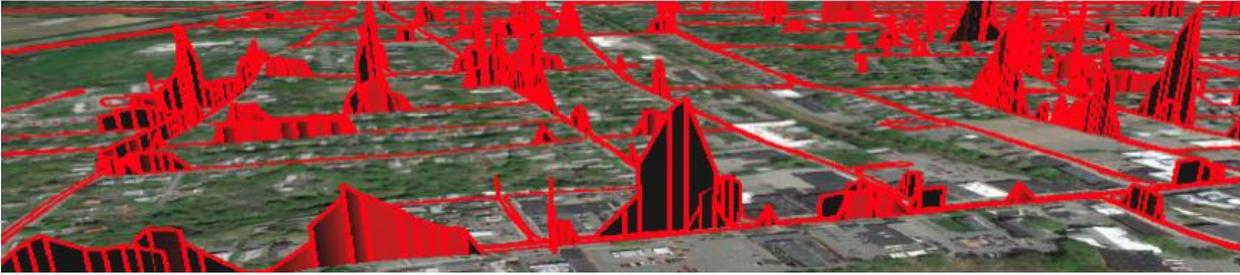


Greenfield Natural Gas Leak Report



Introduction: In 2016, Gas Safety, USA, conducted a study of gas leaks in Greenfield. Following is a summary of a report on the findings written by HEET (Home Energy Efficiency Team) with advice from Boston University Professor Nathan Phillips and Bob Ackley of Gas Safety, USA.

Natural gas leak facts:

- **Gas leaks are potentially explosive.**
- **Gas leaks harm human health.** Natural gas (methane) increases ground-level ozone that increases asthma and other respiratory diseases.
- **Gas leaks suffocate trees** by reducing the amount of oxygen around the roots. (The City of Brookline is currently suing National Grid for \$1,000,000 in damage to city trees.)
- **Gas leaks are a powerful greenhouse gas.** They are 86 times more damaging to the climate than CO₂ over the next 20 years.
- **Gas leaks are paid for by the ratepayer.** Gas utility companies factor the lost gas into the price per therm delivered.

Greenfield Findings:

- **Number of leaks:** 50 leaks were identified by Gas Safety, USA. For comparison Berkshire Gas reported 36 unrepaired leaks to the MA Department of Public Utilities, Dec. 2015. In general, independent researchers tend to find a lot more leaks than utilities do, 1.7 times on average.
- **Frequency of leaks:** At 50 leaks, there are 0.018 leaks per gas-heating household in Greenfield. The median number for Mass. municipalities is 0.013 per household. Per linear mile of road, there are 0.3 leaks in Greenfield. The median number for Mass. municipalities is also 0.3 per mile.
- **Trees:** Although no work was done to assess damage to trees in Greenfield, the MAPC/HEET 2016 survey in 15 different municipalities found that 20% of all gas leaks touch upon or encompass the root ball of a tree, with a portion of those trees showing visible damage/die back.
- **Location of the leaks:** Our Report can be dragged and dropped into Google Earth to see where the leaks are. The leaks appear to be fairly evenly dispersed through the urbanized area.
- **How much gas is lost:** The 2015 Harvard/BU study suggests that 1.35% of all the gas sold in the state is lost through leaks in underground pipes. Berkshire Gas sells 103,102,220 therms of gas per year with Greenfield accounting for 8.64% of Berkshire Gas sales. Thus, it's likely that 120,258 therms are lost per year in Greenfield.
- **Super-emitting leaks** tend to be 5% of the leaks identified, and they tend to emit over 24,000 therms per year, valued at \$25,000. Therefore, Greenfield could have 2 to 3 leaks **costing customers \$50,000-\$75,000/year**. The average repair cost for a leak is \$3,000. In 2016 MA passed a law that mandates that leaks of "significant environmental impact" must be fixed on an accelerated schedule.
- **Average leaks:** In addition to the cost of gushers, normal leaks tend to release an average of 1,200 therms per year, which, at \$1.08 per therm, would cost ratepayers \$1,367 annually.

Actions Suggested by HEET:

- **Increase infrastructure coordination with utility:** Encourage Berkshire Gas and the Greenfield Dept. of Public Works to enact the Best Practices guide in FixOurPipes.org. Some of the best practices can save money for Greenfield and Berkshire Gas, while decreasing disruption from street work and the amount of gas lost through leaks. Perhaps most importantly, request a map of leak-prone infrastructure in Greenfield. All these leak-prone pipes will need to be replaced within the next 20 years, so this map can be considered a 20-year priority list for the utility. Using it, Greenfield can create integrated infrastructure repair in town.
- **Pass a local ordinance** that would increase the coordination between municipality and utility and set a time line to repair gushers, and other leaks as soon as possible; improve reporting on gas leaks; reduce cost and disruption from repairs; and help the municipality assess tree damage.
- **Routinely check tree pits for natural gas** in the soil before planting. A Bascom Turner Combustible Gas Indicator costs about \$2,500. If there is natural gas found in a tree pit, work with the utility to get the leak fixed before the tree is planted.
- **Support statewide regulations on leaks of “significant environmental impact”:** Legislation to fix natural gas leaks was passed in MA in 2016, but it was not adequate. Contact your state representatives and let them know of the urgency to fix all natural gas leaks as soon as possible for our health and safety, and to reduce methane, a powerful greenhouse gas.

Greening Greenfield’s proposed actions

1. **Hold a public meeting** about natural gas leaks in general, Greenfield data collected by Gas Safety, USA, and discuss suggested actions.
2. **Suggested actions for discussion:**

Overall goals: Increase health and safety; reduce gas costs; avoid disruption associated with unscheduled gas leak repairs; and avoid climate change emissions and negative impact on trees.

 - a. Share Greenfield’s Gas Safety, USA report with Berkshire Gas and Greenfield DPW.
 - b. Berkshire Gas accelerate repairing leaks and set a time line to repair leaks in 5 years instead of 10, along with a full disclosure of leak locations:
 - i. Class 1 leaks (most dangerous) be repaired within 6-12 months.
 - ii. Class 2 leaks be repaired in the next 3 years.
 - iii. Class 3 leaks be measured for size, and repaired within 1-5 years depending on size.
 - iv. Berkshire Gas keep Greenfield customers informed of gas leaks and repairs.
 - c. Coordinate repairs with Greenfield’s sidewalk and street repair schedule: DPW already informs Berkshire gas of its intent to dig up a street or sidewalk area with the understanding that Berkshire Gas will replace gas lines during that time to save disruption, time and money. We recommend that Greenfield compare this Gas Safety, USA study with Greenfield sidewalk rebuilding schedule, and adjust schedule as needed.
 - d. Trees: Get a map of the location and age of all gas lines in Greenfield. Keep upgraded gas lines out of tree belts that are more than 3’ wide and/or get a written statement from Berkshire Gas that trees can be planted above new gas lines.
 - e. Consider passing an ordinance to achieve the goals and actions above.

For more information request full report from Greening Greenfield and go to HEET website.
<http://www.mapc.org/mapc-heet-release-report-gas-leaks>