

## Hazardous/Toxic Index Score

Data used, all data at the census tract level:

Variable	Description	Source
ACRES	Number of EPA Brownfields grant recipients.	FRS
AFS	Number of stationary sources of air pollution regulated by the EPA, State, and local air pollution agencies.	FRS
CEDS	Number of facilities monitored by the Virginia Department of Environmental Quality's (DEQ) as a source of pollutants.	FRS
CERCLIS	Number of abandoned, inactive, or uncontrolled hazardous waste sites regulated under the Comprehensive Environmental Response, Compensation, and Liability Act.	FRS
EGRID	Number of power plants or other electricity generators.	FRS
ICIS	Number of facilities that are subject to federal compliance and enforcement programs.	FRS
LUST	Number of sites with leaking underground storage tanks.	FRS
NCDB	Number of facilities that are subject to the Federal Insecticide, Fungicide, and Rodenticide Act or the Toxic Substances Control Act.	FRS
NPDES	Number of facilities that have surface water discharge permits issued under the Clean Water Act.	FRS
OIL	Number of facilities with the potential for "Substantial Harm" due to the quantity of oil stored and facility characteristics.	FRS
RADINFO	Number of facilities regulated by EPA for radiation and radioactivity.	FRS
RCRAINFO	Number of facilities that generate, transport, and treat, store, or dispose of hazardous waste.	FRS
TRIS	Number of facilities that are required to report to EPA's Toxics Release Inventory.	FRS
TSCA	Number of facilities that are regulated under the Toxic Substances Control Act.	FRS
HW Generated	Tons of hazardous waste generated.	BRS
HW Managed On-Site	Tons of hazardous waste managed at the site of generation.	BRS
HW Received	Tons of waste received from off-site for management.	BRS
Fugitive Air Releases	Pounds of toxic chemicals released to the air through some means other than a directed air stream.	TRI
Stack Releases	Pounds of toxic chemicals released to the air through a directed air stream (e.g., stack or vent).	TRI
Water Releases	Pounds of toxic chemicals released to bodies of water.	TRI
On-Site Releases	Pounds of toxic chemicals released on-site to any media.	TRI

FRS = EPA's Facility Registry System; BRS = EPA's RCRA Biennial Reporting System; TRI = EPA's Toxic Release Inventory

Method of analysis:

We conducted a principal component analysis (PCA) using the "pca" command in the Stata software program. All of the variables listed above were standardized to z-scores with zero means and unit variances to avoid any confounding effects that might arise

from using variables of different magnitudes in the analysis. After conducting the PCA, we retained all of the principal components with an eigenvalue of 1.0 or greater. To facilitate the interpretation of the components, we conducted a Varimax rotation of the six components with a Kaiser normalization. After computing the six component measures for each census tract, we then standardized each variable to z-scores with zero means and unit variances. Each component was then multiplied by the variance it captures from the total input matrix and the weighted components were added together to form the index. To ensure that the index can be compared to other indices, the resulting aggregated values to z-scores with zero means and unit variances.