MASSACHUSETTS ENVIRONMENTAL PUBLIC HEALTH TRACKING

COMMUNITY PROFILE FOR:

New Bedford

Promoting environmental public health for the protection of health and wellness and the reduction of risks in our air, food, water, soil, and housing for all residents of the Commonwealth.

About Environmental Public Health Tracking (EPHT)

The Massachusetts Department of Public Health EPHT program has assembled profiles to provide a snapshot of environmental health for Massachusetts communities.

What information is inside this community profile?
Data for several health and environmental topics are presented in this profile, as well as population information. Terms that might be unfamiliar are in **bold** and defined in a glossary at the end of the profile. For more details about the data displayed here, about the EPHT program, or for more health and environmental data in your community, please visit our website at http://www.mass.gov/dph/matracking

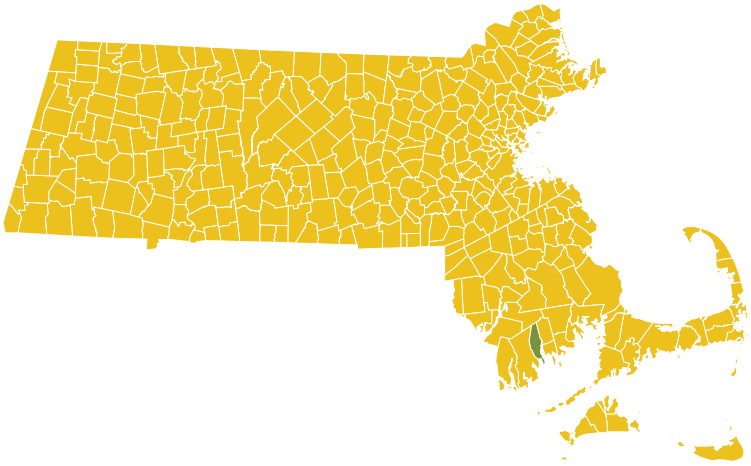
Who can use this community health profile, and what can they use it for?
The community health profiles can be used by anyone who would like to know about environmental public health in Massachusetts communities. Profiles can be used to gather data, guide public health actions, identify high-risk groups, shape policy decisions, or simply inform the curious.

What is environmental public health?
The word "environment" produces images of the outdoors – trees, grass, and other parts of the natural world. In the field of environmental public health, the environment also includes the man-made spaces that surround us every day – our homes, neighborhoods, schools, and workplaces – all of which contribute to our health.

How can the environment impact my health?
In several ways! Some examples include runny noses and itchy eyes from pollen allergies that occur each spring, asthma attacks triggered by air pollution, and health problems in young children due to consuming old lead-based paint chips and dust.

Why track environmental public health?
Monitoring different health topics over several years allows us to see trends over time and helps public health scientists better understand how the environment can impact our health.

New Bedford's Geography



Total Area

20.4 square miles

Office of Geographic Information (MassGIS), 2005

Total Population

95,072 people

U.S. Census, 2010

Percent of Land Use

Agriculture - **0.4%**
Forest - **32.0%**
Open space - **6.9%**
Recreation - **2.8%**
Urban - **56.6%**
Water - **1.3%**

Office of Geographic Information (MassGIS), 2005

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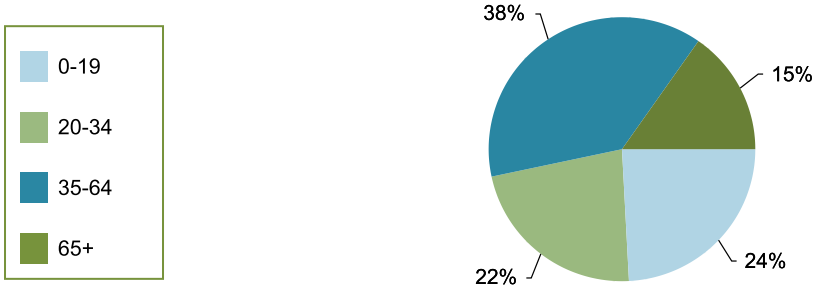
New Bedford's Population

Some people are more vulnerable to the negative effects of different **environmental hazards** than others. For example, the effects of lead poisoning are worse in young children. This is why it is important to not only collect data about the environmental health of an area, but also understand the **sociodemographic** makeup of a community. Population characteristics are important to know because they can help a community learn about the needs of its residents, and better target public health messages and programs.

Demographics

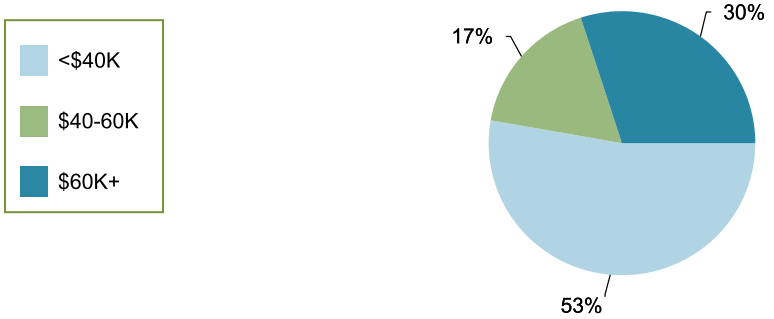
Age



Population breakdown by age
U.S. Census American Community Survey (ACS), 5-year estimates, 2015

Think about all the different health needs of older and younger populations. Older adults are more likely to have many different preexisting health conditions that may be complicated by environmental hazards, while young children have growing bodies that are more sensitive to environmental pollutants.

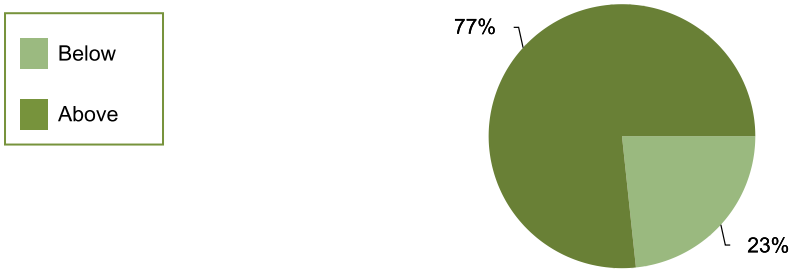
Income



Distribution of household income
U.S. Census American Community Survey (ACS), 5-year estimates, 2015

Median household income is the total amount of money made by people who live together, who may or may not be related to each other.

Poverty



Percent of households below the poverty line
U.S. Census American Community Survey (ACS), 5-year estimates, 2015

Poverty status for a household is determined by the income and makeup of that household.
A household is "below the poverty line" if the total household income falls below a value set by the federal government. This value changes according to household size and ages of household members, and is updated every year.

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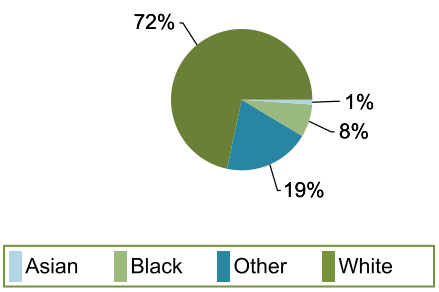
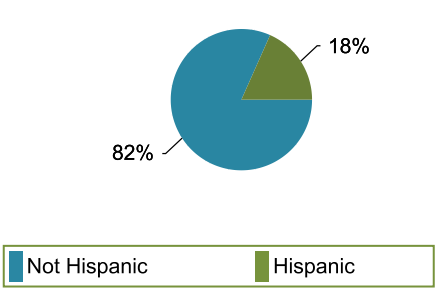
Race



Population breakdown by racial groups
U.S. Census American Community Survey (ACS), 5-year estimates, 2015

Ethnicity



Population breakdown by ethnic groups
U.S. Census American Community Survey (ACS), 5-year estimates, 2015

Race refers to sets of physical characteristics like skin color, while ethnicity refers to sets of shared cultural, social, or linguistic characteristics. Race and ethnic categories are not mutually exclusive. For example, someone can be of Hispanic ethnicity, but of white or black race.

Environmental Justice (EJ)

People who are members of minority racial and ethnic groups, and people who are poor, may face more environmental burdens in their neighborhoods. According to the U.S. Centers for Disease Control, members of these populations are more likely to live near toxic waste sites, in areas with high air pollution, and in substandard housing. Furthermore, these populations might have difficulty accessing health resources.

New Bedford: 69.6 %

Statewide: 12.1 %

Percentage of population residing in a block group where one or more of the EJ criteria is met, compared to the average percentage for all MA communities, calculated using data from the 2010 U.S. Census and the EOEEA.

The principle of **environmental justice** was developed to address this inequality. This principle states that all people, regardless of income or race, have the right to fair treatment and equal involvement in environmental issues, and the right to live in environmentally healthy neighborhoods.

The Massachusetts Executive Office of Energy and Environmental Affairs (EOEEA) defines environmental justice neighborhoods as **census block groups** where at least one of the following is true:

- Median annual household income is at or below 65% of the statewide median income;
- 25% or more of the residents are a minority; or
- 25% or more of the residents are not fluent in the English language.

EJ neighborhoods where more than one criteria are met may be the most vulnerable to environmental and health hazards. To find out more about environmental justice populations and your community, visit the Executive Office of Energy and Environmental Affairs EJ webpage at: http://www.mass.gov/eea/agencies/massdep/service/justice/.
For more detailed information about how EJ neighborhoods are defined, visit the glossary.

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New Bedford's Health

The environment can contribute to the development of **chronic disease**. Chronic illnesses are some of the most common, expensive, and avoidable health problems.

Some links between chronic disease and the environment are well understood – it is common knowledge that smoking cigarettes can cause lung cancer. However, many links between chronic disease and the environment are not well understood. It is very difficult to determine the true cause of an illness. Individual genetics, the natural and built environment, and lifestyle can all play a role in determining whether or not a person develops a chronic disease.

Childhood Lead Poisoning

Lead paint in older homes is the most common source of lead poisoning. Chipping and peeling paint, and paint disturbed during home remodeling, can release lead dust which is then inhaled or consumed. Lead can cause damage to the brain, kidneys, and nervous system; slow growth and development; and create behavioral problems and learning disabilities in children. The use of lead in household paint was banned in 1978, but lead paint applied before the ban is still present in many older homes across the Commonwealth.

Lead Screening

Statewide: 76%

Percentage of children 9 to <48 months screened for lead

MDPH BEH Childhood Lead Poisoning Prevention Program (CLPPP), 2015

State and federal regulations are in place to monitor children's lead levels, which are detected with a blood test. Massachusetts requires all children to be tested 3 times by the age of 3 (and again at age 4 if they live in a high-risk community).

Confirmed Blood Lead Levels (BLL)

Rate is above the state

Statewide: 3.6

5-year average annual rate per 1,000 children 9 to <48 months with confirmed BLL >= 10 µg/dL

MDPH BEH Childhood Lead Poisoning Prevention Program (CLPPP), 2011 - 2015

CLPPP considers a child with a confirmed blood lead level of 10 **micrograms per deciliter** (µg/dL) or more as elevated and requiring a public health intervention.

Lead in Homes

Statewide: 71%

Percentage of housing units built before 1978

U.S. Census American Community Survey (ACS), 5-year estimates, 2015

The Massachusetts Lead Law requires that homeowners delead homes built before 1978 that have lead paint where any children under the age of six live. Deleading means that lead hazards in the home such as peeling lead paint are covered or removed. If you have questions about having your home inspected for lead, locating a licensed deleader, or understanding the Lead Law, contact the CLPPP at 1-(800) 532-9571.

Do you live in a high risk lead community? A community is considered high risk for childhood lead poisoning based on the number of old houses it has in stock, the percent of low to moderate income families and the number of first time elevated blood lead levels over the past five years. All cities and towns are reassessed for lead risk annually.

Based on these factors, **New Bedford was considered a high risk lead community** for 2014.

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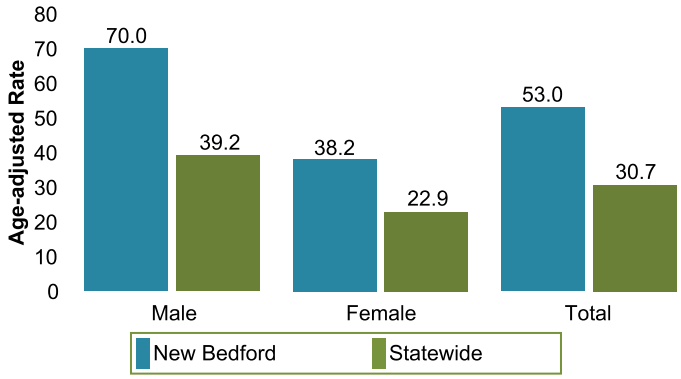
Heart Attack

While risk factors for having a heart attack include obesity, smoking, and high cholesterol, exposure to air pollution, specifically ozone or particulate matter, can also increase risk.

Heart attack hospitalizations are tracked for adults over age 35. Hospitalization data are presented in **age-adjusted rates** per 10,000 people.

Heart Attack Hospitalizations



Age-adjusted rate per 10,000 people
Massachusetts Center for Health Information and Analysis (CHIA), 2012

Asthma

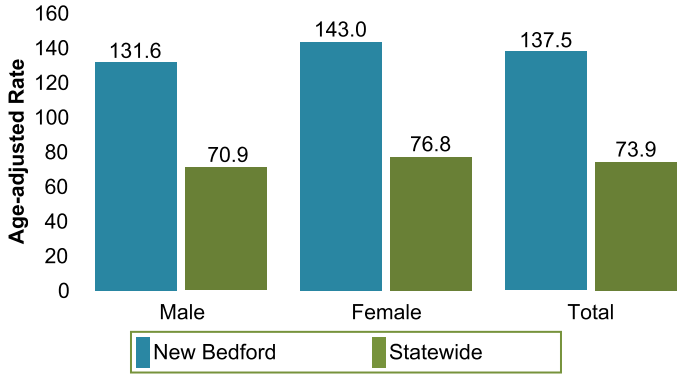
Asthma attacks can be triggered by environmental pollutants and asthmagens like cigarette smoke. This illness is more common in children than adults and is increasing in **prevalence**.

Asthma hospitalization is tracked for people of all ages who visit the emergency department of a hospital for an asthma-related reason. Hospitalization data are presented in age-adjusted rates per 10,000 people.

Asthma prevalence in Massachusetts is also tracked among children from the time they enter kindergarten (K) through the 8th grade. Prevalence is expressed as a percentage of all children enrolled in these grades.

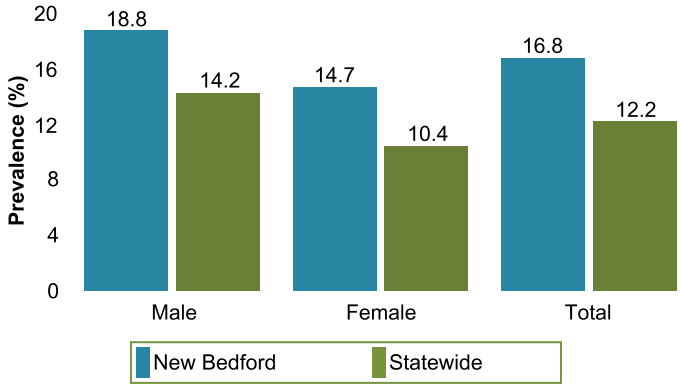
The Indoor Air Quality (IAQ) Program evaluates indoor environmental quality in public schools at the request of the public. For more information about school assessments or to find out if an assessment has been conducted at a school in your community, visit www.mass.gov/dph/iaq.

Asthma Emergency Department Visits



Age-adjusted rate per 10,000 people
Massachusetts Center for Health Information and Analysis (CHIA), 2012

Pediatric Asthma Prevalence in K-8 Students



Rate per 100 K-8 students
MA Department of Public Health (MDPH) Bureau of Environmental Health (BEH), 2014-2015 school year

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New Bedford's Environment

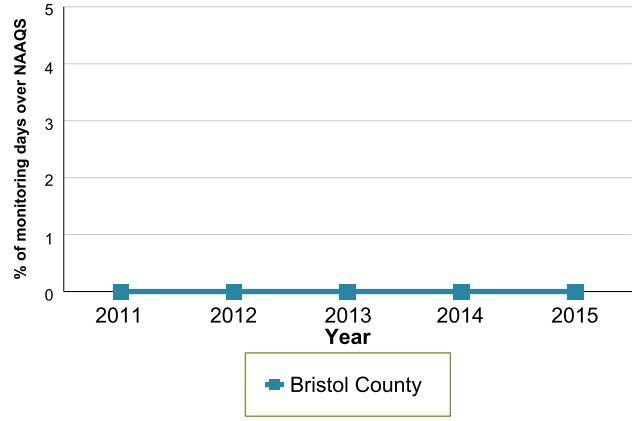
The air we breathe and the water we drink can sometimes be impacted by pollutants, which may come from historical sources, accidental releases, manufacturing processes or even regular activities like driving a car. The state and federal governments are responsible for setting standards and guidelines for environmental pollutants; ensuring that monitoring of those pollutants takes place; and taking action if there is a violation. The degree to which a person might be impacted by an environmental hazard is extremely variable and depends on many factors. Age and individual health status might play a role, as well as the length of time of exposure to the hazard and the amount of the hazard present.

Air Quality

Exposure to air pollution can contribute to heart or lung illnesses, particularly for people at-risk because of preexisting heart or lung disease. Air pollution can aggravate asthma or other respiratory ailments, or trigger heart attacks. The U.S. EPA establishes limits on air pollution levels to protect public health, including the health of at-risk populations. These limits, called **National Ambient Air Quality Standards (NAAQS)**, apply to widespread pollutants including ozone and fine particles. Currently, EPHT air quality measures are available for counties with monitoring stations, which are maintained by the Massachusetts Department of Environmental Protection (MassDEP).

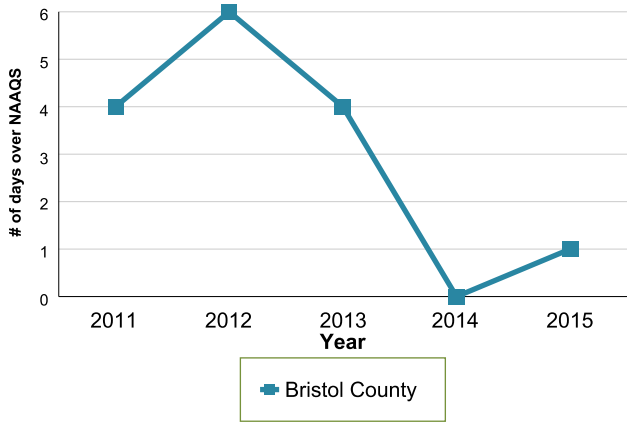
In 2015, Bristol County had 1 day with ozone levels above the 8-hour NAAQS of 0.075 ppm and 0% of monitoring days of PM2.5 levels above the 24-hour NAAQS of 35 µg/m3.

Fine Particles (PM2.5)
Percent of days where the 24-hour PM2.5 daily concentration exceeded the NAAQS of 35 µg/m3



MassDEP Air Assessment Branch (AAB), 2011 - 2015

Ozone (ppm)
Number of days where the 8-hour ozone level exceeded the NAAQS of 0.075 ppm



MassDEP Air Assessment Branch (AAB), 2011 - 2015

Fine **particulate matter** or PM2.5 refers to a mixture of extremely small airborne particles. PM2.5 is displayed here as the percent of monitored days when concentrations were above the NAAQS over a 24-hour period.

Ozone is a colorless gas. This measure reflects the number of days in a year that ozone concentrations exceeded the NAAQS over an 8-hour period.

"No Data" is displayed when the monitoring station did not capture a minimum amount of days of data.

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Drinking Water Quality

The U.S. EPA sets limits for acceptable and safe levels of contaminants in drinking water, and the MassDEP Drinking Water Program is responsible for monitoring and enforcing those limits. The EPHT program has information available for nine contaminants.

Most people in Massachusetts drink water from a public **community water system**. Providers are responsible for testing water and reporting test results to the MassDEP. Contact your town water department or water provider to obtain a copy of current test results.

Some people have private wells on their properties that provide drinking water. Those individuals are responsible for testing their own well water to ensure it is safe for drinking.

It is important to track the water quality of community water systems. Health effects from potential contaminants will depend on the pollutant, the amount ingested, how it was ingested (for example, if the polluted water was introduced into the body by drinking or skin absorption) and the sensitivity of the individual.

Contaminants tracked by EPHT:

Arsenic
Atrazine
DEHP
Disinfection Byproducts
Lead
Nitrates
PCE
TCE
Uranium

Have a private well?

Visit MA DEP for drinking water testing recommendations

Of the nine contaminants tracked by EPHT there have been no violations reported for water systems that service New Bedford.

MassDEP Drinking Water Program, 2009 - 2013

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Climate Change

Massachusetts is already experiencing the effects of climate change, from hotter summers to rising sea levels. These effects will have consequences for the health of many people across Massachusetts. With evidence suggesting that effects of climate change will be most directly felt at the local level, MDPH is working with local health partners to prepare for the health threats and challenges posed by a changing climate in their community.

MDPH is implementing CDC's Building Resilience Against Climate Effects (BRACE) framework to help communities better prepare and respond to potential climate-related impacts. EPHT data can inform strategies to: 1) better understand links between climate and health; 2) identify vulnerable populations or areas; 3) identify interventions to reduce potential health impacts; and 4) support local planning efforts.

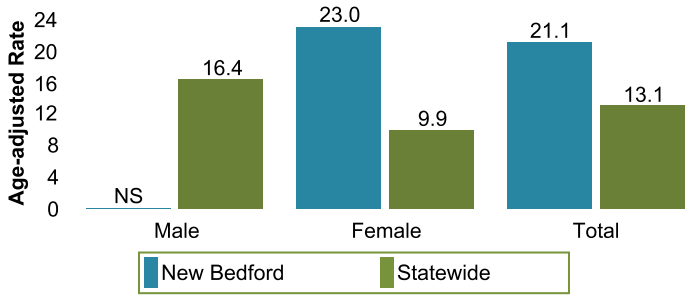
The information provided below gives an example of how data from the MA EPHT program website can help communities in preparing for extreme heat-related events. You can read more about BRACE on our website's .climate change page

Understanding the Climate and Health Link: Extreme Heat-Related Events

Tracking Links between Climate and Health

One predicted impact of climate change is an increase in the number of days over 90 degrees. More days of extreme heat increase the number of residents at risk for experiencing heat stress, the effects of which include fatigue, cramps, dehydration and heat stroke. EPHT tracks the number of emergency room visits for heat stress in each community in Massachusetts.

Heat Stress Emergency Department Visits

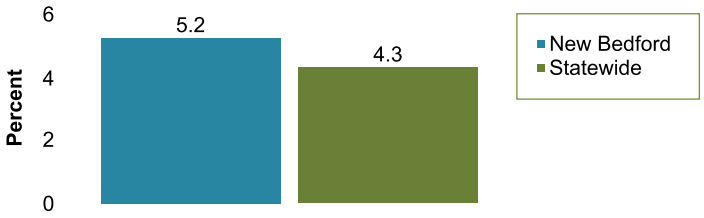


Age-adjusted rate per 100,000 people
Massachusetts Center for Health Information and Analysis (CHIA), 2012

Tracking Vulnerable Populations

Studies of deaths during extreme heat events found that older adults, especially those living alone, are more vulnerable. EPHT provides a vulnerability mapping tool that displays this measure and other demographic data for each community.

Percent of Population over 65 Living Alone

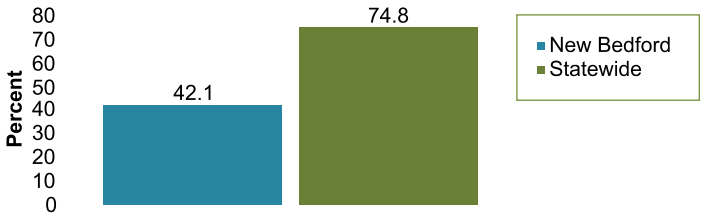


U.S. Census American Community Survey (ACS), 5-year estimates,

Identifying Possible Interventions

Green space decreases overall outdoor temperature because trees and shrubs can provide shade. Green space is measured as the percent of land in the town devoted to agriculture, forest, open space, and recreation. EPHT provides percent of green space in each community in the vulnerability mapping tool.

Percent Green Space



Calculated using data from the Office of Geographic Information (MassGIS), 2005

Supporting Intervention Planning Efforts

In this example, interventions can be implemented to monitor and communicate risk to the elderly who are living alone during times of extreme heat, improve access to cooling centers, and support longer-term efforts to reduce the impact of increasing temperature by creating more green space, especially where vulnerable populations are located.

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What You Can Do

There are many ways to minimize the impacts of environmental hazards to your health and the health of your family.

- Get tested: Have your home tested for *radon* (1-800-RADON95) and for the presence of *lead* paint, especially if you live in a house or apartment built before 1978 (1-800-532-9571); if you drink *private well water*, regularly have your water tested for contaminants.
- Read labels and follow instructions when using household chemicals.
- Wash fruits and vegetables before consuming, and follow fish consumption advisories.
- *Monitor air pollution levels* and avoid strenuous activity when pollution levels are bad, especially if you have asthma.
- Maintain your car so it burns fuel oil efficiently, and take public transportation if possible.
- Avoid cigarette smoke and *quit if you are a regular smoker* (1-800-QUITNOW).
- Maintain overall good health by staying active and eating healthy foods.

Learning about environmental public health in your community is the best place to start. Together, we can work toward healthier communities.

About the Data

Data presented on this profile are collected by many different partners of the MA EPHT Program and are the most up-to-date data available for each topic. For more information about the data visit http://www.mass.gov/dph/matracking.

Demographics: US Census Bureau, American Community Survey (ACS), 5-year estimates, 2010 https://www.census.gov/programs-surveys/acs

Geography: Office of Geographic Information, Commonwealth of Massachusetts, MassIT, 2005 http://www.mass.gov/anf/research-and-tech/it-serv-and-support/application-serv/office-of-geographic-information-massgis/

Environmental Justice: Office of Geographic Information, Commonwealth of Massachusetts, MassIT, 2010 http://www.mass.gov/anf/research-and-tech/it-serv-and-support/application-serv/office-of-geographic-information-massgis/datalayers/cen2010ej.html

Asthma prevalence: MDPH BEH, 2014-2015 school year http://www.mass.gov/dph/asthma

Hospitalization: Massachusetts Center for Health Information and Analysis (CHIA), 2012 http://www.chiamass.gov/

Childhood lead poisoning: MDPH BEH Childhood Lead Poisoning Prevention Program (CLPPP), 2015 http://www.mass.gov/dph/clppp and United States Census Bureau, 2015 http://www.census.gov/

Air quality: MassDEP Air Assessment Branch, 2011 - 2015 http://www.mass.gov/eea/agencies/massdep/air

Drinking water quality: MassDEP Drinking Water Program, 2009 - 2013 http://www.mass.gov/eea/agencies/massdep/water/drinking

Climate change: MDPH BEH and U.S. Centers for Disease Control (CDC) http://www.cdc.gov/climateandhealth/brace.htm

Contact Us

We appreciate your comments, suggestions, and questions. You may send an email to the MA EPHT program at MA-EPHT@State.MA.US. We can also be reached at 1-800-319-3042. Please leave a voicemail if calling after office hours.

Did you know? The MA EPHT program is part of a national network of state and local health departments committed to tracking environmental public health.

Acknowledgements

This program was made possible thanks to the U.S. Centers for Disease Control and Prevention grant for the Maintenance and Enhancement of the State and National Environmental Public Health Tracking Network.

Glossary

Age-adjusted rate - A statistical method applied to the rates of a disease in a population that allows comparison among populations with different age distributions; also known as age-standardized rate.

Census block group - A geographic area used by the U.S. Census. Block groups are smaller than census tracts and usually hold between 600 to 3,000 people.

Chronic disease - A chronic disease is an illness that is persistent over time. According to the U.S. Centers for Disease Control and Prevention, chronic diseases are among the most prevalent, expensive and preventable diseases.

Community Water System (CWS) - Any water system that provides water for human consumption through pipes or other constructed conveyances to at least 15 service connections or serves an average of at least 25 people for at least 60 days a year.

Confirmed Blood Lead Level - A confirmed blood lead specimen is either a single venous blood lead specimen of any value, or the highest confirmed value of two or more capillary blood lead specimens >=10 µg/dL drawn within 12 weeks of each other.

Deciliter (dL) - A metric measure of capacity that is 1/10th of a liter.

Environmental hazard - A substance or situation in the environment that might adversely affect human health. People can be exposed to physical, chemical, or biological toxins from various environmental sources through air, water, soil, and food.

Environmental Justice (EJ) - The fair treatment and meaningful involvement of all people regardless of race, national origin, color, or income when developing, implementing, and enforcing environmental laws, regulations, and policies. Fair treatment means that no group of people, including a racial, ethnic, or socioeconomic group, should bear more than its share of negative environmental impacts.

Median - The median is the number in a data set that separates the upper half of the data in the data set from the lower half.

Micrograms (µg) - Unit of measure for weight/mass equal to one-millionth of a gram used to measure the concentration of pollutants in the air.

National Ambient Air Quality Standards (NAAQS) - Standards established by U.S. EPA that apply to outdoor air throughout the country.

Ozone - There are two types of ozone—“good” ozone and “bad”, ground-level ozone. Good ozone occurs high in the atmosphere and forms a layer that deflects harmful ultraviolet (UV) rays, preventing them from reaching the Earth. Bad ozone is an odorless, colorless gas that is created by a chemical reaction and can affect health.

Particulate matter - "Particles" or "particulate matter" are terms used to describe the mixture of solid particles and liquid droplets in the atmosphere. The microscopic solid and liquid particles are of human and natural origin and can vary greatly in size and composition.

Poverty - Poverty status for a household is determined by the income and makeup of that household. A household is “below the poverty line” if the total household income falls below a value set by the federal government. For more information about how the government defines poverty, including tables of poverty thresholds, visit the U.S. Census Bureau’s Poverty webpage (https://www.census.gov/hhes/www/poverty/index.html).

PPM - Parts per million; denotes 1 part per 1,000,000 parts. Used to measure the concentration of ozone in the air.

Prevalence - The proportion of individuals in a population having a disease or condition. Prevalence is a statistic that refers to the number of cases of a disease that are present in a particular population at a given time.

Sociodemographic - A term describing data relating to sociologic and demographic factors.