

Strategic Toxic Air Reduction (STAR) Program Frequently Asked Questions

Written for the Greater Louisville Sierra Club

By Sarah Lynn Cunningham, PE

What is the Metro Louisville Air Pollution Control District?

In 1945, Louisville was the first US city to regulate air quality locally, through its Smoke Commission. Twice since renamed, the Louisville Metro Air Pollution Control District (APCD) is both a “special district” and an agency of metro government’s Community Development Cabinet. A seven-person governing board, appointed by the Metro Mayor, adopts APCD’s regulations, resolutions and orders.

APCD currently regulates a wide range of air pollution sources, including industries, power plants, automotive fueling stations and asbestos removal projects—but no longer its pioneering Vehicle Emissions Testing program due to politics. APCD also monitors ambient air quality and operates several voluntary initiatives for reducing air pollution. Its web site is www.apcd.org

Does Louisville Have the Right to Regulate Its Own Air Quality?

In 1970, Congress adopted amendments to the Clean Air Act (CAA) requiring state and (where they exist) local agencies to address air pollution, and the Nixon Administration created the Environmental Protection Agency (EPA). The CAA was intended to provide a national minimum of air pollution control.

EPA’s regulations for achieving CAA goals set national air-quality standards, but generally delegate to state and local agencies the authority and responsibility to create plans and adopt and enforce regulations for meeting the standards in ways that make sense for their pollution sources and meteorological conditions. APCD plays that role in Louisville; the state Division of Air Quality does for the rest of KY, because no other community has chosen to take responsibility for improving its air quality.

State and local regulations and compliance plans must at a minimum meet federal requirements and air-quality criteria. Congress specifically protected the

right of state and local governments to set stronger standards, but the Kentucky General Assembly has restricted the right of the state agency to do so. Local air pollution control districts, such as Louisville's, are specifically authorized by the state legislature to go beyond state standards if needed to protect public health.

Typically, federal laws are too complicated and federal budgets too inadequate to allow huge laws like the CAA to be put into effect all at once or even in a few years. The EPA started enforcing the CAA with the most prevalent types of air pollutants (called "criteria pollutants," including ozone and acid-rain precursors) from the most prevalent sources (industry, power plants and autos).

The EPA has continued to add to CAA regulations as it receives funding and as the science, technology and case law develop, but is quite behind schedule on parts of its air toxics regulations.

What Are "Air Toxics?"

The term "air toxics" refers to a class of pollutants, which are (or may become) harmful to public health or the environment when present in sufficient quantities and duration in the ambient air. More specifically, air toxics:

- a) Are known (or may reasonably be anticipated) to be carcinogenic (capable of causing cancer), mutagenic (capable of mutating genes), teratogenic (capable of causing birth defects) or neurotoxic (capable of damaging nervous systems)
- b) Cause reproductive dysfunction
- c) Are acutely or chronically toxic
- d) Cause adverse environmental effects through ambient concentrations, bioaccumulation or deposition

How Was the STAR Program Developed?

The impetus for Metro Louisville's program to regulate air toxics, called the Strategic Toxics Air Reduction (STAR), grew from a 1996 grassroots effort that led to the formation of the West Jefferson County Community Task Force, an environmental justice organization dedicated to clean air, land and water for the

minority and low-income residents of that area. The task force included representatives of citizen groups, area industries, academia and government.

A study by the EPA regional office in Atlanta concluded that industry and non-industry sources of emissions in Louisville, including automobiles, resulted in the highest risks of cancer and non-cancer diseases/disorders of any metropolitan area in the Southeast US.

The task force focused on the need to base corrective actions on hard data on actual emissions and the related risks. With EPA participation, input from the affected community and industries and funding from grants and government, the task force monitored ambient air quality for certain air toxics for one year. The monitoring sites were in Western Louisville; the control sites were at (downwind) Shelby Campus and (upwind) Otter Creek Park.

The results of that study, publicly released in May 2003, showed that concentrations of 18 chemicals posed harmful risks of cancer or other diseases to Louisvillians. The EPA reviewed the data, and judged them to be valid and the result of sound science.

Courier-Journal reporter Jim Bruggers wrote numerous articles explaining the study results and public-health implications in plain English, prompting community groups to demand corrective action. Related Courier-Journal editorials challenged elected officials to better protect the community's public—and economic—health.

Based on the above studies, APCD exercised its authority to protect public health by regulating local sources of air toxics and proposed its STAR program regulations in September 2004. After 60 public meetings and through input from 1200+ citizens and industries, STAR regulations were twice revised. The APCD board unanimously adopted STAR in June 2005.

The EPA has judged STAR to be well designed.

How Will the STAR Program Work?

STAR targets not air toxics per se, but the public health risks they pose, and is both very complex and yet elegantly simple. This explanation focuses on step-by-step process, akin to the “continuous improvement” model used widely by industry to improve productivity, efficiency and profitability, and the basis of most industry “environmental managements systems.”

In essence, STAR requires industries to do no more than necessary to ensure that they are not contributing excessively to local public-health risks related to toxic air, using the following process:

Step One An estimated 210 local industries currently holding air pollution permits must report to APCD a qualitative and quantitative inventory of any emissions of 37 toxic chemicals from their facilities. If they have no such or negligible emissions, they are in compliance with the program; otherwise, they proceed to Step Two.

Step Two Industries next develop an inventory of detailed technical facility data, such as stack and vent locations and heights. They must also identify the locations of “fugitive” emissions of air toxics (such as leaks from process equipment, storage tanks and unloading/loading operations).

Step Three Using Step Two data, each industry makes simple calculations, and possibly runs specified computer models, to determine the risks to public health caused by each air toxic chemical used at or generated by its facilities. Those risks are compared to risk goals, called Environmental Acceptability Goals (EAGs)*, to determine if more work must be done:

- If no individual air toxic cancer risks are >1 EAG and the sum of its air toxic cancer risks is <7.5 EAGs, the facility complies with the program
- If no individual air toxic cancer risks are >1 EAG, but the sum of its individual air toxic cancer risks is >7.5 EAGs, the facility proceeds to Step Four
- If an individual air toxic cancer risk is >1 EAG or a non-cancer risk level is > 1 EAG, the facility proceeds to Step Four

* EAGs = one extra risk of cancer per million—and concentrations below the level at which adverse health effects could occur.

Step Four Industries whose emissions exceed EAGs must draft compliance plans and submit them for review and approval. Options include adding pollution-control technology, changing the chemicals used in processes, changing the processes, reducing hours of operation and/or seeking a variance through a public process.

Step Five Industries implement their approved compliance plans, including follow-up analysis to confirm that health risks were indeed adequately reduced.

What Has Been Local Industry's Response to STAR?

Some local industries are actively fighting implementation, but many others have begun working toward reducing their emissions. For example, American Synthetic Rubber, the area's largest emitter of 1, 3-butadiene, just invested significant money, time and effort into installing new equipment that reduced its butadiene emissions from 118,000 pounds/year to less than 8,000 pounds/year! The plant manager has also committed to aggressively tackle fugitive emissions.

Three new manufacturers announced their decisions to relocate to Louisville since STAR was proposed.

APCD has the authority to go beyond the minimum federal and state standards where needed to protect public health, but a bill pending before the 2006 General Assembly would strip Louisville—and all KY communities—of the power to set high standards to protect public health from both toxic air pollutants and other pollutants, like fine particles and ozone.

What Would Senate Bill 39 Do?

Senate Bill 39, filed by Senator Dan Seum, would amend KRS 77.015 relating to air pollution control districts to also read:

Notwithstanding any other provision of law, in a county containing a consolidated local government that has an operational air pollution control district, the rules and regulations promulgated for the purposes of air pollution control shall be no more stringent or burdensome than regulations promulgated or requirements imposed by federal and state government.

GLSC believes that SB 39, if adopted and signed by Governor Fletcher, could kill STAR by stripping APCD of its authority to regulate local air quality.

(Shortly after STAR was adopted, the state Division of Air Quality (DAQ) announced plans to better address air toxics, but has yet to propose actual regs. Given that the General Assembly has forbidden state environmental regs from exceeding EPA minimums, however, GLSC believes that Louisville would have to go back to waiting for the EPA to further regulate air toxics.)

Does This Issue Matter Outside of Louisville?

This issue matters throughout Kentucky for three main reasons:

- a) Air pollution doesn't respect political boundaries; pollution from Louisville blows into other communities.
- b) If it were to pass, this bill would prevent all KY communities from taking control of their local threats to public health from air pollution.
- c) Local governments are the most accountable to their citizens and businesses, and are in the best position to establish appropriate supplemental standards and requirements needed to protect public health.