“A gasoline-powered car will never pay for itself, but an electric battery conversion will,” said Foster.

A growing area of Patriotic Motors is selling electric battery conversion components.

“Doing conversions does not pay well,” stated Foster. “I would like to teach more people to convert and thereby duplicate my efforts so we can get to one percent of America’s vehicles.

Foster is certainly working hard to live up to his company’s motto to save America one car at a time. ■

## Students Recognized at Annual Youth Environmental Conference

**T**hirty-eight students earned superior marks for their individual or team environmental science projects at the recent Spokane Youth Environmental Conference (SYEC).

Over 170 middle and high school students gathered at Spokane Community College to share their projects. Below is a list of recognized students by school name. Later this summer, a journal summarizing each of the top projects will be available online at [www.syec.org](http://www.syec.org).

**Centennial Middle School** - Kathryn Butler, Christopher Hatten, William Fisher

**Central Valley High School** - Holly Miller, Marissa Wellington, Ivvie Shellhorn, Penny

Zhang, DG Kim, Karl Ellingson, Courtney Owens, Haley Feider, Clerie Calvo, Lucy Jones, Molly Barnhart, Alyssa Peck, Shelby Pace, Jessie Kunz-Pfeiffer, Philip Howard, Hailee Herbst, Courtney Petrini, Madie Laws, Carlin Coulson, Katy Dolan, Sammy Nania, Mathew Summers, Alex Slate, John Weiser, Jaelyn Urbanec, Anusha Gollapalli, Melissa Morgan, Ryan Edie, Mara Orenstein

**Freeman Middle School** - Rachel Fricke, Bethany Williams

**Mountainside Middle School** - Brittney Sanders, Dylan Stout, Jordyn Brooks

**Riverside High School** - Erik Kemp, John Taylor

**The Enrichment Cooperative** - Severyn Westbrook (pictured below)

With private donations, students received a gift certificate to Auntie's Bookstore and each participating school received a grant for their school science program. SYEC donors include: Auntie's Bookstore, Avista, Budinger

& Associates, Central Premix/Inland Asphalt, CH2MHill, GeoEngineers, NW Farm Credit Services, REI, Rockwood, Spokane Aquifer Joint Board, Spokane County Conservation District, Telect, and Trans-Canada.



Conference organizing agencies include: NEW ESD 101, National Weather Service, Spokane County Conservation District, Spokane County Water Resources, Spokane Regional Clean Air Agency, Spokane Regional Solid Waste System, Washington State Department of Ecology, and West Valley Outdoor Learning Center.

The SYEC received a Science Education Advocate Award in 2009 by the state Leadership and Assistance for Science Education Reform (LASER). For more information about SYEC visit [www.syec.org](http://www.syec.org). ■

*On the Air* is a publication of the Spokane Regional Clean Air Agency. Its purpose is to inform local residents on all aspects of outdoor air pollution. Please contact Lisa Woodard, *Editor*, with comments or story ideas:

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