

*Solid Waste Disposal Area / Landfill Sites*

A landfill, in its most basic form, is a discrete area of land or pit where municipal solid waste (“garbage”) is buried under soil for decomposition. Landfill gas is emitted from the breakdown of organic waste in landfills. It is made up of around half methane, half carbon dioxide (CO<sub>2</sub>), and a minor quantity of non-methane compounds. Methane is a powerful greenhouse gas contributing to climate change that traps heat in the atmosphere 28 to 36 times more effectively than CO<sub>2</sub> over a 100-year period (U.S. EPA, 2022.)

There are [active landfills](#) in Connecticut that are permitted to receive municipal solid waste, bulky waste, industrial waste, and special waste. Examples of special waste that may be suitable for disposal at a landfill include: water treatment, sewage treatment or industrial sludges and solids; fly-ash, casting sands or slag; contaminated dredge spoils; asbestos; and residue (e.g., ash from the combustion process at resource recovery facilities). Presently there are no landfills in Connecticut that are receiving/disposing of municipal solid waste or asbestos. The State of Connecticut tracks landfill activity to mitigate the number of landfills as part of an effort to utilize an integrated waste management hierarchy system (CT DEEP, 2022).

Although there is limited investigation on the adverse health effects from exposure to properly managed landfill sites (Mattiello et al., 2013), some research has shown an increased potential health risk to individuals living near landfills, such as poor air quality in a disproportionately Black North Carolina community (Heaney et al., 2011). International studies have documented adverse health effects from living near landfills, such as lung cancer in Italy (Mataloni et al., 2016), birth defects in Wales (Palmer et al., 2005), and negative respiratory issues for children in China (Yu et al., 2018). Improperly managed landfills can potentially result in the contamination of groundwater that leads to drinking water sources (Vinti et al., 2021). In addition, residents living downwind of landfills may experience significant odor problems (Palmiotto et al., 2014).

**Indicator** This indicator represents the tracts ranked by their percentile proximity to solid waste disposal areas, including, but not limited to, a landfill that contains ash, construction and demolition debris or solid waste.

**Data Source** [Active Landfills](#) 2020, and Affecting Facilities 2021

**Method**

Landfill locations spreadsheet was provided by DEEP and geocoded. From each point, buffers of 250m, 500m, 750m, and 1000m were established, intersecting these buffers with the adjacent census tracts.

Buffer weights were determined based on their proximity to the each site. Those within 250 meters were assigned a weight of 1, those within 250-500 meters received a weight of 0.5, tracts within 500-750 meters were assigned a weight of 0.25, and a weight of 0.1 was given for tracts within 750-1000 meters. Tracts beyond the 1000-meter radius were

assigned a weight of 0, i.e., not close to the pollution source. The cumulative weight score was then computed by adding up the weights of each buffer located within each census tract.

The corresponding percentile for each census tract was designated based on these total weight scores. The percentiles are normalized into impact rank scores between 0 (least impacted) to 10 (most impacted). The map was segmented into ten equally sized sections between the 0 and 10. When there are a lot of census tracts with No Data (weight assigned 0, i.e. not close to the pollution source) is available, the rank range table do not display ten equally sized rank ranges. The value in the table below represents the sum of site proximity weights for each census tract.

| Min Value | Max Value | Min Percentile | Max Percentile | Min Rank | Max Rank |
|-----------|-----------|----------------|----------------|----------|----------|
| 0         |           |                | 0              | 0        | 1        |
| 0.1       | 2         | 93.29          | 99.77          | 9        | 10       |

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