

The Commonwealth of Massachusetts  
Executive Office of Health and Human Services  
Department of Public Health  
250 Washington Street, Boston, MA 02108-4619

**Public Health Assessment:**  
**Evaluation of Cancer, 1982–2000, and Environmental Concerns Related to the Old Colony  
Railroad Site and Alloy Castings Company  
East Bridgewater, Plymouth County, Massachusetts**

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**QUESTIONS AND ANSWERS**

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1. **Q. Why was a study of cancer and community environmental concerns conducted in East Bridgewater, Massachusetts?**
  - A. Concerns about possible environmental exposures in relation to the Old Colony Railroad (OCRR) site, a former manufacturing facility located at the corner of West Union Street and Cook Street in East Bridgewater, and cancer were expressed by local health and legislative officials, as well as East Bridgewater residents. Concerns about cancer also included the Ashley Drive neighborhood and possible environmental exposures related to Alloy Castings Company, an active aluminum foundry located at 151 West Union Street.
  
2. **Q. How was the study conducted?**
  - A. A Public Health Assessment (PHA) was prepared by the Massachusetts Department of Public Health (MDPH) in part under a cooperative agreement with the U.S. Agency for Toxic Substances and Disease Registry (ATSDR). The assessment of cancer incidence was prepared by the MDPH Bureau of Environmental Health (BEH) and followed a standard peer-reviewed protocol for conducting descriptive investigations that was approved for use in 1992. In addition to reviewing information from the Massachusetts Cancer Registry (MCR) and available environmental data, the most current relevant scientific, medical, and epidemiological literature regarding chemical toxicity and risk factors for the development of cancer was also considered.
  
3. **Q. How was cancer evaluated?**
  - A. Cancer incidence data from 1982–2000 were obtained for East Bridgewater from the MCR, a division of the Bureau of Health Information, Statistics, Research and Evaluation within the MDPH. The 19-year period 1982–2000 is the period for which the most recent and complete cancer incidence data were available at the time this analysis was conducted. Cancer incidence rates were calculated for East Bridgewater as a whole and for the three census tracts (CTs) that comprise the town. See attached Figure 1 for a map showing the area of analysis.
  
4. **Q. Did the study review cancer patterns at the neighborhood level?**

A. Yes. The CT is the smallest geographic area for which cancer rates can be accurately calculated because it is the smallest area for which accurate population counts by age group and gender are available. In addition, a qualitative evaluation of the geographic pattern of individuals diagnosed with cancer at the neighborhood level was also conducted. This involved examining the address reported for each individual diagnosed with cancer to assess any possible concentrations of diagnoses in any one neighborhood.

**5. Q. What types of cancer were evaluated and why?**

A. The eight cancer types evaluated in this investigation were leukemia, non-Hodgkin's lymphoma (NHL), and cancers of the bladder, brain and central nervous system (CNS), breast, kidney, liver, and lung and bronchus. These cancer types were selected for evaluation based on residents' concerns about suspected elevations in some cancer types in East Bridgewater and potential associations with contaminants of concern identified at the OCRR site [primarily arsenic, lead, and polychlorinated biphenyls (PCBs)].

**6. Q. What environmental data were evaluated?**

A. The MDPH contacted the Massachusetts Department of Environmental Protection (MDEP) and the U.S. Environmental Protection Agency (U.S. EPA) to obtain and review available environmental data for the OCRR site. Information regarding other potential sources of environmental exposure located in East Bridgewater and listed with the MDEP as a location of a hazardous material or oil release (i.e., "21E sites") was also reviewed. Because there were no available environmental data related to Alloy Castings Company, the evaluation of community concerns related to the company was limited to a qualitative evaluation of the geographic pattern of cancer diagnoses in nearby neighborhoods.

**7. Q. How did the MDPH evaluate residents' opportunities for exposure to contamination from the OCRR site?**

A. Using available environmental data, the MDPH identified contaminants used at the OCRR site that might be present in air, water, or soil and could possibly affect health. Then, an exposure pathway analysis was conducted to evaluate the potential ways that individuals living near or visiting the OCRR site could come in contact with contaminants from the site in the past, present, and future and whether health effects would be expected.

**8. Q. What did the study reveal about cancer incidence in East Bridgewater?**

A. In general, cancer incidence rates for East Bridgewater as a whole and the three CTs that comprise the town were generally near the rates expected for the 19-year time period, 1982–2000. None of the cancer types thought to be associated with contaminants of concern identified at the OCRR site were statistically significantly elevated in CT 5231, the CT where the OCRR site, Alloy Castings Company, and the Ashley Drive neighborhood are located. Leukemia was statistically significantly elevated among females in the town of East Bridgewater as a whole from 1988 to 1993; however, no apparent geographic concentrations of cases were noted and a variety of different

leukemia subtypes were represented, which indicated the occurrence of different diseases.

**9. Q. Did the investigation suggest that the OCRR site, Alloy Castings Company, or another environmental source played a primary role in cancer incidence in East Bridgewater?**

A. In general, review of the geographic distribution of cancer revealed no unusual spatial patterns or concentrations of diagnoses at the neighborhood level that would suggest a common factor (environmental or non-environmental) played a primary role in cancer diagnoses among residents of East Bridgewater. In addition, no unusual geographic concentrations of individuals diagnosed with cancer were observed in the vicinity of the OCRR site, Alloy Castings Company, or Ashley Drive.

**10. Q. If the pattern of cancer near the OCRR site is not unusual, does that mean there are no environmental concerns associated with the site either in the past, present, or future?**

A. No. Although no unusual cancer patterns seem to have resulted from exposure opportunities to contaminants from the OCRR site, potential exposure to vinyl chloride volatilizing to indoor air may be possible for some Spring Street residents if contamination is present in shallow groundwater beneath homes at levels similar to those detected onsite in 1988. Unfortunately, based on the available environmental data, it was not possible to assess this potential exposure pathway at the time our investigation was conducted. An additional environmental concern is that construction and utility workers might have contact with onsite subsurface soil contaminants if future redevelopment or land use changes result in subsurface activities on the site.

**11. Q. Does the MDPH recommend additional follow-up to address these environmental concerns at the OCRR site?**

A. Yes. In order to address a data gap regarding unknown offsite groundwater conditions and potential opportunities for exposure to vinyl chloride in indoor air, the MDPH recommends that the MDEP work to identify a Potentially Responsible Party(s) that could conduct additional assessment of the potential for the presence of vinyl chloride in shallow groundwater to the south of the OCRR site. The MDPH also recommends that future redevelopment or land use changes that result in subsurface activities be undertaken using proper health and safety precautions in order to minimize potential exposure to subsurface soil contaminants.

**12. Q. Will the MDPH conduct any follow-up activities related to the OCRR site?**

A. Yes. If requested, the MDPH will review and comment on any proposed plan for assessing the potential for the presence of vinyl chloride in shallow groundwater to the south of the OCRR site. In addition, the CAP will continue to monitor cancer incidence in East Bridgewater through city/town cancer incidence reports published by the MCR.

13. **Q. Where can I obtain a copy of the report, *Public Health Assessment: Evaluation of Cancer, 1982–2000, and Environmental Concerns Related to the Old Colony Railroad Site and Alloy Castings Company, East Bridgewater, Plymouth County, Massachusetts?***

A. The full report is available under “Environmental Health Investigations” on the MDPH/BEH website at [http://www.mass.gov/dph/environmental\\_health](http://www.mass.gov/dph/environmental_health). In addition, a copy of the report is available at the East Bridgewater Public Library.

14. **Q. Who should I contact for more information?**

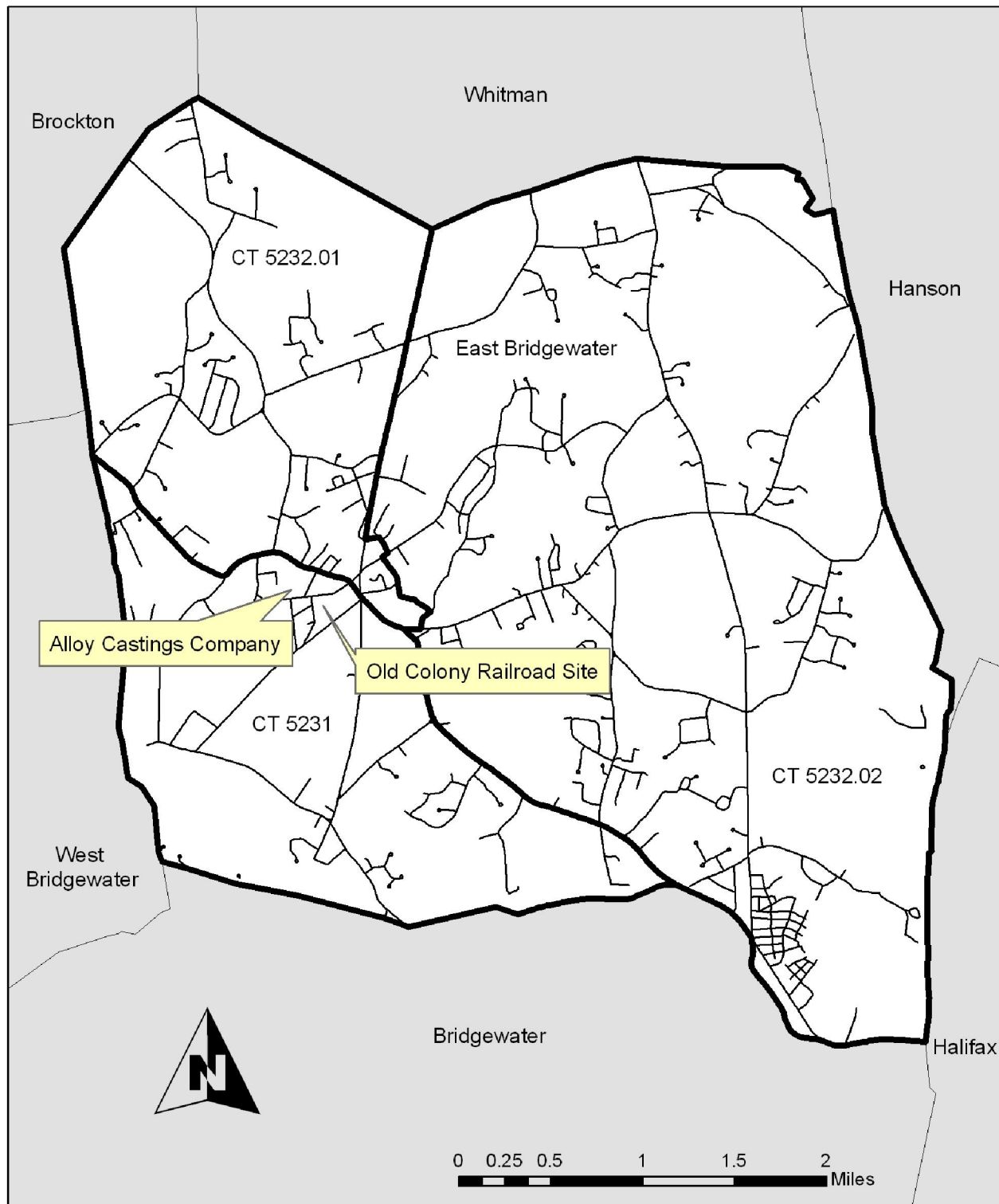
Massachusetts Department of Public Health  
Bureau of Environmental Health  
Attn: Community Assessment Program  
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Boston, MA 02108

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[http://www.mass.gov/dph/environmental\\_health](http://www.mass.gov/dph/environmental_health)

Figure 1  
 Location of Census Tracts  
 East Bridgewater, Massachusetts




  
 Geographic data supplied by:  
 Massachusetts Executive Office of Environmental Affairs, MassGIS;  
 Geographic Data Technology, Inc.; U.S. Bureau of the Census.

	Road
	Census Tract (CT)
	Town Boundary

