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## Environmental Risk Factors and Health

- Lead
- Drinking Water Quality
- Outdoor Air Quality
- Healthy Homes
- Healthy Communities



## WORK GROUP ON ENVIRONMENTAL RISK FACTORS AND HEALTH

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## GOAL

*Enhance public health by decreasing environmental risk factors.*

### WHY THIS GOAL IS IMPORTANT

Poor health outcomes resulting from exposure to lead, asbestos, radon, and air pollution have declined in the past decade in the US and Connecticut. These environmental hazards remain important risks, however because of their causal relationship with cancer, cardiovascular disease, respiratory disease, and cognitive and developmental problems, among other health concerns. The prevention, identification, and treatment of environmental risks, the enforcement of healthy housing standards, and the inclusion of health concerns into land planning and use result in both direct improvements in health and substantial cost savings.

## Lead

### Rationale

Lead exposure affects nearly every system in the body. Exposure of children to high levels of lead is associated with adverse health effects, including anemia, kidney damage, colic, muscle weakness, brain damage, and death.<sup>13</sup> Even low levels of lead exposure can have harmful cognitive, developmental, and behavioral effects in children.<sup>14</sup> Lead exposure often is not recognized, because it frequently occurs with no obvious symptoms.

Although elevated blood lead levels among children in Connecticut have declined over the past few decades, disparities persist.<sup>15</sup> Greater proportions of children who are non-Hispanic black, low-income, or who live in homes built before 1960 have elevated blood lead levels. Educating parents, enhancing screening, and reducing exposure to lead contamination are strategies that reduce the health risks of lead poisoning for Connecticut’s most vulnerable children.

**OBJECTIVE ENV-1** Ph1  
 Reduce to less than 3% the prevalence rate of children less than 6 years of age with confirmed blood lead levels at or above the CDC reference value (5 µg/dL).

Target Population(s)	Baseline	2020 Target	Data Source
Children less than 6 years of age who were screened for lead poisoning	3.1% (2,261/73,785 children) (2012)	<3%	Connecticut Department of Public Health, Lead Surveillance System

### Strategies

#### Advocacy and Policy

- Introduce policy that requires medical care providers to give anticipatory guidance to parents for children whose blood lead levels are at or above 5 µg/dL.
- Leverage existing Lead Poisoning Prevention and Control funding allocated to communities for increasing targeted lead poisoning prevention efforts that have been proven effective.

#### Education and Training

- Provide educational materials about reducing exposure to lead hazards to high risk families with children less than 6 years of age.

#### Partnership and Collaboration

- Utilize existing coalitions and collaborations to develop programs to target all children less than 6 years of age and highest risk populations in urban areas.
- Partner with health care professionals to increase their ability to identify, prevent, and reduce environmental health threats, including lead, via technical assistance visits to providers, outreach to hospitals, and course(s) on environmental risk factors for children at the university level, school nurses.
- Partner with health care professionals to establish and enhance case management activities to align with 2012 CDC recommendations for childhood lead poisoning prevention and control.
- Partner with health care professionals to improve provider compliance with mandated lead testing requirements; increasing mandatory lead testing for all children at least 1 time per year until they reach 3 years of age.

*Planning & Development*

- Identify high risk areas (pre 1978 housing with low socio-economic status families) in communities, and develop a plan to reduce exposure to lead-base painted surfaces.
- Explore options for infrastructure/capacity to address lead poisoning, to address abatement or remediation issues effectively in a timely manner.

*Surveillance*

- Develop a program to conduct inspections on units in pre-1978 rental housing; exploring collaborations with HUD inspectors with Healthy Homes inspections.

**Potential Partners**

Connecticut Department of Public Health; State of Connecticut Division of Criminal Justice; Connecticut Department of Energy and Environmental Protection; Connecticut Department of Economic and Community Development; Connecticut Department of Social Services; State Department of Education; Connecticut Department of Administrative Services; Connecticut Department of Children and Families; Connecticut Department of Housing; Office of the Attorney General; local courts; U.S. Environmental Protection Agency; local public health agencies; local housing authorities and departments; housing and urban development agencies; professional associations for public health, housing; occupational health and safety, and the environment; continuing education providers; health insurers; organizations and coalitions focused on environmental health, housing, and real estate; primary care providers and community health centers; other professional associations; community service providers serving children and at-risk populations; regional lead treatment centers; licensed lead abatement and renovation contractors; childcare providers; neighborhood revitalization zones; and others.

## Drinking Water Quality

### Rationale

Safe drinking water is fundamental to good health and comes from a variety of sources including public water systems, private wells, or bottled water. Most water sources in Connecticut meet acceptable health and recreational standards; however, it is important to continuously monitor Connecticut's water supply for exposure to contaminants and ground water pollution, disease causing bacteria, and disruptions to water systems due to major weather events such as storms and floods. Exposure to contaminants can lead to harmful health effects such as cancer, birth defects, and damage to organs, the nervous system, and immune system.<sup>16</sup>

### OBJECTIVE ENV-2 (DEVELOPMENTAL)

Reduce the risk of consumption of unsafe drinking water from ground water sources serving private wells.

### Strategies

#### *Communications*

- Develop a statewide campaign to educate residents about source water protection.

#### *Research and Surveillance*

- Convene a task force to reevaluate the capabilities of the MAVEN database to collect private well data upon the pilot's completion, or identify an alternative.
- Establish a surveillance system to collect, maintain and monitor water quality in private wells statewide.

### OBJECTIVE ENV-3 (DEVELOPMENTAL) Ph1

Reduce the risk of waterborne disease outbreaks due to consumption of contaminated drinking water for all ground-water-based, small community public water systems following an emergency situation.

### Strategies

#### *Education and Training*

- Provide free emergency plan training and asset management plan training with technical assistance to all small community public water systems, to increase direct financial, managerial and technical assistance to assure system viability and sustainability.

#### *Planning and Development*

- Offer subsidized Drinking Water State Revolving Fund (DWSRF) loans each year for system infrastructure projects to bring systems into compliance, to increase direct financial, managerial and technical assistance to assure system viability and sustainability.
- Offer subsidized Drinking Water State Revolving Fund (DWSRF) loans each year for system generators, to increase direct financial, managerial and technical assistance to assure system viability and sustainability.

#### *Surveillance*

- Utilize existing enforcement measures to increase compliance of small community public water systems, to increase direct financial, managerial and technical assistance to assure system viability and sustainability.

**Potential Partners**

Connecticut Department of Public Health, State of Connecticut Division of Criminal Justice, Connecticut Department of Energy and Environmental Protection, Connecticut Department of Economic and Community Development, Connecticut Department of Consumer Protection, State Department of Education, Connecticut Department of Administrative Services, Connecticut Department of Housing, Office of the Attorney General, local courts, regional water authorities, federal environmental and geological agencies, local public health agencies, public health professional associations, local water quality agencies, other professional associations concerned with water quality and safety, organizations and coalitions focused on public health and the environment, philanthropic and research organizations that address the environment, and others.

## Outdoor Air Quality

### Rationale

Poor outdoor air quality is one of the greatest environmental threats to human health. Air pollution is associated with premature death, cancer, lung diseases, and cardiovascular disease.<sup>17</sup>

Air quality has continued to improve in Connecticut, but there are still many occasions each year when pollutant levels, measured according to the US Environmental Protection Agency’s Air quality index, endanger the public’s health.<sup>18,19</sup> Improvements in meeting federal clean air standards would save approximately \$193 million in hospital expenditures over a 3-year period.<sup>20</sup>

*“I would like to see DPH do more to address root causes of environmental health problems, i.e., the concentrated pollution of air and water in our urban communities. (New London)”*

**OBJECTIVE ENV-4** Ph1  
Reduce by 10% the average number of days/year the Air Quality Index (AQI) exceeds 50.

Target Population(s)	Baseline	2020 Target	Data Source
Connecticut Overall	149 days/year 8 year average (2005-2012)	134 days/year	Connecticut Department of Energy and Environmental Protection

### Strategies

#### Advocacy and Policy

- Seek to limit the amount of air pollution transported into the state of Connecticut from upwind sources, through legal actions under the Clean Air Act and voluntary actions with other states.
- Work with employers to promote telecommuting, electronic meetings, and other alternatives, to reduce the number of cars on the road on forecasted poor air quality days.
- Advocate for municipalities to increase their use of electric vehicles for their fleets.
- Develop and propose policy (or regulation) on banning outdoor wood burning (i.e., fireplaces, fire pits) and indoor wood burning stoves on forecasted poor air quality days. Exceptions would be for sole sources of heat in heating season.
- Implement regulations that would require outdated wood stoves that do not comply with US EPA standards to be replaced when houses change ownership.
- Provide incentives for and reward behaviors of people, organizations, companies that improve the air quality.

#### Communications

- Publicize the benefits of public transportation in general and as an alternative transportation, to reduce the number of cars on the road on forecasted poor air quality days.
- Increase awareness of the 3-minute vehicle idling law, through driver training curriculum, driver’s license testing, and when renewing licenses and registrations.

#### Partnership and Collaboration

- Enhance existing partnerships with State agencies, universities and private businesses to assess the feasibility of initiating statewide use of “green” technologies (e.g., “green” buildings, renewable energy, energy efficiency, and “green” chemistry) that can help reduce use of energy, water, and other resources and decrease pollution.

*Planning & Development*

- Work with public transportation entities to develop efficient, direct bus routes. Continue to retrofit buses to reduce emissions by installing control devices such as diesel particulate filters, diesel oxidation catalysts, and closed crankcase ventilation systems on diesel-powered engines, to reduce exhaust emissions.
- Promote cleaner vehicle use by installing more electric vehicle charging stations.
- Identify wood burning units of greatest concern and develop a phase-out plan.

*Research*

- Evaluate the public transportation system to identify opportunities to reduce emissions on buses.

*Surveillance*

- Enforce the 3-minute vehicle idling law (pursue ticketing authority).

**OBJECTIVE ENV-5 (DEVELOPMENTAL)**

Increase public awareness of the presence and risks of poor air quality days.

**Strategies***Communications*

- Provide public information and data to encourage sound decision making about outdoor activity on poor air quality days.
- Develop a comprehensive, standardized alert process to alert the public, and specifically reach at-risk populations, in the event of poor air quality.

*Education and Training*

- Develop and implement a plan for education and outreach about poor air quality days for at-risk populations.

*Partnership and Collaboration*

- Encourage schools to develop a list of at-risk children and design specific alternative indoor recess activities for those children on “bad air” days.

*Research, Surveillance*

- Establish baseline measurement of at-risk populations’ level of awareness of forecasted poor air quality days.

(See also strategies under objectives CD-14, CD-15 and CD-16.)

**Potential Partners**

Connecticut Department of Public Health; Connecticut Department of Administrative Services (Division of Construction Services); State Department of Education; Connecticut Department of Energy and Environmental Protection; Connecticut Department of Transportation; Connecticut Department of Motor Vehicles; Connecticut Division of Criminal Justice; Office of the Attorney General; U.S. Environmental Protection Agency; local courts; local public health agencies; housing and urban development agencies; professional associations for public health, health care, business, and housing; schools and municipalities; organizations and coalitions focused on health and the environment; health care providers; community service organizations serving children and underserved populations; childcare providers and after school programs; media; and others.

## Healthy Homes

### Rationale

Housing conditions are critical to health. Substandard housing is linked to lead poisoning, allergens and respiratory diseases such as asthma, and puts residents at risk for injuries. Other issues of concern include exposure to asbestos and radon which increases the risks of lung diseases such as lung cancer.<sup>21</sup> An increase in the number of Healthy Homes inspections, and enforcement of minimum housing code standards, can minimize the health risks caused by substandard housing and exposure to environmental hazards in the home.

### OBJECTIVE ENV-6 (DEVELOPMENTAL)

Increase the enforcement of minimum housing code standards through the collaboration of code enforcement agencies.

### Strategies

#### *Advocacy and Policy*

- Establish incentives for those property owners who comply with new code, such as tax breaks and restricting federal, state and local housing rehabilitation funding to those who comply with the new code.

#### *Communications*

- Develop media or other awareness campaigns to inform property owners of the new code.

#### *Planning and Development*

- Establish/reconvene a task force to revive the discussion and move forward on proposing a minimum statewide housing and property code.
- Establish a statewide minimum housing code for the State of Connecticut.

#### *Research, Surveillance*

- Establish baseline measurement of “sub-standard housing”.

**OBJECTIVE ENV-7**

Increase by 10% the number of Healthy Homes inspections.

Target Population(s)	Baseline	2020 Target	Data Source
Connecticut Overall	45 Initial inspections (2012)	49.5	Connecticut Department of Public Health, Environmental Health Section

**Strategies**

*Advocacy and Policy*

- Advocate for the adoption and use of a statewide standardized Healthy Homes assessment tool to be utilized by all home visit service providers across the state of Connecticut.
- Advocate for funding to support Healthy Homes projects.

*Communications, Education & Training*

- Develop an education/awareness campaign on Healthy Homes for code enforcement officials, utilizing a variety of approaches/methods.
- Develop an education/awareness campaign on Healthy Homes for Connecticut residents, utilizing a variety of approaches/methods.

**Potential Partners**

Connecticut Department of Public Health; Connecticut Department of Administrative Services (Division of Construction Services); Connecticut Department of Economic and Community Development; Connecticut Department of Housing; State Department of Education; Connecticut Department of Energy and Environmental Protection; Connecticut Division of Criminal Justice; Connecticut Department of Consumer Protection; Office of the Attorney General; State Legislature; environmental advocacy organizations; local public health agencies; U.S. Environmental Protection Agency; housing and urban development agencies; other professional associations for public health, health care, housing and architecture; business including banking, energy providers, and realtors; organizations and coalitions focused on health and the environment; health care providers; community service organizations serving children and underserved populations; continuing education providers; lead treatment and prevention centers; academic research institutions focused on health and the environment; and others.

## Healthy Communities

### Rationale

Land use decisions in metropolitan regions, cities, and towns strongly affect the health of those who live there. Safe, accessible roads, sidewalks, recreational areas and parks, bicycle paths and lanes, lighting, and planned development, all can promote healthy living and reduce risk factors for many diseases and conditions. “Health in All Policies” is a strategy that takes into account the health implications of decisions and policies made in sectors that are not traditionally associated with health. Encouraging those who make land-use decisions to incorporate a “health-in-all-policies” approach can ensure that future community development and infrastructure improvements make it easier for all Connecticut residents to adopt healthy, active, lifestyles.

*“When residents are thinking about where to exercise or trying to bike to work there are serious challenges, because our roads are winding and dangerous. We need to find a way to have more sidewalks on the many state roads to help everyone become healthier. (Torrington)”*

### OBJECTIVE ENV-8 (DEVELOPMENTAL)

Increase the number of local planning agencies and others making land-use decisions that incorporate a “health-in-all-policies” approach.

### Strategies

#### Planning & Development

- Create a Healthy Community Model guidance document to assist in land use decision making.
- Convene a work group/task force of key individuals and groups to research existing programs in the US and develop a Healthy Community Model blueprint for Connecticut.
- Establish a list of evidence-based tools that could be used to shape the connection between planning and health.
- Develop a guidance document specific for Connecticut on the value of adopting a Healthy Community Model in planning and zoning decision making.
- Explore the best ways to get towns to adopt the use of a Healthy Community Model in their decision making.

#### Surveillance

- Establish a baseline of local planning agencies and others making land-use decisions that incorporate a “health-in-all-policies” approach.

### Potential Partners

Connecticut Department of Public Health; Connecticut Department of Administrative Services (Division of Construction Services); Connecticut Department of Economic and Community Development; Connecticut Department of Energy and Environmental Protection; Connecticut Division of Criminal Justice; State Department of Education; Connecticut Department of Transportation; Office of Policy and Management; Office of the Attorney General; State Legislature; environmental advocacy organizations; local public health agencies; regional and local planning agencies; housing and urban development agencies; other professional associations for public health, planning, housing, and conservation; business and industry; organizations and coalitions focused on health, historic preservation, and the environment; and others.

