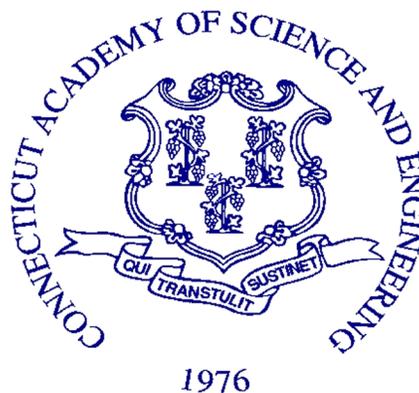


# HEALTH IMPACT ASSESSMENTS STUDY

**AUGUST 2013**

**A REPORT BY**

**THE CONNECTICUT  
ACADEMY OF SCIENCE  
AND ENGINEERING**



**FOR**

**THE CONNECTICUT GENERAL ASSEMBLY**



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THE CONNECTICUT ACADEMY  
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ORIGIN OF INQUIRY: THE CONNECTICUT GENERAL ASSEMBLY

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This study was initiated at the request of the Connecticut General Assembly on October 9, 2012. The project was conducted by an Academy Study Committee with the support of David Pines, PhD, Study Manager and Colleen Ann O'Connor, MPH, Associate Study Manager. The content of this report lies within the province of the Academy's Public Health Technical Board. The report has been reviewed by Academy Members Sten A. Caspersson and Paul R. Skolnik, MD. Martha Sherman, the Academy's Managing Editor, edited the report. The report is hereby released with the approval of the Academy Council.

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## EXECUTIVE SUMMARY

The use of Health Impact Assessments (HIAs) is a relatively new process in the United States that is designed to ensure that often overlooked or unanticipated health impacts are considered in proposed policies, programs, projects or plans. HIAs offer practical recommendations to minimize negative health risks and maximize health benefits, while addressing differential health impacts on vulnerable groups of people. They have been used by decision makers at the federal, state and local levels in a variety of sectors, including agriculture and food, built environment, education, housing, labor and employment, natural resources and energy, and transportation.

### STUDY PURPOSE

The purpose of this study is to provide the Connecticut General Assembly, state agencies, local health departments, regional health districts, and interested parties with information about HIAs for the purpose of assessing their value for use in Connecticut.

### BRIEF STATEMENT OF PRIMARY CONCLUSION

Health considerations are often unintentionally overlooked in the development and implementation of policies in non-health sectors such as transportation, education, energy, housing, and labor. Taking health into consideration in the decision-making process for policies, programs, projects and plans will make Connecticut a healthier place to live, promote a healthy workforce for its businesses, potentially avert unnecessary healthcare costs in the future, and contribute to disease prevention. HIAs use a flexible, yet systematic, analytical process to achieve these goals. Additionally, they provide the basis for making changes to ensure health is appropriately considered during the development of policies, program, projects, and plans, when applicable. The Department of Public Health (DPH) should lead this effort by raising awareness of HIAs, creating demand for the appropriate use of HIAs, and promoting the need for capacity development within the state to effectively conduct and participate in HIAs. The end goal is not just to conduct HIAs, but to use HIAs as a catalyst for integrating public health into the decision-making process throughout all sectors and levels of government.

### STUDY DESCRIPTION AND RESEARCH METHODOLOGY

The study includes the following elements:

- HIA introduction – general information
- Tools and methods used for conducting HIAs
- Use of evidence in the development of HIAs
- Use of HIAs for public policy development
- Relationship of HIAs to and use in conjunction with environmental impact assessments
- Best practices that can serve as models for Connecticut’s use
- Findings based on the research
- Recommendations of the CASE Study Committee

Study research methodology included:

- A literature review
- Interviews with national experts in the field, state leaders, and others
- Input from Connecticut Regional Planning Agencies (RPAs), Local Health Districts and Departments (LHDDs), and academia through a focus group session and survey
- Guest speaker and forum presentations to the CASE Study Committee

## BACKGROUND

The United States is one of the wealthiest countries in the world, yet it ranks 32<sup>nd</sup> in life expectancy. Approximately half of all US adults live with chronic illness and two-thirds are overweight or obese. Connecticut, the wealthiest state in the nation, has the fourth highest per capita healthcare spending rate in the country, with chronic conditions accounting for an estimated 75% of that spending. Solutions to Connecticut's health challenges involve more than simply improving the healthcare system. Researchers have established that other factors, such as social conditions and environment, are responsible for a much greater proportion of poor health outcomes than previously realized. A proactive approach to healthcare based on a broader view of health that includes these factors could result in significant reductions in the need for particular kinds of healthcare.

"Health in All Policies" refers to the practice of integrating the public's health, well-being, and equity considerations into the development and implementation of policies in non-health sectors such as transportation, energy, housing, and labor.<sup>1</sup> The rationale is that, "The full spectrum of health considerations are often unintentionally overlooked in decision making. And their omission can lead to policies and practices that are unnecessarily harmful to people, and costly to society."<sup>2</sup> The use of HIAs has emerged as a "critical tool" to assist decision makers, particularly those in non-health sectors, with implementing a "Health in All Policies" approach and for the purpose of specifically providing guidance for evaluating the health impacts of proposed decisions.

An HIA includes the following essential elements:<sup>3,4</sup>

- Informs decision making on a specific proposed action
- Should be conducted prospectively, i.e., in advance of a policy decision
- Engages stakeholders in the process
- Utilizes a systematic analytic process for assessment of potential health impacts
- Ensures that health disparities are considered in decision making

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1. Human Impact Partners. "Health in All Policies: An Upstream Approach to Advance Health and Equity." [www.humanimpact.org/component/jdownloads/finish/20/182/0](http://www.humanimpact.org/component/jdownloads/finish/20/182/0)

2. American Public Health Association. Health Impact Assessment (HIA): A Tool to Benefit Health in all Policies. (n.d.) [www.apha.org](http://www.apha.org)

3. Minimum Elements and Practice Standards for Health Impact Assessment. North American HIA Practice Standards Working Group. Version 2. 2010

4. Aaron Wernham, MD, MS, Director, The Health Impact Project, The Pew Charitable Trusts; Presentation to CASE Study Committee, 11/15/12)

- Emphasizes inter-agency collaboration
- Considers a broad view of health including the social determinants
- Offers strategies to mitigate negative health effects and maximize positive health effects
- Uses best available scientific evidence to inform the process
- Establishes baseline conditions for health, describing health outcomes, health determinants, affected populations, and vulnerable sub-populations

An HIA can be scaled to fit the available time and resources of a decision-making process. The various HIA approaches are most often defined as rapid, intermediate, or comprehensive. While these terms are not consistently applied across all HIA practice, they are useful in describing the spectrum of HIA activity, which typically differs in the complexity, duration, level of stakeholder engagement, resources required and methods used.

It is important to emphasize that HIAs are a “pragmatic decision-support tool” and that in order to successfully influence policy, HIAs must operate in the real-world policy-making setting, providing timely information without delaying important decisions and offering analysis based on best-available evidence. In addition, HIA recommendations should be feasible and actionable within the legal purview and policy frameworks of other sectors.

## SUMMARY OF FINDINGS AND RECOMMENDATIONS

### *Findings*

HIAs are a useful emerging methodology in the United States for considering health impacts on a wide range of policy decisions, from social policies to the built environment to transportation. HIAs utilize a systematic analytical process for assessing potential health impacts, ensuring health disparities are considered, establishing baseline health conditions of a community, and offering strategies to mitigate negative and maximize positive health effects. Social and environmental determinants have a strong influence on health outcomes and in order to truly impact the health of the state, these need to be considered in policy and decision making. Presently the state’s approach is designed to react after decisions have been made rather than to proactively seek strategies to maximize health benefits and mitigate negative health effects. More effort is needed to prevent disease and keep people healthy. The added benefit of a proactive health approach to decision making is the potential to reduce the cost of the healthcare system over the long term.

This study found that there is support for adding a broad health perspective into the decision-making process for policies, programs, projects and plans in a broad array of non-health sectors. The study also found that HIAs are a useful tool to ensure health impacts are considered when applied according to practice standards and when recommendations are incorporated into decision making. On the state level there is interest across agencies to incorporate health considerations into decision making in non-health sectors.

A successful HIA program needs the following elements to support the integration of public health into the decision-making process:

- An agency or agencies to provide leadership and support for the use of HIAs.
- HIA programs for training, technical assistance, and mentoring for those that are interested in conducting HIAs.
- Creation of demand for HIAs by raising awareness and educating stakeholders and policy makers about the value of using HIAs.
- Integration of considering health impacts into the culture of organizations and agencies that normally do not consider how their policies, programs, projects, and plans affect health.

Resources, including those related to capacity, funding, staff, and access to data and support for data analysis, are needed to effectively conduct HIAs. Connecticut has unique resources that provide a strong foundation for the use of HIAs. However, shortcomings in these areas need to be addressed to effectively incorporate health considerations into the decision-making process for policies, programs, projects and plans on a sustained and institutionalized basis. These resources and areas of need include the following:

***Capacity:***

Only three HIAs have been completed in Connecticut to date, and DPH and CADH have limited HIA experience. Thus, the following are the essential needs that must be addressed for developing capacity for a sustained HIA program within the state:

- Expertise to conduct HIAs
- Knowledge to manage and/or participate in the HIA process
- Ability to screen proposed decisions as to the appropriateness and need for conducting an HIA
- Ability to conduct HIA training and to develop a network of mentors and technical advisors that are available to assist others interested in or conducting HIAs

***Funding:***

Ongoing state budget constraints provide a challenging environment for state agencies to expand services into new areas, such as for funding HIA projects

***Staff:***

Staff at the state, regional, and local agency levels (i.e., health and human service agencies, as well as non-health based agencies) may need a variety of skill sets and levels of effort depending on their involvement with the HIA process (e.g., conducting, screening, managing, or participating). The following is an overview of resources that may be necessary to support the use of HIAs:

- Legislative: Proposed legislation is currently screened for direct health impacts by the General Assembly's Public Health Committee and DPH, with such legislation then reviewed and commented on during the legislative process, if and when appropriate. Additional staff resources and training may be needed if proposed legislation typically not considered health related is also reviewed to determine if an HIA would be beneficial.

- Health and Human Service Agencies: Agency staff may be involved in screening, conducting, managing, and providing technical assistance. HIA activities align well with the skills of some of the staff, though additional staff time and HIA training would be needed.
- Regional Planning Agencies and Other Agencies: These agencies may be managing programs, projects or plans in which an HIA would be beneficial. Staff need to be aware of the value of using an HIA, trained to incorporate health impacts into the planning and design process, and provided with time to engage in the HIA process.
- LHDDs: There is a wide range of staff resources and skills at the local level, with larger departments and districts likely to be in a better position to support HIA activities, such as data collection and analysis, and to provide expertise on health impacts and health equity issues. However, most LHDDs are not in a position to be the lead on an HIA. Therefore, training would mostly involve raising awareness, knowing the health-related questions to ask, helping to identify policies, programs, projects or plans that would benefit from an HIA, and being familiar with the technical resources in the state that are available to assist with conducting an HIA. It is noted that due to small staff size and limited resources, part-time local health departments may find it more challenging to participate in or support an HIA.

***Data:***

Many data resources are available for use in conducting HIAs, including CADH's Health Equity Index, the DPH Environmental Public Health Tracking (EPHT) data portal, as well as some publicly available Department of Social Services (DSS)/Medicaid Data. Some focus group session participants and individuals interviewed expressed concern about access to data, particularly for data on the census tract/block level, which is helpful for establishing baseline conditions of a community. Additional data support from appropriate state agencies may be necessary. When used appropriately, these data will support health informed decision making. Furthermore, qualitative data can be used when quantitative data is not available.

At the state level, there are already mechanisms in place in Connecticut for the potential implementation of HIAs. For example, proposed legislation is currently reviewed by a variety of legislative committees, state agencies, and stakeholders for numerous reasons. Generally, the Public Health Committee (PHC) of the General Assembly and DPH screen proposed legislation that has the potential for direct health impacts, but do not necessarily screen proposed legislation for its broad effect on health. The National Environmental Policy Act (NEPA) and Connecticut Environmental Policy Act (CEPA) include protection of public health, but the Environmental Impact Statements (EISs) and Environmental Impact Evaluations (EIEs) based on these regulations only include a narrow view of health. Broadening the view of health considered in EISs and EIEs to include social determinants of health would better meet the original intent of the existing legislation.

At the local level, Connecticut's fragmented local health infrastructure will make it more challenging to incorporate HIAs into the decision-making process on a sustained basis. There are 74 separate LHDDs covering the 169 towns in the state. Also, catchment areas for RPAs do not

coincide with LHDD catchment areas. These differences present challenges for the use of HIAs at the local level in Connecticut as compared with other states with county-level government. Findings from the focus group session and interviews indicated that there are misconceptions about the practice of HIA that lead to concerns that HIAs will be used to inhibit implementation of “good” projects or the HIA process will become so burdensome that overall benefits will be negated. However, the findings indicate that these concerns are unfounded, as HIAs when used according to practice standards (including robust screening and scoping procedures) do not result in delaying or stopping projects. The goal of an HIA is not to determine whether a proposed project is good or bad overall, nor whether or not a project should continue. Instead, the focus of an HIA is on maximizing potential health benefits and mitigating potential risks as needed by making appropriate changes in the design or planning of a policies, programs, projects and plans.

An unexpected finding of this study is overall support for incorporating health into decision making by state and regional/local agency leaders beyond just using HIAs. There is interest in changing the culture of agencies through staff training and by engaging public health professionals for the development policies, programs, projects, and plans.

### ***Recommendations***

HIA methodology utilizes a systematic analytical process for assessing potential impacts, uses the best available scientific evidence to inform the process, and offers strategies to mitigate negative health effects and maximize positive health effects. Based on numerous best practice case studies that show the benefit of HIAs, the CASE study committee recommends that HIAs be used in Connecticut, when appropriate. Appropriate use means to apply this decision-support tool only when an HIA will add new information to a deliberation, and when the connections to health are not directly obvious. It also means using the tool only when the assessment can be completed in a timely manner so that the recommendations can be integrated into the decision-making process. The goal is not just to conduct HIAs, but to use HIAs as a catalyst for including health considerations at the decision-making level for policies, programs, projects, and plans.

The specific recommendations of the CASE study committee are as follows:

1. PHC and DPH should assume a leadership role, with the support of the governor’s office, in having health be a consideration in the decision-making process regarding policies, programs, projects, and plans.
2. Establish a multi-agency Health Review Team to develop and oversee utilization of a pre-screening protocol that outlines the appropriate use of HIAs in policies, programs, projects and plans at all levels and for all sectors that would benefit most from the HIA process.
3. Develop pathways for considering health impacts in policies, programs, projects, and plans. When possible, HIAs should be incorporated into existing regulations, mechanisms, and processes. For example, the public health requirement of the EIE process should be broadened to include HIAs as a best practice to meet the requirements of health analysis in NEPA and CEPA. DPH should expand its involvement in the EIE process by not only commenting on health risks from water

supply and specific contaminant issues, but also including a broader view of health impacts. This review should be conducted in consultation with DPH's Environmental Health Section.

4. Develop capacity to carry out HIAs effectively by creating an HIA Resource Center comprising organizations willing to provide support and guidance for those interested in conducting HIAs.
5. Increase state HIA capacity by raising awareness for HIAs, creating demand for the appropriate use of HIAs in decision-making processes, and developing capacity to effectively carry out HIAs. Use of consultants to conduct and lead an HIA should be considered where staff resources and capacity to conduct HIAs is limited.
6. Training is necessary at the state, regional and local levels to create awareness of the HIA process and the ways in which it adds value for decision makers.
7. Initiate a demonstration HIA program (HIA Housing Program and HIA EIE Program) to strengthen the HIA infrastructure and determine the best sustainable approach for the use of HIAs in Connecticut
8. Develop a mechanism to ensure evaluation and monitoring of HIAs completed in the state. Evaluations should provide guidance for the improvement and implementation of an HIA program in Connecticut and an expansion of the demonstration HIA programs into other sectors.

## CONCLUDING REMARKS

Policies, programs, projects and plans that maximize positive health effects and mitigate negative health effects will make Connecticut a healthier place to live for its residents, promote a healthy workforce for its businesses, potentially avert unnecessary healthcare costs in the future, and contribute to disease prevention. HIAs use a flexible, yet systematic, analytical process to achieve these goals and to ensure health is considered during the development of policies, programs, projects, and plans, when applicable.



## 1.0 STUDY BACKGROUND

A Health Impact Assessment (HIA) is most commonly defined as “a combination of procedures, methods and tools that systematically judges the potential, and sometimes unintended, effects of a policy, program, project or plan on the health of a population and the distribution of those effects within the population. An HIA identifies appropriate actions to manage those effects.”<sup>1</sup>

The use of HIAs is a relatively new process in the United States that is designed to ensure that often overlooked or unanticipated health impacts are considered in proposed policies, programs, projects or plans. HIAs offer practical recommendations for ways to minimize negative health risks and maximize health benefits, while addressing differential health impacts on vulnerable groups of people. They have been used by decision makers at the federal, state and local levels in a variety of sectors, including agriculture and food, built environment, housing, labor and employment, natural resources and energy, and transportation. HIAs have been used more extensively in Europe, and have been institutionalized in policy making in some countries.

The purpose of this study is to provide the General Assembly, state agencies, local health departments, regional health districts, and interested parties with information about HIAs for the purpose of assessing their value for use in Connecticut. This study was conducted on behalf of the General Assembly at the request of the Public Health Committee (PHC).

The study objectives include

- Identifying potential uses and benefits of HIAs
- Assessing best practices for implementing HIAs in Connecticut
- Formulating an HIA implementation framework for Connecticut’s use, if the study finds that HIAs have value for use in Connecticut

### 1.1 STUDY DESCRIPTION

The report includes the following:

- HIA introduction – general information
- Tools and methods used for conducting HIAs
- Use of evidence in the development of HIAs
- Use of HIAs for public policy development
- Relationship of HIAs to and use in conjunction with environmental impact assessments
- Best practices that can serve as models for Connecticut’s use
- Findings based on the research
- Recommendations of the CASE Study Committee

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1. Source: 1999 Gothenburg consensus statement, International Association for Impact Assessment (IAIA). Health Impact Practice Principles. IAIA Special Publication Series No. 5. September 2006; [www.iaia.org/publicdocuments/special-publications/SP5.pdf?AspxAutoDetectCookieSupport=1](http://www.iaia.org/publicdocuments/special-publications/SP5.pdf?AspxAutoDetectCookieSupport=1)

## 1.2 STUDY COMMITTEE ACTIVITIES AND RESEARCH METHODOLOGY

The CASE study committee meetings were conducted throughout the study period. The following is a list of organizations that presented at the committee meetings.

- Association of State and Territorial Health Officials
- Connecticut Association of Directors of Health
- Connecticut Department of Public Health, Healthy Homes Initiative
- Massachusetts Department of Public Health
- National Association for State Community Services Programs
- National Center for Healthy Housing
- New Opportunities, Inc. (Connecticut)
- Oregon Public Health Institute
- The Health Impact Project, A Collaboration of the Robert Wood Johnson Foundation and The Pew Charitable Trusts
- Upstream Public Health (Oregon)

Study research included:

- A literature review
- Interviews with national experts in the field, state leaders, and others (Appendix I)
- Input from Connecticut Regional Planning Agencies (RPAs), Local Health Districts and Departments (LHDDs), and academia through a survey (Appendix F: Survey and Appendix G: Survey Results) and a focus group session (Appendix H: List of Focus Group Session Participants)
- Guest speaker and forum presentations to the CASE Study Committee

In accordance with the legislation authorizing this study, Public Act 12-104, §1, the study was conducted in consultation with the Connecticut Agricultural Experiment Station, Department of Agriculture, State Department of Education, Department of Energy and Environmental Protection, Department of Public Health, Department of Public Works, Department of Social Services, and ConnDOT. These agencies were invited to attend all study committee meetings; provided access to study research materials and video recordings of most study committee meetings and guest speakers; and offered the opportunity to provide comments as a “fact check” on the content of the study report. Additionally, the study research team interviewed the staff of several state agencies.

## 2.0 INTRODUCTION

The United States is one of the wealthiest countries globally, yet in terms of health, it ranks poorly compared with other high-income nations. Currently, the United States ranks 32<sup>nd</sup> in life expectancy worldwide<sup>2</sup> and the gap in life expectancy between US adults and those of other high-income countries is growing.<sup>3</sup> The United States also has the highest infant mortality rate, and fares poorly on other measures of infant health, on par with much less developed nations.<sup>4</sup> According to recent estimates, approximately half of all US adults live with chronic illness and two-thirds are overweight or obese.<sup>6</sup> These statistics represent the *average* health outcomes in the United States; however, significant health disparities exist, resulting in considerably worse health consequences for minority, poor and other vulnerable groups in the United States and Connecticut. The United States also faces a challenging future in terms of health. For the first time in decades, the current generation of American youth can potentially expect to live shorter lives than their parents, primarily due to the impact of the obesity epidemic.<sup>7</sup>

It is becoming ever more evident that improving the healthcare system is not the only answer to solving the nation's health problems. Currently, the United States is ranked third globally in total healthcare expenditures.<sup>8</sup> Connecticut, the wealthiest state in the nation,<sup>9</sup> has the fourth highest per capita healthcare spending rate in the country<sup>10</sup> with chronic conditions accounting

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2. Improving Health in the United States: The Role of Health Impact Assessment. Report in Brief. National Academies Press, Washington, D.C. 2000. [www.nap.edu](http://www.nap.edu) © 2011 The National Academy of Sciences. Accessed: [www.afpo.org.uk/resource/item.aspx?RID=110258](http://www.afpo.org.uk/resource/item.aspx?RID=110258)

3. National Research Council and Institute of Medicine. (2013). U.S. Health in International Perspective: Shorter Lives, Poorer Health. Panel on Understanding Cross-National Health Differences Among High-Income Countries, Steven H. Woolf and Laudan Aron, Eds. Committee on Population, Division of Behavioral and Social Sciences and Education, and Board on Population Health and Public Health Practice, Institute of Medicine. Washington, DC: The National Academies Press. [www.nap.edu](http://www.nap.edu)

4. National Research Council and Institute of Medicine. (2013). U.S. Health in International Perspective: Shorter Lives, Poorer Health. Panel on Understanding Cross-National Health Differences Among High-Income Countries, Steven H. Woolf and Laudan Aron, Eds. Committee on Population, Division of Behavioral and Social Sciences and Education and Board on Population Health and Public Health Practice, Institute of Medicine. Washington, DC: The National Academies Press. [www.nap.edu](http://www.nap.edu)

5. Improving Health in the United States: The Role of Health Impact Assessment. Report in Brief. National Academies Press, Washington, D.C. 2000. [www.nap.edu](http://www.nap.edu) © 2011 The National Academy of Sciences. Accessed: [www.afpo.org.uk/resource/item.aspx?RID=110258](http://www.afpo.org.uk/resource/item.aspx?RID=110258)

6. A Potential Decline in Life Expectancy in the United States in the 21st Century. S. Jay Olshansky, Ph.D., Douglas J. Passaro, M.D., Ronald C. Hershow, M.D., Jennifer Layden, M.P.H., Bruce A. Carnes, Ph.D., Jacob Brody, M.D., Leonard Hayflick, Ph.D., Robert N. Butler, M.D., David B. Allison, Ph.D., and David S. Ludwig, M.D., Ph.D. *N Engl J Med*, 352;11, [www.nejm.org](http://www.nejm.org) March 17, 2005.

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10. Kaiser Family Foundation. State Health Facts, 2009. Retrieved from [www.statehealthfacts.org/comparemaptable.jsp?ind=596&cat=5](http://www.statehealthfacts.org/comparemaptable.jsp?ind=596&cat=5)

for an estimated 75% of that spending.<sup>11</sup> In recent years it has been reported that only about 10% of preventable mortality in the United States can be addressed by improved access and quality of medical care.<sup>12</sup> Other factors, such as social conditions and environment, known as the social and environmental determinants of health, are responsible for a much greater proportion of poor health outcomes than previously realized.

The need to consider the health consequences of public policies outside of the health sector, such as in transportation, education, housing and labor policies, is now broadly recognized. In 2010, the World Health Organization (WHO) published the “Adelaide Statement on Health in All Policies”<sup>13</sup> (HiAP) (Appendix A), which outlined the importance of considering health and health equity in all policy making; however, policy makers in these sectors have often lacked the data, tools and training required to understand and address health impacts through policy.<sup>14</sup> The practice of considering the impacts of health and equity in all relevant policies can be approached through various means, such as using health impact assessments (HIAs) to systematically examine and mitigate potential health consequences of policies outside of the health sector.

This study comes at an opportune time, as the state is putting into practice new statewide health policy initiatives, such as implementing the Affordable Care Act (ACA), creating the Health Insurance Exchange, establishing Patient-Centered Medical Homes and fostering widespread use of electronic health records, among other best practices for health. This study outlines the potential of HIAs to be utilized as another tool for improving the health of Connecticut’s citizens by ensuring that health impacts of policies not directly related to health issues, programs, projects or plans are also considered in policy making.

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11. Centers for Disease Control and Prevention. (2009). Chronic disease prevention and health promotion. Retrieved from [www.cdc.gov/chronicdisease/resources/publications/AAG/chronic.htm](http://www.cdc.gov/chronicdisease/resources/publications/AAG/chronic.htm)

12. The Case For More Active Policy Attention To Health Promotion. J. Michael McGinnis, Pamela Williams-Russo, and James R. Knickman. *Health Affairs*, volume 21, no.2 (2002):78-93

13. Adelaide Statement on Health in All Policies; WHO, Government of South Australia; Adelaide 2010 (See Appendix A)

14. Health Resources in Action. “Health Impact Assessment a Basic Guide.” Policy and Practice Report. (n.d.); [hria.org/uploads/catalogerfiles/hia-policy-and-practice-report/HRiA\\_HIA\\_Guide.pdf](http://hria.org/uploads/catalogerfiles/hia-policy-and-practice-report/HRiA_HIA_Guide.pdf)

## 3.0 HIA OVERVIEW

### 3.1 HISTORY OF HIAS

The WHO's Gothenburg Statement of 1999 is considered to be the primary document outlining the purpose, underlying values and core elements of an HIA.<sup>15</sup> The use of HIAs has been adopted as common practice much faster in other countries (e.g., Australia, Canada, Germany and other European Union countries, New Zealand, Sweden, and United Kingdom) and the United States is considered far behind in comparison.<sup>16</sup> The use of HIAs has been institutionalized into government policy making in some European Union countries and has been required for World Bank International Finance Corporation development loans since 2006.<sup>17</sup>

The use of HIAs arose out of the Environmental Impact Statement (EIS) practice, which requires systematic review of the environmental and health impacts of major proposed government projects and programs. Historically, EISs rarely include a specific analysis on health, such as the social conditions that can affect health, though they indirectly address health by comparing expected air quality, water quality, and waste disposal impacts to EPA standards as required by federal or state law; they also include a review of environmental justice impacts. HIAs arose as a tool to address the need for guidance and standards for use by practitioners to assess the broad range of health impacts of proposed policies, programs, projects and plans.

Over the past few decades the use of HIAs has evolved considerably. HIAs may be incorporated into EISs or completed as an independent and parallel process to an EIS. Today, HIAs are more often used for a wider array of policies, programs, projects and plans which do not require an EIS. The first known HIA in the United States, conducted at the request of a city council member on a proposed "Living Wage" ordinance, was completed in 1999 by the San Francisco Department of Public Health.<sup>18</sup> However, in the United States the practice did not immediately take hold; only 27 HIAs had been completed through 2007 (Figure 1). The field has grown rapidly since then, with over 238 known HIAs either completed or currently in progress in the United States as of April 2013 (Figure 2).

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15. Prospective health impact assessment: pitfalls, problems, and possible ways forward Jayne Parry, Andrew Stevens. *Environmental Impact Assessment Review*. 20 (2000) 627-645. *BMJ VOLUME 323 17*; November 2001; [www.bmj.com](http://www.bmj.com); [www.journals.elsevier.com/environmental-impact-assessment-review](http://www.journals.elsevier.com/environmental-impact-assessment-review)

16. American Public Health Association. *Health Impact Assessment (HIA): A Tool to Benefit Health in all Policies*. (n.d.); [www.apha.org](http://www.apha.org)

17. Aaron Wernham, MD, MS, Director, The Health Impact Project, The Pew Charitable Trusts; Presentation to CASE Study Committee, 11/15/12)

18. Aaron Wernham, MD, MS, Director, The Health Impact Project, The Pew Charitable Trusts; Presentation to CASE Study Committee, 11/15/12)

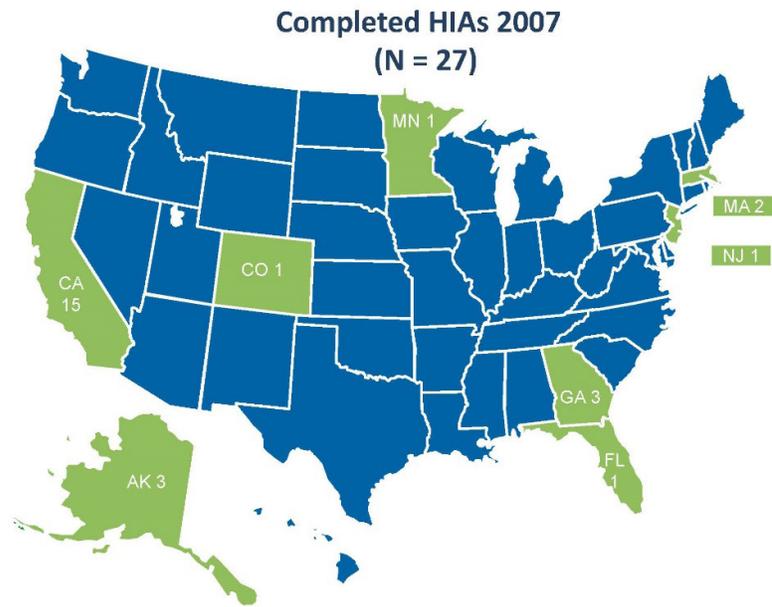


FIGURE 1: COMPLETED HIAs 2007  
(SOURCE: AARON WERNHAM, MD, MS, DIRECTOR, THE HEALTH IMPACT PROJECT, THE PEW CHARITABLE TRUSTS; PRESENTATION TO CASE STUDY COMMITTEE, 11/15/12)

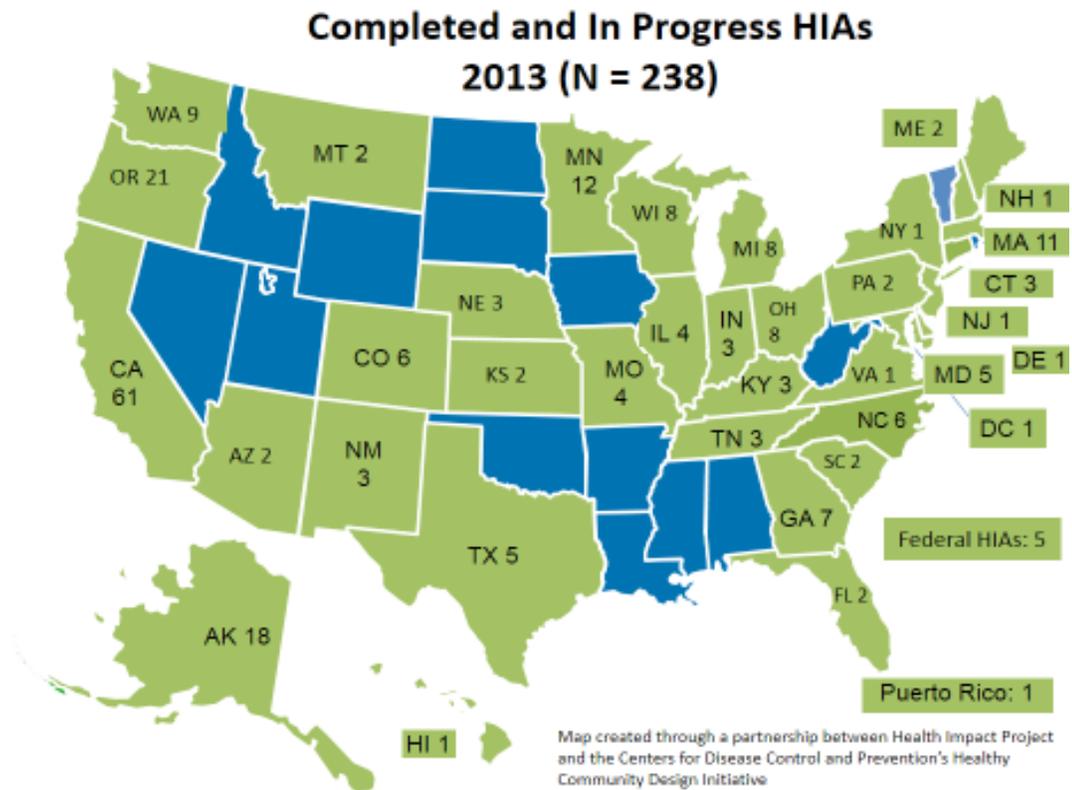


FIGURE 2: COMPLETED AND IN PROGRESS HIAs 2013  
(SOURCE: AARON WERNHAM, MD, MS, DIRECTOR, THE HEALTH IMPACT PROJECT, THE PEW CHARITABLE TRUSTS; PRESENTATION TO CASE STUDY COMMITTEE, 11/15/12 - UPDATED 4/24/13)

### 3.1.1 *Health in All Policies*

“Health in All Policies” refers to the practice of integrating the public’s health, well-being, and equity considerations into the development and implementation of policies in non-health sectors such as transportation, energy, housing, and labor.<sup>19</sup> The rationale is that, “The full spectrum of health considerations are often unintentionally overlooked in decision making. And their omission can lead to policies and practices that are unnecessarily harmful to people, and costly to society.”<sup>20</sup> In the United States, the need to consider the health consequences of public policies outside of the health sector is increasingly recognized in the public health field, yet is a newer concept in other sectors. The use of HIAs has emerged as a critical tool to assist decision makers, particularly those in non-health sectors, with implementing a “Health in All Policies” approach and for the purpose of specifically providing guidance for evaluating the health impacts of proposed decisions.

A “Health in All Policies” approach may utilize a range of activities and tools to craft policy that promotes health, with HIAs considered the “gold standard.”<sup>21</sup> Sometimes, however, policy-makers or community stakeholders desire input on the health implications of a proposed policy, program, project or plan, but determine that an HIA is not appropriate or desired. In these cases, related activities, or only select elements of HIAs, may be used to provide feedback on potential health impacts of a proposed decision.<sup>22</sup> Using a “Health in All Policies” approach to policy making ensures consideration of health and equity in a broad array of contexts, including when the resources to conduct an HIA are not available.<sup>23</sup> One organization, Human Impact Partners, suggests a range of activities that may be used in a “Health in All Policies” approach (see Table 1).

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19. Human Impact Partners. “Health in All Policies: An Upstream Approach to Advance Health and Equity.” [www.humanimpact.org/component/jdownloads/finish/20/182/0](http://www.humanimpact.org/component/jdownloads/finish/20/182/0)

20. American Public Health Association. Health Impact Assessment (HIA): A Tool to Benefit Health in all Policies. (n.d.) [www.apha.org](http://www.apha.org)

21. [www.humanimpact.org/health-in-all-policies-projects](http://www.humanimpact.org/health-in-all-policies-projects)

22. Human Impact Partners. “Health in All Policies: An Upstream Approach to Advance Health and Equity.” [www.humanimpact.org/component/jdownloads/finish/20/182/0](http://www.humanimpact.org/component/jdownloads/finish/20/182/0)

23. [www.humanimpact.org/health-in-all-policies-projects](http://www.humanimpact.org/health-in-all-policies-projects)

**TABLE 1: “HEALTH IN ALL POLICIES” ACTIVITIES CONDUCTED BY HUMAN IMPACT PARTNERS EXAMPLES**  
(SOURCE: ADAPTED FROM HUMAN IMPACT PARTNERS:  
[WWW.HUMANIMPACT.ORG/HEALTH-IN-ALL-POLICIES-PROJECTS](http://WWW.HUMANIMPACT.ORG/HEALTH-IN-ALL-POLICIES-PROJECTS) )

<b>“Health in All Policies” Activities Conducted by Human Impact Partners Examples</b>
• Writing comment letters on planning documents and Environmental Impact Reviews (EIRs)
• Integrating health into planning processes including neighborhood/area plans, transit-oriented development plans, zoning updates, Master Plans, and development plans
• Developing and using health and equity indicators in land use, housing and transportation contexts
• Conducting research on social and environmental conditions (as related to health) in the context of project, planning, and policy decision making
• Writing existing conditions reports using health, social, and environmental data in the context of decision-making processes
• Developing a scope of potential impacts and integrating it into decision-making processes
• Providing institutional support for agencies and organizations who want to integrate a health and/or equity perspective into their work or the work of other agencies and organizations (e.g., by providing research, community engagement, and/or facilitation)
• Applying specialized assessment tools (e.g., walkability surveys) within planning contexts
• Integrating health language into Request for Proposals (RFPs) and developing health-related grant scoring criteria
• Offering a health perspective in the policy development process
• Conducting a less formal health critique of proposed policies
• Providing process-related services such as facilitation, consensus-building, community engagement, and relationship-building across agencies to advance any of the above activities

Throughout this report, “Health in All Policies,” the overarching policy strategy from which HIAs have evolved, will be referenced.

The theoretical basis for “Health in All Policies” dates back to the 1978 Declaration of Alma Ata that urged the health sector to look beyond the role of acute medical care in improving a population’s health and called for “a comprehensive health strategy that not only provided health services but also addressed the underlying social, economic and political causes of poor health.”<sup>24</sup> The Declaration of Alma Ata was written with the understanding that the remarkable improvement in life expectancy in the developing world in the past century was largely due to improvements in “social, environmental and economic living and working conditions.”<sup>25</sup> Alma

24. Implementing Health in All Policies: Adelaide 2010. (2010). Eds. Ilona Kickbusch, Dr Kevin Buckett. Published by the Department of Health, Government of South Australia.

25. Implementing Health in All Policies: Adelaide 2010. (2010). Eds. Ilona Kickbusch, Dr Kevin Buckett. Published by the Department of Health, Government of South Australia.

Ata also called for “intersectoral action for health,” which is defined as collaboration between health and non-health sectors to achieve improved health outcomes.<sup>26</sup>

The theory has evolved into the current “Health in All Policies” approach promoted by the WHO. In 2010, WHO published the “Adelaide Statement on Health in All Policies”<sup>27</sup> that stresses the need for all government sectors to include health and well-being as a consideration in policy making. This approach is based on the recognition that the key determinants of health and well-being are socially and economically formed, and are primarily influenced by policies outside of the health sector.<sup>28</sup> Many now refer to this as an upstream approach, i.e., treating “the causes of the causes” of poor health.<sup>29</sup> The “Health in All Policies” approach also calls for a “new role for the health sector” to, “engage systematically across government and with other sectors to address the health and well-being dimensions of their activities. The health sector can support other arms of government by actively assisting their policy development and goal attainment.”<sup>30</sup>

A “Health in All Policies” approach necessitates that the health sector take the lead in encouraging improvements in public health. This involves exploring “potential opportunities for collaboration and innovation” across sectors and requires that health sectors work in conjunction with non-health sectors. This also entails mutual commitment and willing collaboration on the part of other sectors as “Public health agencies alone cannot assure the nation’s health.”<sup>31</sup> The National Prevention Council’s 2011 National Prevention Strategy embraces a “Health in All Policies” approach.<sup>32</sup> The strategy mandates that 17 federal agencies collaborate and coordinate on opportunities for prevention, health and wellness in policy and programs and states that HIAs can be used to enable the accomplishment of the strategy’s key goal of building healthy and safe community environments.<sup>33</sup>

### **3.2 HIA SECTORS: “HEALTH IS THE RESPONSIBILITY OF ALL SECTORS”**

An underlying tenet of HIAs is that communities will realize substantial improvements to population health if health impacts are taken into account when developing policies, programs, projects or plans, especially in sectors that have historically been regarded as unrelated to health.<sup>34</sup> HIAs have been completed in over twenty sectors in the United States, with the majority having been completed in Built Environment (37%), Transportation (20%), Natural Resources and Energy (13%), Housing (9%) and Agriculture and Food (7%) (Appendix B).

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26. Implementing Health in All Policies: Adelaide 2010. (2010). Eds. Ilona Kickbusch, Dr Kevin Buckett. Published by the Department of Health, Government of South Australia.

27. Adelaide Statement on Health in All Policies. WHO, Government of South Australia, Adelaide 2010. Adelaide Statement on Health in All Policies. WHO, Government of South Australia, Adelaide 2010.

28. Implementing Health in All Policies: Adelaide 2010. (2010). Eds. Ilona Kickbusch, Dr Kevin Buckett. Published by the Department of Health, Government of South Australia.

29. Adelaide Statement on Health in All Policies. WHO, Government of South Australia, Adelaide 2010.

30. Adelaide Statement on Health in All Policies. WHO, Government of South Australia, Adelaide 2010.

31. Institute of Medicine, 2002. The Future of the Public’s Health in the 21st Century

32. [www.surgeongeneral.gov/initiatives/prevention/strategy/index.html](http://www.surgeongeneral.gov/initiatives/prevention/strategy/index.html)

33. [www.cdc.gov/nceh/ehs/Docs/JEH/2012/July-Aug\\_Wendel-HIA.pdf](http://www.cdc.gov/nceh/ehs/Docs/JEH/2012/July-Aug_Wendel-HIA.pdf)

34. Improving Health in the United States: The Role of Health Impact Assessment. Report in Brief. National Academies Press, Washington, D.C. 2000; [www.nap.edu](http://www.nap.edu), © 2011 The National Academy of Sciences; Accessed: [www.apfo.org.uk/resource/item.aspx?RID=110258](http://www.apfo.org.uk/resource/item.aspx?RID=110258)

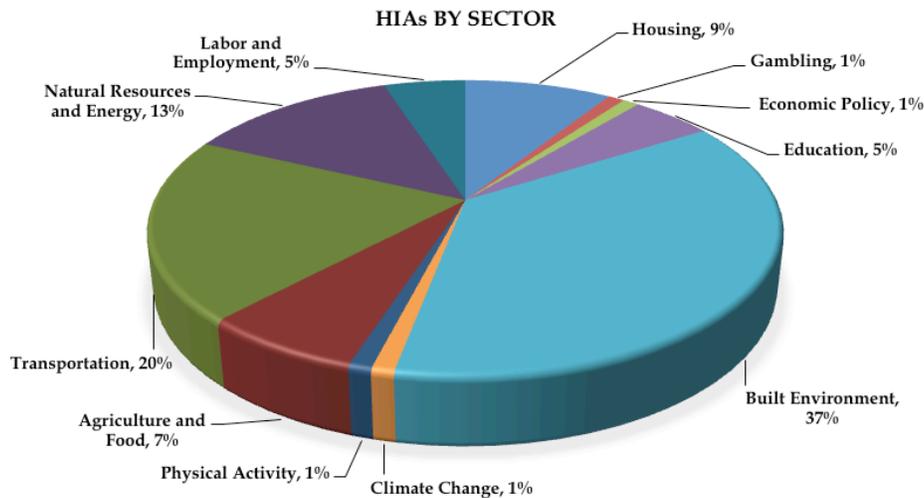


FIGURE 3: HIAs BY SECTOR  
(SOURCE: AARON WERNHAM, MD, MS, DIRECTOR, THE HEALTH IMPACT PROJECT, THE PEW CHARITABLE TRUSTS; PRESENTATION TO CASE STUDY COMMITTEE, 11/15/12)

### 3.3 STANDARDIZATION OF HIA PRACTICE AND ESSENTIAL ELEMENTS OF HIA

The field and practice of HIAs have evolved considerably. The landmark Gothenburg Consensus Statement in 1990 first outlined the core concepts, values and suggested standards for HIAs. As the field has grown in the United States, HIAs have been conducted with a wide degree of variability in methods and practice, partly due to the diversity of sectors, decision types and practice settings in which HIAs have been conducted, and also due to an early lack of formal practice standards. Concerns regarding a lack of standards and consistency in the field led to the eventual establishment of a working group in 2009 that defined “minimum elements” of an HIA and developed National Practice Standards (Appendix C) for US practitioners.<sup>35</sup>

Currently, an HIA includes the following essential elements:<sup>36,37</sup>

35. Minimum Elements and Practice Standards for Health Impact Assessment. North American HIA Practice Standards Working Group. Version2. 2010

36. Minimum Elements and Practice Standards for Health Impact Assessment. North American HIA Practice Standards Working Group. Version2. 2010

37. Aaron Wernham, MD, MS, Director, The Health Impact Project, The Pew Charitable Trusts; Presentation to CASE Study Committee, 11/15/12)

- Informs decision making on a specific proposed action.
- Should be conducted prospectively, i.e., in advance of a policy decision
- Engages stakeholders in the process
- Utilizes a systematic analytic process for assessment of potential health impacts
- Ensures that health disparities are considered in decision making
- Emphasizes inter-agency collaboration
- Considers a broad view of health including the social determinants
- Offers strategies to mitigate negative health effects and maximize positive health effects
- Uses best available scientific evidence to inform the process
- Establishes baseline conditions for health, describing health outcomes, health determinants, affected populations, and vulnerable sub-populations.

Two annual meetings have also been established to support HIA practitioners in the North America, to promote adoption of the National Standards and to facilitate sharing of best practices. The Inaugural Health Impact Assessment meeting was held in 2012 to convene policy makers and HIA practitioners to receive training on HIAs and to share their work with others in the field.<sup>38</sup> The second annual Health Impact Assessment meeting is scheduled for September 24-25, 2013, in Washington, DC. In addition, the HIA of the Americas Workshop was established for HIA practitioners, to provide opportunities to discuss challenges, needs and best practices in the field. The Society of Practitioners of Health Impact Assessment (SOPHIA) was created in 2010 to support the needs of HIA practitioners in North America, and to provide leadership and promote excellence in the practice of HIAs.<sup>39</sup>

The International Association of Impact Assessment (IAIA) has also outlined specific values that should be the underpinning of any HIA: democracy, equity, ethical use of evidence, sustainable development and a comprehensive approach to health (Appendix D).

Ultimately, the goal of an HIA is to highlight the potential public health impacts of policies, programs, projects and plans for decision makers and to inform the public of such impacts, especially when health issues are not likely to be considered or anticipated.

### **3.4 HEALTH INEQUITIES, THE SOCIAL DETERMINANTS OF HEALTH (SDH) AND HIA**

Remarkable advancements have been made in healthcare and disease prevention and treatment since the early 20<sup>th</sup> century in the United States; however, not everyone has benefited equally from these achievements as indicated by a widening gap in health outcomes between groups, particularly based on racial, ethnic and socioeconomic status.<sup>40</sup> Over the past thirty years, the Surgeon General's *Healthy People* reports have prioritized reducing these disparities in health outcomes as a primary approach to improving the nation's health.<sup>41</sup> The rationale is that

38. [www.nationalhiameeting.com/](http://www.nationalhiameeting.com/)

39. [www.hiasociety.org/](http://www.hiasociety.org/)

40. Stratton, Alison, Margaret M. Hynes, and Ava N. Nepaul. 2009. The 2009 Connecticut Health Disparities Report. Hartford, CT: Connecticut Department of Public Health.

41. Healthy People 2020 website: [www.healthypeople.gov/2020/about/disparitiesAbout.aspx](http://www.healthypeople.gov/2020/about/disparitiesAbout.aspx)

ultimately, “individual health is inseparable from the health of communities and that the only way to improve the health status of the nation is to increase the health of all communities in all states and territories.”<sup>42</sup>

Healthy People 2020, a program of the US Department of Health and Human Services, sets these goals: achieving health equity, eliminating health disparities, and improving the health of all groups by the year 2020.<sup>43</sup> According to the 2009 *Connecticut Health Disparities Report*, “health disparities” are “avoidable differences in health that result from cumulative social disadvantage.”<sup>44</sup> In the United States, the term “health inequity” is more often used to describe these differences in health outcomes that are considered “avoidable, unfair and unjust.” Health equity, on the other hand, refers to the “attainment of the highest level of health for all people.” Health equity may be achieved by addressing “avoidable inequalities” as well as “historical and contemporary injustices” which contribute to health disparities.<sup>45</sup> *Health inequities often arise in groups which have “systematically experienced greater obstacles to health based on their racial or ethnic group; religion; socioeconomic status; gender; age; mental health; cognitive, sensory, or physical disability; sexual orientation or gender identity; geographic location; or other characteristics historically linked to discrimination or exclusion.”*<sup>46</sup>

An increasing body of evidence demonstrates that nearly everything influences our health, beginning in the womb and continuing throughout the lifespan.<sup>47</sup> The WHO calls these health-influencing factors the SDH, which are defined as, “The conditions in which people are born, grow, live, work and age, including the health system.”<sup>48</sup> These circumstances are shaped by a broad collection of economic, social and political forces and are “mostly responsible for health inequities.”<sup>49,50</sup>

Social determinants are powerful contributors to the health status of communities, with recent studies indicating that only 10% of health outcomes are attributable to factors associated with access to healthcare and only 20% are attributable to genetic predisposition. The remaining 70% of health outcomes are attributable to a confluence of social and environmental factors, as well as behavioral factors that are largely influenced by social and environmental determinants.<sup>51</sup> In addition, there is evidence that there is a “social gradient” of health in which an individual’s health status directly correlates with his position on the socioeconomic ladder. Thus, individuals at the bottom of the socioeconomic ladder experience the worst health outcomes

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42. Stratton, Alison, Margaret M. Hynes, and Ava N. Nepaul. 2009. *The 2009 Connecticut Health Disparities Report*. Hartford, CT: Connecticut Department of Public Health.

43. Healthy People 2020 website: [www.healthypeople.gov/2020/about/disparitiesAbout.aspx](http://www.healthypeople.gov/2020/about/disparitiesAbout.aspx)

44. Stratton, Alison, Margaret M. Hynes, and Ava N. Nepaul. 2009. *The 2009 Connecticut Health Disparities Report*. Hartford, CT: Connecticut Department of Public Health.

45. Healthy People 2020 website: [www.healthypeople.gov/2020/about/disparitiesAbout.aspx](http://www.healthypeople.gov/2020/about/disparitiesAbout.aspx)

46. Healthy People 2020 website: [www.healthypeople.gov/2020/about/disparitiesAbout.aspx](http://www.healthypeople.gov/2020/about/disparitiesAbout.aspx)

47. American Public Health Association. *Health Impact Assessment (HIA): A Tool to Benefit Health in all Policies*. (n.d.) [www.apha.org](http://www.apha.org)

48. Jonathan Heller, Shireen Malekafzali, Lynn C. Todman, Megan Wier. *Promoting Equity through the Practice of Health Impact Assessment*. Human Impact Partners and Adler School of Professional Psychology ([www.policylink.org/atf/cf/%7B97c6d565-bb43-406d-a6d5-eca3bbf35af0%7D/PROMOTINGEQUITYHIA\\_FINAL.pdf](http://www.policylink.org/atf/cf/%7B97c6d565-bb43-406d-a6d5-eca3bbf35af0%7D/PROMOTINGEQUITYHIA_FINAL.pdf)).

49. Mierzwa. CADH PPT from December Study Committee Mtg.

50. WHO Website: [www.who.int/social\\_determinants/en/](http://www.who.int/social_determinants/en/)

51. Jonathan Heller, Shireen Malekafzali, Lynn C. Todman, Megan Wier. *Promoting Equity through the Practice of Health Impact Assessment*. Adler School of Psychology and Human Impact Partners.

overall, with those higher on the ladder experiencing progressively better health outcomes.<sup>52</sup> This is true across and within countries and some level of health inequities are experienced at each rung of the ladder.

HIAs are considered to be an important tool for improving health equity, particularly for vulnerable communities.<sup>53</sup> Equity is one of the “core values” of HIAs and many practitioners and vulnerable communities have used HIAs to introduce consideration of health equity into decision-making processes.<sup>54</sup> HIAs are also intended to help policy makers understand the relationships between the SDH and associated health outcomes, as well as how policies in a broad range of non-health policy areas can impact health.<sup>55</sup> There are various ways in which HIAs can promote health equity:<sup>56</sup>

- **HIAs offer a unifying framework for health equity:** HIAs provide a systematic process for introducing health equity considerations into the decision making process. HIAs also unite disparate groups on the unifying principle of health.
- **HIAs provide robust research and accompanying recommendations to minimize health inequities:** HIAs are useful for providing research to describe the health inequities faced by vulnerable populations, to analyze and predict health impacts across and within populations, and propose recommendations that maximize health equity.
- **HIAs support community leadership and participation in decision-making processes:** HIAs are an effective tool to support community participation and leadership in decision making for vulnerable groups, who have historically been excluded from decision-making processes that impact their lives. HIAs also produce evidence that can be used to inform health implications of these decisions.
- **HIAs foster accountability:** HIAs promote accountability and transparency in decision making regarding health and equity.

Policy makers and government officials frequently make decisions that have consequences for the health of entire communities without any consideration of the potential health impacts, particularly on the most vulnerable. HIAs have the potential to transform policy making to provide for increased participation in decision making for vulnerable groups and to positively impact the health of these communities. In order to ensure that HIAs attend to health equity concerns, HIAs must be implemented according to best practice standards. In addition to these standards, Principles for Promoting Equity in HIA Practice have been proposed.<sup>57</sup>

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52. WHO website: [www.who.int/social\\_determinants/thecommission/finalreport/key\\_concepts/en/](http://www.who.int/social_determinants/thecommission/finalreport/key_concepts/en/)

53. Jonathan Heller, Shireen Malekafzali, Lynn C. Todman, Megan Wier. Promoting Equity through the Practice of Health Impact Assessment. Adler School of Psychology and Human Impact Partners.

54. Jonathan Heller, Shireen Malekafzali, Lynn C. Todman, Megan Wier. Promoting Equity through the Practice of Health Impact Assessment. Adler School of Psychology and Human Impact Partners.

55. American Public Health Association. Health Impact Assessment (HIA): A Tool to Benefit Health in all Policies. (n.d.) [www.apha.org](http://www.apha.org)

56. Jonathan Heller, Shireen Malekafzali, Lynn C. Todman, Megan Wier. Promoting Equity through the Practice of Health Impact Assessment. Adler School of Psychology and Human Impact Partners.

57. Jonathan Heller, Shireen Malekafzali, Lynn C. Todman, Megan Wier. Promoting Equity through the Practice of Health Impact Assessment. Adler School of Psychology and Human Impact Partners ([www.policylink.org/atf/cf/%7B97c6d565-bb43-406d-a6d5-eca3bbf35af0%7D/PROMOTINGEQUITYHIA\\_FINAL.pdf](http://www.policylink.org/atf/cf/%7B97c6d565-bb43-406d-a6d5-eca3bbf35af0%7D/PROMOTINGEQUITYHIA_FINAL.pdf))

### 3.5 ENTITIES THAT CONDUCT HIAs

HIAs may be conducted by a variety of institutions: public and private, nonprofit, academic and research, or through partnerships of various agencies. In the United States, the majority of HIAs are led by government agencies, followed by nonprofit organizations and then educational institutions (Figure 4).

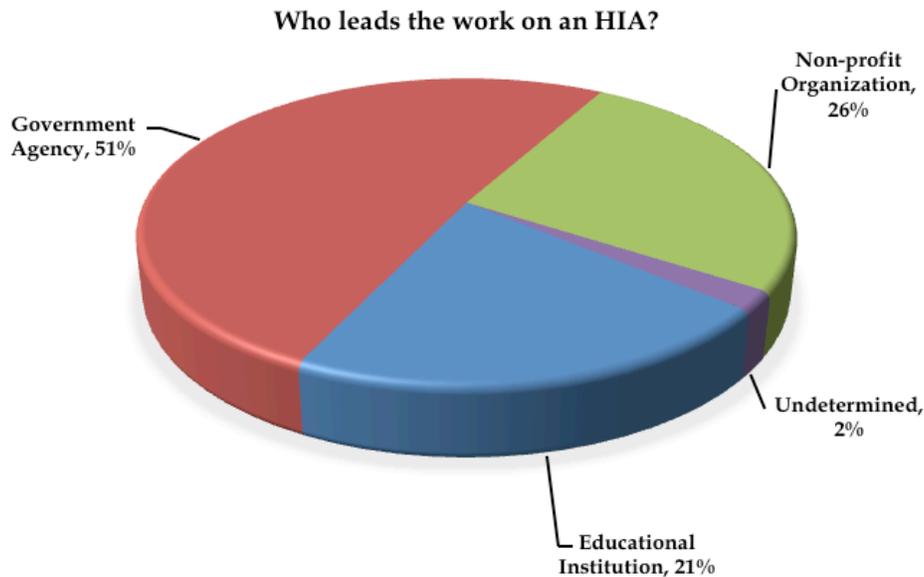


FIGURE 4: ENTITIES THAT CONDUCT HIAs

(SOURCE: KARA BLANKER, MPH, PROJECT MANAGER, THE HEALTH IMPACT PROJECT, THE PEW CHARITABLE TRUSTS; PRESENTATION TO CASE STUDY COMMITTEE, 1/25/13 [UPDATED 4/22/13], "HEALTH IMPACT ASSESSMENT --A SURVEY OF THE DIVERSE APPLICATIONS OF THE TOOL")

A brief description of organizations that have conducted HIAs illustrates the broad array of possible leaders in the HIA field. Government agencies include those at the state, regional, county, and local levels. The overwhelming majority of government agency-led HIAs in the United States have been conducted by county and local health departments.<sup>58</sup> The remainder were led primarily by state departments of transportation or regional transit authorities, state departments of energy and environment, or regional or local planning departments.<sup>59</sup> Additionally, HIAs have also been conducted by tribal governments or councils in Alaska, housing agencies, and a school district.<sup>60</sup>

Some examples of government agency involvement in HIAs include:

58. Health Impact Project website  
59. Health Impact Project website  
60. Health Impact Project website: North Wasco County School District HIA

- The Marathon County Health Department in Wisconsin led an HIA on alcohol outlet density and the impact on community health, in particular on underage drinking and drinking and driving behaviors.<sup>61</sup>
- The Kentucky Department of Public Health conducted an HIA on proposed legislation that would encourage companies to implement Worksite Wellness Tax Credits.<sup>62</sup>
- The Nashville Area Metropolitan Planning Organization conducted an HIA on the Nashville Northwest Corridor Transit Project, a transit-oriented development project.<sup>63</sup>

Nonprofit organizations are second in terms of leadership in conducting HIAs and comprise a wide range of organizations including community foundations, community action agencies, policy centers and institutes, as well as various types of coalitions, commissions, committees and boards. Often nonprofits conduct HIAs in partnership with local or regional government agencies. Nonprofits leading HIAs are typically community groups affected by the decision in question or a policy center with a mission to guide health-related policy and decision making.<sup>64</sup> Nonprofit led HIAs sometimes arise from grassroots efforts by community groups. There are advantages to nonprofit involvement with HIAs – nonprofits, particularly community-based organizations often have a better understanding of the community’s needs. These organizations also may be more likely to gain the trust of the communities they serve. Conversely, these organizations may be less able to influence the incorporation of the results of an HIA into decision making by government and industry.

Examples of nonprofit organization involvement in HIAs include:

- Partners for a Healthier Community, a nonprofit policy organization, will be conducting an HIA to inform the Massachusetts Gaming Commission, local municipalities, and the public on potential siting options for a casino in Western Massachusetts. Legislation was passed in 2011 to allow additional casinos in the state, with one slated for this region.<sup>65</sup>
- Upstream Public Health, a public policy nonprofit based in Portland, Oregon, conducted an HIA of proposed legislation in Oregon that would provide state funds to purchase locally-grown foods for schools and set up school teaching gardens. The HIA examined the potential impacts of the proposed law on child nutrition in public schools and economic health of rural communities. The HIA supported passage of the legislation and was instrumental in generating broad support for a pilot project.<sup>66</sup>
- An example of a government and nonprofit partnership is the Urban Agriculture Overlay District HIA, led by the Cleveland Planning Commission in partnership with

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61. Health Impact Project, accessed:  
[www.healthimpactproject.org/hia/us/marathon-county-alcohol-density](http://www.healthimpactproject.org/hia/us/marathon-county-alcohol-density)

62. Health Impact Project, accessed:  
[www.healthimpactproject.org/hia/us/kentucky-worksite-wellness-tax-credit](http://www.healthimpactproject.org/hia/us/kentucky-worksite-wellness-tax-credit)

63. Health Impact Project, accessed:  
[www.healthimpactproject.org/hia/us/nashville-northwest-corridor-transit](http://www.healthimpactproject.org/hia/us/nashville-northwest-corridor-transit)

64. Kara Blanker, MPH, Project Manager, The Health Impact Project, The Pew Charitable Trusts; Presentation to CASE Study Committee, 1/25/13 [updated 4/22/13], “Health Impact Assessment--A survey of the diverse applications of the tool.”

65. Health Impact Project, accessed:  
[www.healthimpactproject.org/hia/us/western-massachusetts-casino-hia](http://www.healthimpactproject.org/hia/us/western-massachusetts-casino-hia)

66. Health Impact Project, accessed:  
[www.healthimpactproject.org/hia/us/oregon-farm-to-school-legislation](http://www.healthimpactproject.org/hia/us/oregon-farm-to-school-legislation)

- the Cuyahoga County Board of Health, the Saint Luke’s Foundation, and the Cleveland Department of Public Health. This HIA was conducted on proposed zoning legislation that would allow “intense farm uses” in an urban environment, such as livestock rearing, community gardening, and building of chicken coops. The HIA was initiated to identify unintended adverse health impacts, such as increased exposure to carcinogens or infectious diseases due to increased pesticide use and increased animal waste, with suggestions for mitigating these impacts.<sup>67</sup>
- An HIA led by the Bernalillo County Place Matters Team, Bernalillo County, New Mexico, evaluated the health impacts of the county’s ten year facility master plan, the Pedestrian and Bicyclist Safety and Action Plan, in a poor, underserved, environmental justice community.<sup>68</sup> The HIA focused on identifying and mitigating potential pedestrian and bicyclist access and safety issues. This HIA is an example of a grassroots HIA with heavy engagement of community residents and vulnerable groups through involvement of a neighborhood association, a community advisory council, and a community advocacy group.<sup>69</sup>

Academic institutions, most often schools of public health followed by schools of medicine, lead HIAs with the third greatest frequency. In addition, several universities as well research institutes linked with academic centers have led HIA studies across the country.<sup>70</sup> There are several advantages to academia-led HIAs. Academic centers have the ability to engage students in the HIA through their internship and practicum experiences under the oversight of skilled researchers. HIAs may also allow these institutions to fulfill missions to engage with and improve the health of local communities. Academics, particularly those skilled in public health and community-based participatory research methods, have skills that are transferable to the assessment phase of an HIA, which includes the establishment of baseline health status and community conditions. These researchers may also be skilled at engaging community stakeholders, which is important for conducting HIAs according to practice standards.<sup>71</sup> One potential challenge of academia-led HIAs is their focus on rigor and certainty of conclusions over deadlines and political priorities.<sup>72</sup> It is important to emphasize that HIAs are a pragmatic decision-support tool and that in order to successfully influence policy, HIAs must operate in the real-world policy making setting, providing timely information without delaying important decisions; offering analysis based on best-available evidence and professional judgment, and proposing recommendations that are not only evidence-based, but feasible and actionable within the legal purview and policy frameworks of other sectors.

Examples of academia-led HIAs include:

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67. Health Impact Project. Accessed:

[www.healthimpactproject.org/hia/us/urban-agriculture-overlay-district-health-impact-assessment](http://www.healthimpactproject.org/hia/us/urban-agriculture-overlay-district-health-impact-assessment)

68. “Environmental justice community” means (A) a US census block group, as determined in accordance with the most recent US census, for which 30% or more of the population consists of low income persons who are not institutionalized and have an income below 200% of the federal poverty level.

69. Health Assessment on the Impact of the Bernalillo County Pedestrian and Bicyclist Safety Action Plan: Accessibility and Safety on Mountain View’s Second Street. Accessed:

[www.bcplacematters.com/2ndstreet/#ad-image-0](http://www.bcplacematters.com/2ndstreet/#ad-image-0)

70. Health Impact Project:

[www.healthimpactproject.org/hia/us#organization\\_type:Educational%20Institution](http://www.healthimpactproject.org/hia/us#organization_type:Educational%20Institution)

71. Personal Communication, Sandra Bulmer, SCSU

72. Personal Communication, Kara Blankner Vonasek, Health Impact Project

- The Georgia Technology Institute’s College of Architecture conducted a comprehensive HIA on the “Aerotropolis Atlanta” Project, a proposed development on the site of a former factory contaminated with industrial waste that is planned to include 6.5 million square feet of office space, hotels, shopping and an airport parking facility.<sup>73</sup>
- Boston University’s Child HIA Working Group led two HIAs – the first was on the Massachusetts Low Income Energy Assistance Program to determine the impacts of high energy costs on low-income children’s health<sup>74</sup> and the second studied the health impacts of proposed changes to the Massachusetts Rental Voucher Program on low-income children.<sup>75</sup>
- Texas Southern University and the Baylor College of Medicine conducted an HIA on Transit Oriented Development in Houston, examining the potential health impacts to a neighborhood near the site of a proposed light rail expansion.<sup>76</sup>

## 3.6 HIAs AND THE DECISION MAKING PROCESS

### 3.6.1 HIA Decision Levels

HIA can be conducted on policies, programs, projects or plans at different levels of decision making, such as federal, state, regional, county, local or tribal. In Connecticut, public health and regional planning infrastructure is not delineated on a county basis as in most other states. Figure 5 indicates the proportion of HIAs performed at the various decision-levels in the United States.

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73. Health Impact Project. Accessed:  
[www.healthimpactproject.org/hia/us/aerotropolis-atlanta](http://www.healthimpactproject.org/hia/us/aerotropolis-atlanta)

74. Health Impact Project. Accessed:  
[www.healthimpactproject.org/hia/us/massachusetts-low-income-energy-assistance-program](http://www.healthimpactproject.org/hia/us/massachusetts-low-income-energy-assistance-program)

75. Health Impact Project. Accessed:  
[www.healthimpactproject.org/hia/us/massachusetts-rental-voucher-program](http://www.healthimpactproject.org/hia/us/massachusetts-rental-voucher-program)

76. Health Impact Project. Accessed:  
[www.healthimpactproject.org/hia/us/houston-transit-oriented-development](http://www.healthimpactproject.org/hia/us/houston-transit-oriented-development)

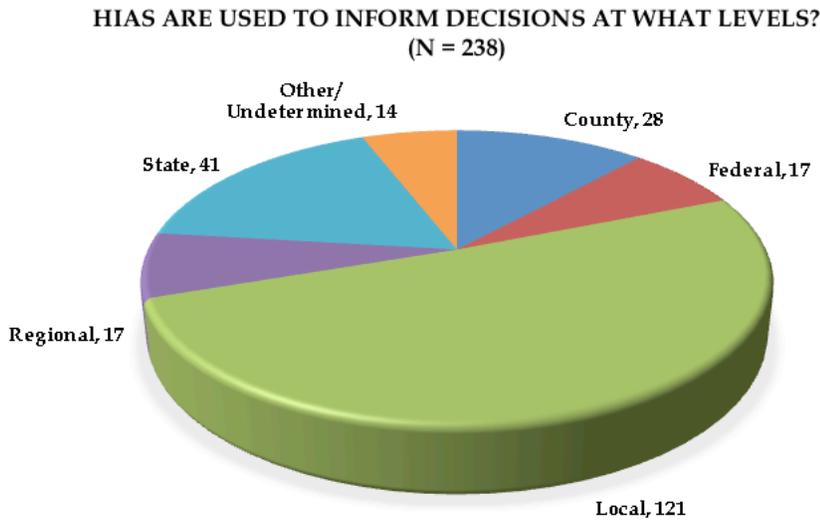


FIGURE 5: HIA DECISION LEVELS IN THE UNITED STATES

(SOURCE: KARA BLANKER, MPH, PROJECT MANAGER, THE HEALTH IMPACT PROJECT, THE PEW CHARITABLE TRUSTS; PRESENTATION TO CASE STUDY COMMITTEE, 1/25/13 [UPDATED 4/22/13], "HEALTH IMPACT ASSESSMENT --A SURVEY OF THE DIVERSE APPLICATIONS OF THE TOOL")

### 3.6.2 Applications of HIAs

HIAs are unique, differing from most other types of public health assessments or program evaluations in that they are completed prospectively for the purpose of informing the decision making process before approval of a policy, program, project or plan.<sup>77,78</sup> In contrast, program evaluation and other types of public health assessments are generally completed retrospectively, looking at policies, programs, projects and plans once enacted or implemented to determine their effectiveness. Performing an HIA at early stages of the decision-making process, while there is still flexibility in planning, increases the probability that the findings will be incorporated cost effectively and in a way that maximizes positive health impacts and minimizes negative health impacts.<sup>79</sup>

HIAs can be used to support a variety of decisions, including:

- **Policy Decisions:** HIAs can be conducted, for example, on proposed state legislation, city council decisions, or on district-wide policies of local school boards.
- **Policy Implementation:** HIAs can be utilized to weigh the various implementation options for a policy or program once it is approved.

77. Health Impact Assessment International Best Practice Principles. *International Association for Impact Assessment (IAIA)*. September 2006. Special Publication Series No. 5

78. Human Impact Partners. *A Health Impact Assessment Toolkit: A Handbook to Conducting HIA*, 3rd Edition. Oakland, CA: Human Impact Partners. February 2011.

79. Human Impact Partners. *A Health Impact Assessment Toolkit: A Handbook to Conducting HIA*, 3rd Edition. Oakland, CA: Human Impact Partners. February 2011.

- **Project Specific:** HIAs can inform siting, permitting, construction, and design of proposed projects on a state, regional or local level.
- **Comprehensive Plans:** HIAs can inform neighborhood plans, regional plans, and master planning documents.<sup>80</sup>

### 3.6.3 HIAs and Potential Outcomes on Decision Making

Table 2 shows a range of potential outcomes that an HIA can have on the decision-making process. While an HIA is not intended to delay or stop a project’s implementation or approval, there is the potential that the HIA could result in these outcomes. This is often cited as a barrier, including by participants of focus group sessions conducted for this study, to obtaining stakeholder or agency support for an HIA.

**TABLE 2: POTENTIAL OUTCOMES OF AN HIA ON THE DECISION-MAKING PROCESS**  
(SOURCE: HEALTH IMPACT ASSESSMENT: A GUIDE FOR PRACTICE. OAKLAND, CA: R. BHATIA, HUMAN IMPACT PARTNERS, 2011; RE-FORMATTED)

<b>POTENTIAL OUTCOMES OF HIA ON THE DECISION-MAKING PROCESS</b>
<b>Changes to the design, adoption, or implementation of the project/policy</b>
<ul style="list-style-type: none"> <li>• Inclusion of design changes or mitigations to protect or promote health</li> <li>• Adoption of an alternative decision option</li> <li>• Delay of a decision in order to assess health impacts</li> </ul>
<b>Changes to societal understanding of the causes of good or poor health</b>
<ul style="list-style-type: none"> <li>• Greater social understanding of relationships among the decisions, environmental conditions, and health</li> <li>• Identification of new priority public health problems</li> <li>• Advocacy of healthy policy interests</li> </ul>
<b>Changes to the way health is considered in institutional decision-making practices</b>
<ul style="list-style-type: none"> <li>• Coordination and cooperation among public health and other institutional sectors</li> <li>• Public or institutional support and/or resources for HIA</li> <li>• Adoption of health objectives, indicators, and standards for policy and decision making</li> </ul>

## 3.7 HIA CATEGORIES

One of the strengths of an HIA is its flexibility. An HIA can be scaled to fit the available time and resources of a decision making process. The various HIA approaches are most often defined as rapid, intermediate, or comprehensive. While these terms are not consistently applied across all HIA practice, they are useful in describing the spectrum of HIA activity, which typically differs in complexity, duration, level of stakeholder engagement, resources required and methods used. The terms and their respective differences are described as follows:

<sup>80</sup> Kara Vonasek, MPH, Project Manager, The Health Impact Project, The Pew Charitable Trusts; Presentation to CASE Study Committee, 1/25/13, “Health Impact Assessment --A survey of the diverse applications of the tool”)

- **“Rapid” HIAs** may be completed in a short time (weeks to months), are often focused on smaller and less complex proposals, and generally involve primarily literature review and descriptive or qualitative analysis.<sup>81</sup> Rapid HIAs are sometimes referred to as “mini” HIAs. Rapid HIAs typically have limited stakeholder engagement.
- **“Intermediate” HIAs** require more time and resources and involve more complex pathways, more stakeholder engagement, and a more detailed analysis, but may include little collection of new data.<sup>82</sup> They may involve a non-systematic literature review and are primarily dependent on readily available data.<sup>83</sup>
- **“Comprehensive” HIAs** are most commonly differentiated from rapid and intermediate HIAs by the scope of potential impacts and the need for collection of new primary data. They can take longer than a year to complete.<sup>84</sup> Comprehensive HIAs, sometimes referred to as “maxi” HIAs, are rigorous and thorough exercises which involve more extensive data collection and analysis than rapid and intermediate HIAs. They generally involve participation of a broader array of stakeholders, an extensive literature search, secondary analysis of existing data and primary data collection. “Control” populations may also be used.<sup>85</sup>

There is some disagreement regarding the benefits and appropriate implementation of rapid HIAs. Some have described a “rapid” HIA as a “desktop HIA,” which requires little or no stakeholder involvement. Another variation of a rapid HIA has been described as a “rapid-appraisal HIA,” which includes public engagement through an initial half-day workshop for stakeholders, followed by “desktop” exercises and evaluation of secondary, readily available data.<sup>86</sup>

A more extensive version of a “rapid” HIA was recently proposed by Human Impact Partners, a nonprofit organization that specializes in conducting HIAs. Their “New Rapid HIA Model” can be completed in approximately three months for roughly \$75,000.<sup>87</sup> This type of HIA results in a “short” report that meets the minimum essential elements of an HIA and highlights engagement and empowerment of vulnerable groups<sup>88</sup>

81. Improving Health in the United States: The Role of Health Impact Assessment. National Academies Press, Washington, D.C. 2000. [www.nap.edu](http://www.nap.edu) © 2011 The National Academy of Sciences. [www.nap.edu/catalog.php?record\\_id=13229](http://www.nap.edu/catalog.php?record_id=13229)

82. Improving Health in the United States: The Role of Health Impact Assessment. National Academies Press, Washington, D.C. 2000. [www.nap.edu](http://www.nap.edu) © 2011 The National Academy of Sciences. [www.nap.edu/catalog.php?record\\_id=13229](http://www.nap.edu/catalog.php?record_id=13229)

83. Prospective health impact assessment: pitfalls, problems, and possible ways forward Jayne Parry, Andrew Stevens. Environmental Impact Assessment Review. 20 (2000) 627–645. BMJ VOLUME 323 17 NOVEMBER 2001 [bmj.com](http://bmj.com). [www.elsevier.com/locate/ear](http://www.elsevier.com/locate/ear)

84. Improving Health in the United States: The Role of Health Impact Assessment. National Academies Press, Washington, D.C. 2000. [www.nap.edu](http://www.nap.edu) © 2011 The National Academy of Sciences. [www.nap.edu/catalog.php?record\\_id=13229](http://www.nap.edu/catalog.php?record_id=13229)

85. Prospective health impact assessment: pitfalls, problems, and possible ways forward Jayne Parry, Andrew Stevens. Environmental Impact Assessment Review. 20 (2000) 627–645. BMJ VOLUME 323 17 November 2001 [bmj.com](http://bmj.com). [www.elsevier.com/locate/ear](http://www.elsevier.com/locate/ear)

86. Same as #30 (Parry and Stevens 2001; Mindell et al. 2003; ICMM 2010)

87. New Rapid HIA Model (used for the Farmers Field Rapid HIA Project). Human Impact Partners. (n.d.) Accessed: [www.humanimpact.org/component/jdownloads/finish/21/242](http://www.humanimpact.org/component/jdownloads/finish/21/242)

88. New Rapid HIA Model (used for the Farmers Field Rapid HIA Project). Human Impact Partners. (n.d.) Accessed: [www.humanimpact.org/component/jdownloads/finish/21/242](http://www.humanimpact.org/component/jdownloads/finish/21/242)

Others have proposed differentiating HIAs based on the participatory and data analysis approach:

- “**participatory** (emphasizing shared governance, public participation, and a focus on socioeconomic and environmental determinants)”
- “**quantitative or analytic** (concentrating on the methods and rigor of the analysis)”
- “**procedural** (drawing on elements of the other two approaches but emphasizing the procedural steps required and often undertaken within a specified administrative or regulatory context).”<sup>89</sup>

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89. Improving Health in the United States: The Role of Health Impact Assessment. Report in Brief. National Academies Press, Washington, D.C. 2000. [www.nap.edu](http://www.nap.edu) © 2011 The National Academy of Sciences. [www.apfo.org.uk/resource/item.aspx?RID=110258](http://www.apfo.org.uk/resource/item.aspx?RID=110258)



## 4.0 HEALTH IMPACT ASSESSMENT PROCESS

The National Research Council (NRC) was requested by the Robert Wood Johnson Foundation, the National Institute of Environmental Health Science, the California Endowment, and the Centers for Disease Control and Prevention (CDC) to develop a framework, terminology, and guidance for conducting HIAs. The NRC convened a committee that found that there was a high degree of consistency in the basic elements that are included in an HIA and recommended a six-step framework that included screening, scoping, assessment, recommendations, reporting, and monitoring and evaluation. A summary of each of these steps from the NRC's report on "Improving Health in the United States: The Role of Health Impact Assessment" (2011) is excerpted below and illustrated in Figure 5.

### (1) Screening

*"Screening* establishes the need for and value of conducting an HIA and is essential for high-quality HIA practice. The (NRC) committee concludes that the following factors are the most important to consider in determining whether to conduct an HIA: the potential for substantial adverse or beneficial health effects or irreversible or catastrophic effects, even if the effects have a low likelihood; the ability of information from the HIA to alter a decision or help a decision maker to discriminate among options; the possibility that a disproportionate burden of the health effects is placed on vulnerable populations; the existence of public concern or controversy regarding health effects of a proposal; the opportunity to incorporate health information into a decision-making process that may not otherwise include such information; and the ability of the HIA team to complete the assessment within the time and with the resources available."

### (2) Scoping

*"Scoping* identifies the populations that might be affected, determines which health effects will be evaluated in the HIA, identifies research questions and develops plans to address them, identifies the data and methods to be used and alternatives to be assessed, and establishes the HIA team and a plan for stakeholder participation throughout the HIA process. The credibility of an HIA and its relevance to the decision-making process rest on a systematic evaluation of the full array of potential effects – risks, benefits, and tradeoffs – rather than on a narrow consideration of a subset of issues predetermined by a team's research interests or regulatory requirements. However, to ensure judicious use of resources, the HIA should ultimately focus on the health effects of greatest potential importance. The (NRC) committee notes that it is appropriate to include issues that are the subject of community concern even if they appear unlikely to be substantiated by further analysis; such an analysis can provide reassurance to communities even if the eventual conclusions do not support their concerns."

### (3) Assessment

*"Assessment* is a process that involves describing the baseline health status of the affected populations and then characterizing the expected effects on health (and its determinants) of the

proposal and each alternative under consideration relative to both the baseline and each other. In light of the various [policies, programs, projects, and plans] that are the subject of HIAs, a broad array of data and analytic methods are used to evaluate the potential effects. Often, complete information is not available, and expert judgment plays an important role in the HIA. Whatever approach is taken, an explicit statement of data sources, methods, assumptions, and uncertainty is essential. The (NRC) committee notes that uncertainty does not negate the value of information. Even when the evidence of an effect is uncertain, describing the potential causal pathways that are based on a reasonable interpretation of available data and expert judgment can help to establish a framework for monitoring and managing any impacts that might occur as the proposal is implemented.”

#### **(4) Recommendations**

“*Recommendations* identify alternatives to the proposal or specific actions that could be taken to avoid, minimize, or mitigate adverse effects or to take advantage of opportunities for a proposal to improve health. Relatively little attention has been paid to the formulation of effective, actionable recommendations, and the (NRC) committee offers three points for consideration. First, community input is essential for proposals that could have localized effects because it helps to ensure that specific aspects of living conditions and community design that may not be obvious to outside researchers are considered, and it maximizes the probability that the affected community will accept the conclusions and recommendations of the assessment. Second, recommendations are effective only if they are adopted by a decision maker and implemented. The chances that the recommendations are adopted and implemented will increase if measures are drafted to address identified public-health risks; recognize feasibility issues, practical challenges, and other concerns possibly raised by the decision maker during the HIA process; and fulfill the requirements of the legal and policy framework governing the decision. Third, recommendations should include the elements of a health-management plan that identifies appropriate indicators for monitoring, an entity with authority or ability to implement each measure, and a mechanism for verifying implementation and compliance. In practice, the HIA team will be asking a decision maker to consider the findings and recommendations; ultimately, the decision maker must balance health considerations with the many other technical, social, political, and economic concerns that bear on the proposal.”

#### **(5) Reporting**

“*Reporting* is the communication of findings and recommendations to decision makers, the public, and other stakeholders. At present, there is little uniformity in the content of an HIA report. The (NRC) committee recommends that, at a minimum, the written HIA report describe the proposed action or policy and alternatives that are the subject of the HIA, document the data sources and analytic methods used, identify the people consulted during the HIA process, and provide a clear, concise, and easily understood description of the process, findings, and recommendations. Furthermore, the reports should be made publicly available. A well-designed dissemination strategy is critical for the success of an HIA, and continuing efforts to inform decision makers and stakeholders of the findings and recommendations are essential. However, efforts to support health based recommendations must be carefully distinguished from biased efforts to promote a specific alternative on the basis of a skewed comparison of favorable and unfavorable aspects of a proposal or a predetermined political agenda. Undue bias in an HIA will likely compromise its credibility and efficacy.”

**(6)Monitoring and Evaluation**

“Monitoring and evaluation can be characterized by several activities. Monitoring can consist of tracking the adoption and implementation of HIA recommendations or tracking changes in health indicators (health outcomes or health determinants) as a new [policy, program, project or plan] is implemented. Evaluation can be process evaluation (evaluation of whether the HIA was conducted according to its plan of action and applicable standards), impact evaluation (evaluation of whether the HIA influenced the decision-making process), or outcome evaluation (evaluation of whether implementation of the proposal changes health outcomes or health determinants).”

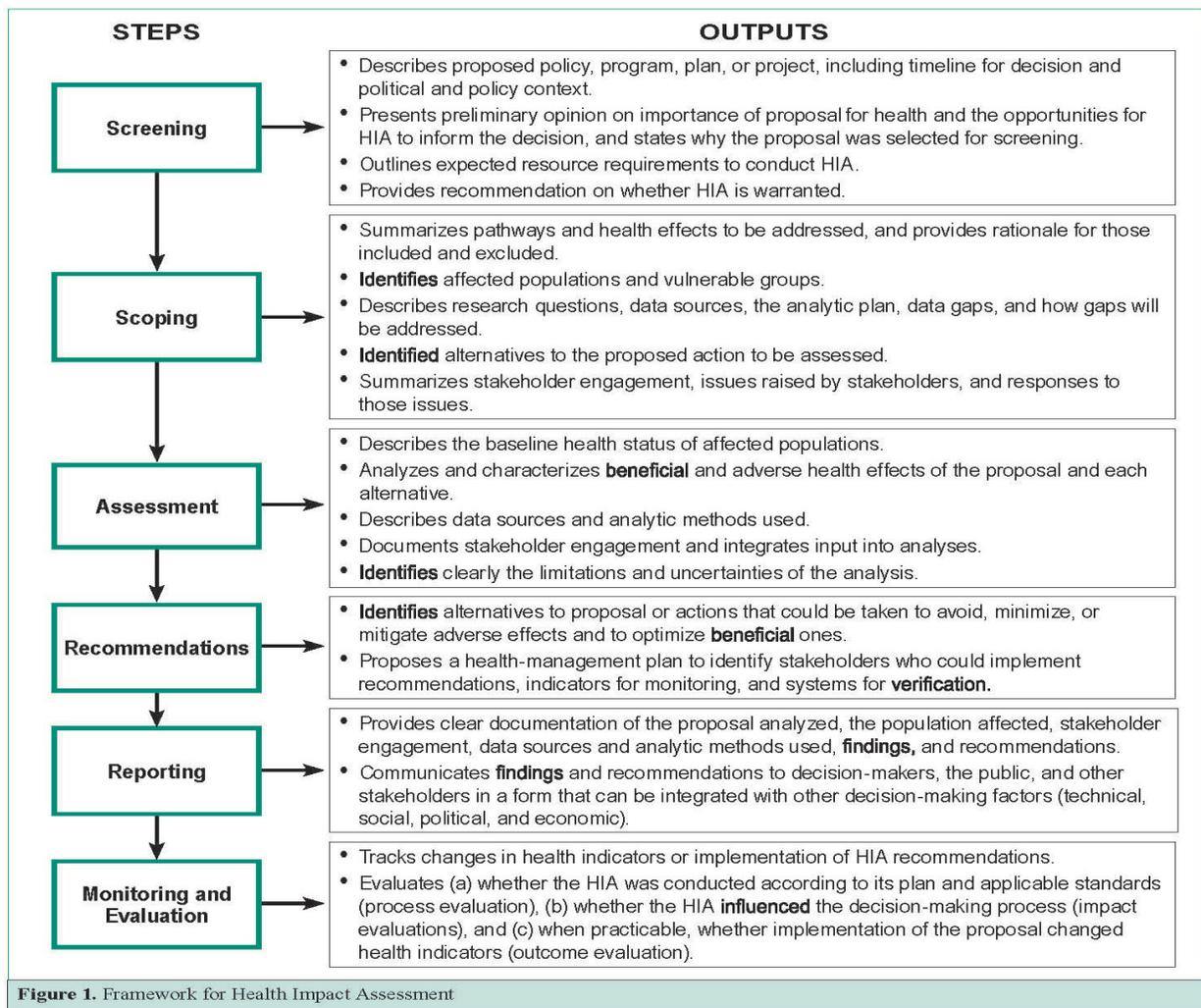


FIGURE 6: HIA STEPS AND OUTPUTS  
(SOURCE: “IMPROVING HEALTH IN THE UNITED STATES: THE ROLE OF HEALTH IMPACT ASSESSMENT”,  
FIGURE 1. FRAMEWORK FOR HEALTH IMPACT ASSESSMENT; NRC, 2011)



## 5.0 HIA IMPLEMENTATION STRATEGIES

### 5.1 EXAMPLES FROM OTHER STATES

HIAs have been implemented in a variety of ways in the United States, such as:

- Required by legislation (Massachusetts: Transportation Reform Legislation, 2009)
- A best practice, but not required by state law (Incorporating HIA into NEPA Environmental Impact Assessment Process - Alaska's Health Impact Assessment Program)
- Through grassroots efforts (Oregon HIA Network – Statewide Collaborative Effort)

#### 5.1.1 *Legislative Action: Massachusetts – Transportation Reform Legislation (2009)*

As of the publication of this report, Massachusetts is the only state that has statutorily mandated HIAs as part of its 2009 transportation reform law. The Massachusetts Transportation Reform law included the creation of a Healthy Transportation Compact as one of its key requirements. This is a cross secretariat committee co-chaired by the state's secretary of transportation and the secretary of health and human services, and includes the secretary of energy and environmental affairs, MassDOT highway administrator, MassDOT transit administrator, and the commissioner of public health. Two of the directives for the Healthy Transportation Compact are to: (1) establish methods to implement the use of HIAs to determine the effect of transportation projects on public health and vulnerable populations; and (2) institute the use of HIAs by planners, transportation administrators, public health administrators and developers.

The McGrath Highway Project was the focus of the first HIA that was completed under law. This HIA was conducted by the Massachusetts Department of Public Health (MDPH) through a grant from the Health Impact Project, a collaboration of the Robert Wood Johnson Foundation and The Pew Charitable Trusts. The McGrath Highway Project, referred to as "Grounding McGrath," is intended to determine the future of the Route 28 corridor, especially the feasibility, benefits, impacts, and cost of removing a portion of the highway's elevated structure. The goal of the HIA was to provide supplemental health data to better inform optimal transportation design alternatives using existing health surveillance data at the neighborhood level. In addition, the HIA took into account that the community surrounding Route 28 is designated as an Environmental Justice Community. Thus, socio-economic factors including income, housing availability/costs, and access to medical care were taken into account.

The HIA took two years to complete and a draft HIA was released for a 30-day public comment period in April 2013 ( [www.mass.gov/eohhs/gov/departments/dph/programs/environmental-health/health-impact-assessments.html](http://www.mass.gov/eohhs/gov/departments/dph/programs/environmental-health/health-impact-assessments.html)). Through discussions with Somerville residents, area legislative representatives, and local and state government agencies, the HIA focused on addressing the following health concerns:

- Current barriers to physical activity due to lack of sidewalks and current transportation infrastructure
- Impeded mobility and access to neighborhoods located east and west of the highway
- Pedestrian safety
- Lack of access to jobs, goods and services, schools, churches, businesses and recreational areas
- Decreased property values
- Exposure to air pollution and noise
- Lack of green space

Two of five alternatives (Boulevard Alternative and Boulevard with Inner Belt Connection Alternative) were identified as most optimal because they provided the greatest opportunities for mobility and access. Focusing on these issues was considered critical as health data available for the Somerville area demonstrated that nearly 44% of Somerville children are overweight or obese compared to the statewide average of 32%. Obesity is a major risk factor for developing Type II diabetes. One example that highlights the potential of HIAs to improve positive health impacts and mitigate negative impacts is related to exposure to traffic-related air pollutants. It was found that all future project alternatives will result in significant reduction in traffic-related air pollution, largely due to advancements in vehicle emission standards and technologies. It is recommended that there be continued support of MassDEP's efforts to reduce motor-vehicle emissions. However, de-elevation of the highway structure is likely to result in an increase in ground-level exposure to air pollution emissions. Therefore, it is also recommended that sidewalks and bike paths should be located farther away from the roadway, and trees should be planted and barriers constructed where possible to reduce exposure to traffic-related air pollutants.

The HIA supported conformance with Complete Streets Guidelines that incorporate high quality design elements associated with active transportation. In addition, it emphasized the importance of improving access for individuals with disabilities and the critical need to be cognizant of cultural preferences, demographic diversity, and socioeconomic status of the residents in providing a multifaceted approach to increase active transportation choices.

Higher noise impacts may also result from de-elevation of the highway. Thus, the HIA also recommended that a more comprehensive analysis be conducted as part of the final transportation study to determine where noise mitigation may be required.

Recommendations on public safety and land use and economic development were also provided. These included:

- Support efforts to reduce travel speeds and volumes in nearby neighborhoods to decrease injuries and fatalities
- Local law enforcement should be involved in the planning of sidewalks and bike paths so that these active transportation options will be more likely to be selected by residents
- Long-term plans for this area, which is classified as an environmental justice community, need to involve current residents to ensure affordability of goods and services, stabilization of cost of rental apartments, and availability of employment opportunities

Access to health and other relevant data (in this case transportation data) is needed to conduct HIAs according to the HIA Practice Standards.<sup>90</sup> Massachusetts health officials also found that existing health data resources, such as the MDPH Environmental Public Health Tracking portal, provide publicly available information on a range of health outcomes and environmental data that can be included in studying the potential health impacts of proposed transportation and other projects that might benefit from an HIA. Further, Massachusetts found that traffic density information can provide a good surrogate for exposure to traffic-related pollutant emissions when air quality data are not available during the early phases in the planning process of a transportation project.

This pilot HIA also found that while it is beneficial to conduct an HIA concurrently with the first phase of a transportation planning study, follow-up efforts would be useful at a later stage when more specific information and transportation data are available. This would allow for a more precise assessment of the health impacts of the proposed transportation alternatives.

As this was the first HIA conducted under the Transportation Reform Law, this pilot HIA had other goals, including serving as a means for training staff responsible for implementing the requirements of the legislation that HIAs be conducted and providing the framework for developing a pre-screening protocol to determine the types of transportation projects that might benefit from an HIA. Some examples of initial criteria that were developed to identify where an HIA might be useful are shown in Table 3. The criteria were divided into three transportation modes (roadway projects, transit and rail projects, and airport projects) and projects subject to the Massachusetts Environmental Policy Act (MEPA).

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90. Minimum Elements and Practice Standards for Health Impact Assessment. North American HIA Practice Standards Working Group. Version2. 2010

TABLE 3: POSSIBLE CRITERIA TO TARGET MASSACHUSETTS TRANSPORTATION PROJECTS FOR HIAs  
(SOURCE: SUZANNE CONDON, ASSOCIATE COMMISSIONER, MASSACHUSETTS DEPARTMENT OF PUBLIC HEALTH;  
PRESENTATION TO CASE STUDY COMMITTEE 1/25/13)

Roadway Projects	Transit and Train Projects	Airport Projects	MA Environmental Policy Act (MEP)
Traffic volume significantly increases	Significant increase or decrease in service	Significant increase in flights	Any transportation project that will exceed MEPA (301 CMR 11.00) Review Thresholds, with particular regard to those Thresholds in the Transportation Category (301 CMR 11.03 (6))
Highway expansion projects	New stations or stations to be decommissioned	Addition of new runways	
Projects that increase motor vehicle emissions to residents within 300 m	New parking areas that may increase idling/particulate matter exposure	Change in size and type of aircraft	
Changes that could result in mode shift (e.g., car to walking, biking, or transit)	Changes that could result in mode shift (e.g., between train, transit, walking and biking)	Change that will result in additional traffic to airport	An HIA for any transportation project that has the potential to impact an environmental justice population. The policy participation and enhanced analysis of impacts and mitigation under MEPA for projects that exceed thresholds for air, water, hazardous waste (other than remediation projects) or wastewater and sewage sludge treatment and disposal
Significant changes that result in housing destruction or displacement of residents	Significant changes that result in housing destruction or displacement of residents	Changes that will result in shorter distances from runways or taxiways to residents	
Changes in access to goods and services	Changes in access to goods and services		

Several challenges and rewards that were identified from MDPH and MassDOT collaborating on the McGrath Highway Project HIA are highlighted in Table 4.

TABLE 4: CHALLENGES AND REWARDS OF MDPH AND MASSDOT COLLABORATING ON  
MCGRATH HIGHWAY PROJECT HIA

(SOURCE: SUZANNE CONDON, ASSOCIATE COMMISSIONER, MASSACHUSETTS DEPARTMENT OF PUBLIC HEALTH;  
PRESENTATION TO CASE STUDY COMMITTEE 1/25/13)

Challenges		Rewards	
MPDH	MassDOT	MPDH	MassDOT
Gaining familiarity with extensive Massachusetts transportation planning process	Identifying appropriate transportation initiatives for inclusion in HIA process	Establishing a process for integrating baseline health data into a transportation project	Broader understanding of transportation impacts and benefits
Better estimating when actual HIA begins and that many alternatives are proposed but only a few will undergo thorough evaluation	Incorporating HIA at appropriate point in the transportation planning/project development process	Recognizing that transportation partners not only see the importance of including health data but also demonstrating knowledge of health databases.	Responding to community and stakeholder concerns
Determining who from each agency and the local stakeholders should attend HIA training	Leveraging existing transportation data and analysis to support objectives of HIA to minimize added effort and cost		Supporting state goals of improved public health and air quality as well as reduced congestion and greenhouse gas emissions.

### 5.1.2. Incorporating HIA into NEPA Environmental Impact Assessment Process - Alaska's Health Impact Assessment Program

HIAs in Alaska take place most commonly within the framework of the National Environmental Policy Act (NEPA, 1969). NEPA requires federal agencies to prepare an environmental impact statement (EIS) for any proposed federal action with potential for significant environmental impact. The purposes of NEPA are “to promote efforts which prevent or eliminate damage to the environment and biosphere and *stimulate the health and welfare of man*; to enrich the understanding of the ecological systems and natural resources important to the Nation; and to establish a Council on Environmental Quality” (NEPA Sec. 2 [42 USC 4321]). Furthermore, NEPA regulations and guidance connect EISs with health in the following ways:

- “Effects includes ecological, aesthetic, historic, cultural, economic, social, or health, whether direct, indirect, or cumulative” (40 C.F.R. 1508.8)
- “The degree to which the proposed action affects public health or safety” (40 C.F.R. 1508.27)
- “Human environment shall be interpreted comprehensively to include the natural and physical environment and the relationship of people with that environment” (40 C.F.R. 1508.14)

The federal agency proposing the action that triggers NEPA requirements is responsible for leading the EIS. The lead federal agency may either conduct the EIS or hire a contractor. Federal, tribal, state, or local agencies with jurisdiction by law or expertise may participate as “cooperating agencies” in conducting an EIS. An EIS can be conducted on project specific or programmatic decisions. If a project specific EIS, such as permitting a large mine, the proponent pays the costs for the EIS, but does not determine the contractor(s) or content. For program decisions, such as the leasing land for oil development or logging, the responsible government agency pays for the EIS.

Historically, EISs rarely include a specific analysis on public health impacts, though they commonly indirectly address health through, for example, an analysis of the potential impacts on air or water quality. Because the steps of an HIA mirror those of an EIS, an HIA may be used to meet NEPA’s health analysis requirements. The first federal HIA/EIS was conducted in Alaska in 2004 for oil and gas leasing in the National Petroleum Reserve. The local government in the area became a cooperating agency. Through this role, the community health agency drafted an HIA and the Bureau of Land Management (lead federal agency) incorporated the HIA into the EIS. Even though this was a very contentious leasing proposal, the community engagement in the HIA process resulted in improved relationships between the community and the agency and a compromise leasing plan that was widely accepted. The results of the HIA are summarized in Table 5.

TABLE 5. RESULT OF THE NATIONAL PETROLEUM RESERVE HIA  
(SOURCE: PRESENTATION BY AARON WERNHAM, MD, MS, DIRECTOR, THE HEALTH IMPACT PROJECT, FOR THE WORLD HEALTH ORGANIZATION AND INTERNATIONAL ASSOCIATION FOR IMPACT ASSESSMENT “HEALTH IMPACT ASSESSMENT CONFERENCE,” 4/7/10; [WWW.WHO.INT/HIA/CONFERENCE/WERNHAM.PDF](http://WWW.WHO.INT/HIA/CONFERENCE/WERNHAM.PDF))

Health Concern	Mitigation Measure
Need to address health in planning future projects	Bureau of Land Management will consult with relevant health agencies in the development of future proposals in Northeast National Petroleum Reserve-Alaska
“Social ills”: alcohol, sexually transmitted infections, violence	Expand cultural orientation for workers
Air pollution	Additional baseline, modeling, and monitoring above Clean Air Act requirements
Contamination of local food sources	Baseline levels and ongoing monitoring

In 2008, a working group was established that developed a toolkit to provide technical guidance for Alaska-specific HIA practice. In addition, the working group participants identified a need for one agency to maintain and update the HIA toolkit, respond to public feedback, and to lead ongoing efforts to develop HIA capacity in Alaska. In response to these needs, the Alaska Department of Health Social Services established an HIA program in July 2010. Alaska is currently the only state with a fulltime medical epidemiologist on staff, whose job it is to facilitate the routine consideration of health in EISs. The HIA program is funded partly through state permit fees.

While HIAs are not required by Alaska law, they are considered part of a best practices approach for responsible development. As of June 2013, six natural resources and energy HIAs have been completed and twelve are in progress. A sample of the HIA projects are listed in Table 6.

TABLE 6: SAMPLE OF HIA PROJECTS IN ALASKA  
(SOURCE: [WWW.HEALTHIMPACTPROJECT.ORG/HIA/US#STATE:ALASKA](http://WWW.HEALTHIMPACTPROJECT.ORG/HIA/US#STATE:ALASKA))

Project Name	Decision Making Level	Organization(s)
Alaska Pipeline Project	Federal	Alaska Department of Health and Social Services (lead agency); Alaska Department of Natural Resources; Alaska Department of Fish and Game; Alaska Department of Environmental Conservation; Alaska Native Tribal Health Consortium; North Slope Borough; Tanana
<a href="#">Arctic Outer Continental Shelf Oil and Gas Multiple Lease Sale Environmental Impact Statement</a>	State	Alaska Inter-Tribal Council
Chuitna Coal Mine Project	Federal	Alaska Department of Health and Social Services, Alaska Department of Natural Resources, Alaska Department of Fish and Game, Alaska Department of Environmental Conservation, Alaska Native Tribal Health Consortium, Southcentral Foundation, US Army Corps of Engineers
Donlin Gold Mine Project	Federal	State of Alaska Department of Health and Social Services, Alaska Department of Natural Resources, Alaska Department of Fish and Game, Alaska Department of Environmental Conservation, Alaska Native Tribal Health Consortium, Yukon-Kuskokwim Health Corporation
Effects of Oil and Gas Activities in the Arctic Ocean Environmental Impact Statement	Local	North Slope Borough, Habitat Health Impact Consulting
Foothills West Transportation Access Project	Federal	Alaska Department of Health and Social Services (lead); Alaska Department of Natural Resources; Alaska Department of Fish and Game; Alaska Department of Environmental Conservation; Alaska Native Tribal Health Consortium; North Slope Borough; and the U.S.
Point Thomson Oil and Gas Leasing EIS/HIA	Regional	Alaska Department of Health and Social Services
Pebble Mine	Federal	University of Alaska
Susitna-Watana Hydroelectric Dam HIA	Federal	Alaska Department of Health and Social Services (lead); Alaska Department of Natural Resources; Alaska Department of Fish and Game; Alaska Department of Environmental Conservation; Alaska Native Tribal Health Consortium; Federal Energy Regulatory Commission

### ***5.1.3 Oregon HIA Network – Statewide Collaborative Effort***

The Oregon HIA Network is a group of over 250 people from government agencies, nonprofit and advocacy groups, healthcare organizations, and private sector companies that share a common interest in incorporating health into decision maker.

The Oregon HIA network was formed in 2008 as an informal group of public and private organizations. The original goal was to learn about HIAs through reading articles and from presentations by established HIA experts. After a presentation by Rajiv Bhatia, a leader in the HIA field in the United States, and Director of Occupational and Environmental Health, San Francisco Department of Public Health, the group was encouraged to conduct an HIA on plans to rebuild the I-5 Columbia River Crossing highway as part of the project's EIS. The Multnomah County Health Department took responsibility of reviewing the scientific literature and documenting the findings, then submitted a letter during the public comment period for the EIS. Workgroup members provided feedback, process guidance, and health expertise. ([www.healthimpactproject.org/resources/hia-program-case-study-collaborative-networks-in-oregon](http://www.healthimpactproject.org/resources/hia-program-case-study-collaborative-networks-in-oregon))

Capacity was initially developed when the Oregon Health Authority obtained funding from CDC and the Association of State and Territorial Health Officials (ASTHO). Upstream Public Health also received funding from the Northwest Health Foundation to conduct an HIA on policies to reduce vehicle miles traveled in Oregon's metropolitan areas. The Oregon Health Authority and Upstream Public Health sponsored joint trainings by Human Impact Partners – one aimed at state and local public health workers and a second aimed at community leaders. As of 2011, nearly 15 HIAs have been completed in Oregon. Examples include:

- Lake Oswego HIA conducted by Oregon Public Health Institute with the Department of Transportation ([www.orphi.org/download/PDF/lo%20hia%20summary\\_final.pdf](http://www.orphi.org/download/PDF/lo%20hia%20summary_final.pdf))
- Metro's Climate Smart Communities greenhouse gas reduction scenario planning. HIA conducted by the Oregon Health Authority, Metro and the Oregon Department of Transportation ([www.oregonmetro.gov/index.cfm/go/by.web/id=36945](http://www.oregonmetro.gov/index.cfm/go/by.web/id=36945))
- SE 122<sup>nd</sup> Avenue HIA conducted by the Oregon Public Health Institute, National Network of Public Health Institutes/CDC, Northwest Health Foundation, and the Portland Bureau of Planning and Sustainability ([www.orphi.org/download/PDF/122nd%20ave%20hia\\_execsummary\\_final.pdf](http://www.orphi.org/download/PDF/122nd%20ave%20hia_execsummary_final.pdf))
- Strategic HIA on Wind Energy Development in Oregon conducted by the Public Health Division of the Oregon Health Authority ([public.health.oregon.gov/HealthyEnvironments/TrackingAssessment/HealthImpactAssessment/Documents/Wnd%20Energy%20HIA/Wind%20HIA\\_Final.pdf](http://public.health.oregon.gov/HealthyEnvironments/TrackingAssessment/HealthImpactAssessment/Documents/Wnd%20Energy%20HIA/Wind%20HIA_Final.pdf))
- HIA of HB 2800 Farm to School and School Garden Policy conducted by Upstream Public Health ([www.upstreampublichealth.org/sites/default/files/F2SHIA\\_FINALlow-res\\_0.pdf](http://www.upstreampublichealth.org/sites/default/files/F2SHIA_FINALlow-res_0.pdf))

Collaboration and learning has continued with the network meeting four times a year. The meetings are organized in three parts: new HIA practitioner orientation, updates on HIA activity, and a learning session. The collaborative is funded through partners providing in-kind

contributions in terms of staff time and facility space with some organizations receiving funding from foundations such as the Northwest Health Foundation and the Health Impact Project.

At the state level, the HIA program is the responsibility of Oregon Public Health Authority, Oregon Public Health Division's Research and Education Services within the Center for Health Protection. The Research and Education Services group identifies, assesses, and reports on threats to human health from exposure to environmental and occupational hazards. The group also advises the people and communities of Oregon on potential health and safety risks where they live, work, and play.<sup>91</sup> The Center for Health Protection is responsible for licensing healthcare facilities, and for environmental health and regulation.<sup>92</sup> The state contracts with Upstream Public Health to conduct strategic planning for the HIA network, and for technical assistance in conducting HIAs and outreach to community organizations.

The Oregon Public Health Institute (OPHI) provides support and expertise and has been involved in conducting HIAs in a range of fields including transportation, land use, housing, energy, and food systems. In addition, OPHI provides public health and process expertise, and training and technical assistance for non-public health agencies and organizations interested in conducting an HIA ([www.orphi.org/strategic-projects/health-impact-assessments/](http://www.orphi.org/strategic-projects/health-impact-assessments/)).

Also, Portland State University has developed and offered a class on HIAs, and connects students with HIA projects in the community and at state organizations.

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91. [public.health.oregon.gov/PHD/Directory/Pages/program.aspx?pid=64](http://public.health.oregon.gov/PHD/Directory/Pages/program.aspx?pid=64)

92. <https://public.health.oregon.gov/PHD/Directory/pages/program.aspx?pid=4>



## 6.0 CONNECTICUT ENVIRONMENTAL POLICY ACT (CEPA)

Opportunities exist for integrating HIAs into the federal-level NEPA through the EIS process. Many states have also developed their own state-level equivalents to NEPA to guide the consideration of environmental impacts that may result from state action. Some states, such as Alaska, California, and Massachusetts, have successfully leveraged their state's NEPA equivalent to consider human health impacts along with environmental impacts. HIAs have proven to be a useful framework for achieving those integrated goals. In Connecticut, the Connecticut Environmental Policy Act (CEPA) and Environmental Impact Evaluation (EIE) process is the state-level equivalent of the NEPA and EIS process.

This section summarizes the requirements of CEPA to provide background information on how the pre-screening of HIAs could be incorporated into the EIE process. The use of the EIS process via the National Environmental Policy Act (NEPA) has been adopted by Alaska as a best practice approach for including public health impacts in the planning and design of natural resource projects (see Section 5.1.2).

CEPA was promulgated in 1972 to identify and evaluate impacts of proposed state actions that may significantly affect the state's land, water, air or other environmental resources. It enables the state to determine if a project should proceed and provides an opportunity for the public to review and comment on a proposed project ([www.ct.gov/opm/cwp/view.asp?a=2990&q=383206](http://www.ct.gov/opm/cwp/view.asp?a=2990&q=383206)).

To determine which projects and/or actions may affect the environment and are subject to CEPA review, state agencies are required to prepare an environmental classification document (ECD). In April 2011, a generic ECD was adopted whereby each state agency could revise their own ECD or operate under the provisions of the generic ECD ([www.ct.gov/opm/lib/opm/igp/org/final\\_revised\\_generic\\_ecd\\_10-5-2010.pdf](http://www.ct.gov/opm/lib/opm/igp/org/final_revised_generic_ecd_10-5-2010.pdf)).

Projects in the generic ECD that always require an Environmental Impact Evaluation (EIE) are:

- Construction of new sewage treatment plants
- Construction of hazardous waste disposal facilities
- Construction of low-level radioactive waste disposal facilities
- Construction of coal-fired heating plants

For projects with an environmental impact that is indeterminate, the agency taking or responsible for the state action shall conduct a public scoping process to determine whether to prepare an EIE. Projects that require a public scoping process are:

- Construction of, addition to, or major alteration involving a change in use of a state leased, licensed, or owned facility involving 100,000 sq. ft. or greater of floor space if the facility is located in a Regional Center or Neighborhood Conservation Area, or 25,000 sq. ft. or greater of floor space if the facility is located outside of such areas as defined by the locational guide map of the Conservation and Development Policies Plan for Connecticut.
- Construction of new paved roads or lane additions to existing roads where the state's cost of such would equal or exceed \$1,000,000 using current industry cost estimates.
- Construction of new parking lots, garages, or additions thereto, that provide for an increase in capacity of 200 vehicles or more.
- Construction of new, or changes to, dams on watercourses resulting in a permanent change in water level of more than four inches.
- Capacity expansion of sewage treatment plants, hazardous waste or low-level radioactive disposal facilities and coal fired heating plants.
- Demolition or major alteration of any facility (i.e., building or structure) or site listed or eligible to be listed on the National or State Registers of Historic Places as determined by the State Historic Preservation Office.
- Any other action that may significantly affect the environment in an adverse manner. The significance of a likely consequence of an action should be assessed by the sponsoring agency and/or the participating agency, as the case may be, with respect to its setting, its probability of occurring, its duration, its irreversibility, its controllability, its geographic scope, its magnitude, and regulatory requirements.

ConnDOT revised their ECD ([www.ct.gov/opm/lib/opm/Department\\_of\\_Transportation\\_ECD\\_04-13-11.pdf](http://www.ct.gov/opm/lib/opm/Department_of_Transportation_ECD_04-13-11.pdf)) and included additional projects that always require an EIE.

- Construction of new expressway
- Construction of new rail facility
- Construction of new exclusive bus facility
- Construction of new airport

ConnDOT's ECD also includes projects that do not warrant a review pursuant to CEPA, as follows:

#### **Roadway Related Projects**

- Routine maintenance on the existing roadway
- Reconstruction activities on the existing roadway
- Lane additions less than ½ mile in length to existing roads
- Correcting existing substandard roadway geometrics and intersections
- Modifications to or addition of sidewalks, curbs, and streetscape amenities
- Removal of trees for safety purposes.

- Replacement, repair or relocation of existing utilities and existing utility poles
- Rehabilitation, reconstruction or refurbishing of existing active, at-grade railroad crossings
- Construction of wetland mitigation areas

#### **Bridge/Culvert Related Projects**

- All work to existing bridge and culvert crossings up to and including replacement along the existing alignment that does not include additional vehicular lane capacity

#### **Roadside Safety Related Projects**

- Highway safety improvement projects

#### **Drainage Related Projects**

- Routine cleaning, maintenance, and repair of existing drainage system elements
- Retrofitting or redesign of existing drainage system elements
- Safety-related improvements involving drainage system elements
- Installation of stormwater treatment retention and detention basins.

#### **Electrical Related Projects**

- Traffic signal projects
- Intelligent transportation system projects

#### **Bicycle/Pedestrian Projects**

- Projects involving construction of bicycle and pedestrian lanes, paths and multi-use paths

#### **Lighting and Signage Projects**

- Restoration, replacement, upgrading, or addition of highway lighting systems
- Installation or replacement of highway signs

#### **Airport Related Projects**

- Routine maintenance and reconstruction

### Miscellaneous Projects

- Removal and disposal of any hazardous waste materials from the existing right-of-way
- Replacement or repair of highway fencing
- Emergency actions necessary to restore essential travel as declared by the commissioner or governor
- Installation of noise barriers or alterations to existing buildings to provide for noise reduction
- Track and railbed maintenance and upgrades when carried out within the existing right-of-way
- Railroad signal system projects
- Environmental remediation at facilities or property
- Demolition of structures or buildings
- Landscaping
- Routine maintenance and repair of existing port and ferry infrastructure
- Maintenance, renovations and improvements to existing facilities, rest areas, parking lots, weigh stations and other transportation-related maintenance, storage, and office buildings

If an EIE is required, it shall inform decision makers and the public by analyzing the significant environmental issues for all reasonable alternatives. Consistent with an HIA, the EIE shall contribute to the decision-making process and should not be used to rationalize or justify decisions already made. Once completed, the sponsoring agency circulates the EIE to Office of Policy and Management (OPM), Department of Energy and Environmental Protection (DEEP), Council of Environmental Quality (CEQ), Historical Commission, other appropriate state agencies, and the town clerk in the community where the project will occur. The sponsoring agency also publishes notice of the EIE in the Environmental Monitor. A public hearing is required if requested by 25 or more people. Comments from interested parties may be made in writing to the sponsoring agency, typically within 45 days. The sponsoring agency then reviews all comments and prepares a response or modifies the proposal. A record of decision is then made. OPM reviews the decision and determines the adequacy of the EIE and advises the agency of its decision. If the EIE is determined to be inadequate, OPM recommends changes or requests additional information. The sponsoring agency may proceed with the project if it is found to be adequate.

There have been 12 EIEs conducted over the last 2 ½ years. These include three state university projects, two water supply projects, three transportation projects, one flood control project, one housing project, one sewage treatment plant project, and one economic development project. The EIEs conducted over the last two years are as follows with a description of each provided in Appendix E.

**2011**

- 2007 Comprehensive Campus Master Plan for Western Connecticut State University (WCSU)
- Mattabassett District Water Pollution Control Facility Upgrade
- Harbor Brook Flood Control Project
- UConn Health Center New Construction and Renovation Project

**2012**

- The Villages
- New Haven - Hartford - Springfield Line High Speed, Intercity Passenger Rail Project
- New Terminal B Passenger Facility and Associated Improvements at Bradley International Airport
- Stamford Transportation Center Parking and Transit Oriented Development
- UConn Additional Source(s) of Water Supply
- Extension of Public Water System from Middletown to Durham

**2013 (through March)**

- Quinebaug Regional Tech Park
- Eastern Connecticut State University 2008 Campus Plan Update



## 7.0 EXAMPLES OF HEALTH IMPACT ASSESSMENTS CONDUCTED IN THE UNITED STATES

The following HIA case examples illustrate the value of HIAs, the types of findings and outcomes that can result from an HIA, and the diverse applications of this decision-support tool:

- Site-specific housing construction project
- State-level education policy
- City-level energy/utilities program decision

For each example, a sampling of findings and recommendations is listed to illustrate a typical scope and outcomes of an HIA.

### 7.1 JACK LONDON SENIOR HOUSING

**Location:**

Oakland, California

**Organization(s):**

Human Impact Partners, West Oakland Environmental Indicators Project, San Francisco Department of Public Health

**Report Summary:**

A residential and commercial development was proposed at the Jack London Gateway in West Oakland, California where the residents have low socio-economic status (61% earned less than \$30,000 in 1999, as compared to only 26% in Alameda County). Many also face health issues with life expectancy in West Oakland 7.3 years lower than the county as a whole and the mortality rate is higher for every disease reported, particularly cancer and heart disease. Rates of asthma hospitalizations are also significantly higher.

The characteristics of West Oakland that potentially may be related to health include:

- High number of surrounding freeways and proximity to the Port of Oakland where port-related trucking affects noise and air quality, as well as traffic safety, retail vitality, and children's play
- Disinvestment in the neighborhood with little diversity in retail services, food resources, and financial services
- Stress from fear of displacement of life-long residents because of residential development underway or in the planning phase
- Poor quality public schools with about twice as many residents of West Oakland 25 years or older not completing high school, as compared with the county as whole
- Violence and crime in the neighborhood are, and are perceived to be, high

The proposed project included 55 units of low-income senior housing and an additional 14,000 feet of retail space in an underutilized parking lot of an existing shopping plaza. A 57,000 sq. ft. shopping center is currently located on the 7.39 acre site. The site is close to the junction of Interstate 980 and Interstate 880, and is less than 400 feet from Interstate 980. It is also approximately 1,100 feet from the Port of Oakland and Interstate 880. The estimated project cost is \$16 million, and the nonprofit developer is to receive \$4.9 million in affordable housing funds from the City of Oakland.

Indoor and outdoor air quality, noise, safety and retail issues were evaluated. Health issues explored included respiratory illness, high blood pressure, sleep loss, stress, physical injury and physical activity.

**Report Recommendations:**

The HIA's primary recommendations were the inclusions of an air-filtering system, noise protection and re-orientation of the entrance away from the freeway and toward the community. Specifically, the recommendations included:

- **Air Quality:** A central ventilation system with filtration was designed and estimated to cost approximately \$100,000. Due to the small project budget of \$16M, the developer was considering installing filtration systems in each unit even though these types of systems are not as effective as a central ventilation system at providing clean air. One alternative considered was to not include a garden courtyard area, which is one of the other health-beneficial aspects of the project, to offset the additional cost of the central ventilation system. Another option explored was for the HIA working group to assist the developer in securing grant funding to implement the centralized ventilation and filtration system. In addition, the proposed balconies facing the freeway were changed into bay windows.
- **Noise:** Design of the residential building was changed to include a second entry to the building through a noise buffered garden courtyard, and on the side of the building that is away from the freeway. Other benefits of this design change include increasing the interaction with neighbors by entering through the courtyard and allowing seniors to avoid the busier roadways when walking.
- **Safety:** The nonprofit developer had discussions with the Neighborhood Crime Prevention Council about crime in the area and how to mitigate it.
- **Retail Planning:** A survey was conducted to evaluate the community's interest in retail usage. However, the nonprofit developer decided to postpone the retail development and focus on the residential development because they could not secure an anchor tenant.

One resident recently said:

*"The way that they designed this building, it's for your health. We can open up the air purifiers to get fresh air. I'm even on the side facing the freeway but the building is sound-proof, so you can barely hear the traffic. It's so peaceful. Before I lived here, I had to have shots for asthma and go to the hospital for oxygen to get my breathing down to the right level. Since I've lived here, I haven't had to do that once. I love it."* (Source: [Human Impact Partners Fall 2012 newsletter](#))

**Additional Information:**

Completion Date: May 2007

Decision-Level: Local

Sector: Housing

Organization type: Nonprofit Organization

Length: 18 months

**Report Authors:** Jonathan Heller, PhD, Margaret Gordon, and Rajiv Bhatia, MD, MPH

**Report Contact:** Jonathan Heller, Project Director, Human Impact Partners at

[jch@humanimpact.org](mailto:jch@humanimpact.org)

**HIA Report Link:** [www.healthimpactproject.org/hia/us/jack-london-senior-housing](http://www.healthimpactproject.org/hia/us/jack-london-senior-housing)

## 7.2 School Education Integration

**Location:**

St. Paul, Minnesota

**Organization(s):**

Human Impact Partners

**Report Summary:**

This rapid HIA evaluated the projected health effects of Minnesota Bill HF0247/SF0711 that proposes to reauthorize funding of school integration. The legislation would require schools that receive state funding to show progress toward integration and equity in educational opportunities, defined as not simply placing different races in the same school but “bringing students together under conditions of equality, emphasizing common goals, and deemphasizing personal competition.”

School integration and equity in education generally influence health in a number of ways, including health outcomes associated with education such as mortality rate, longevity, health behaviors (such as exercising, smoking, maintaining healthy weight, obtaining timely check-ups and screenings), birth outcomes, and mental and overall health.

The results of the HIA were used to inform each step of the legislative process on the proposed legislation, including House and Senate committee debates.

An overview of the findings is as follows, and summarized in Table 7:

- Children of color who attend integrated schools tend to have higher incomes as adults. Higher incomes make it easier to obtain healthcare, healthy food and physical activity, and a home in a neighborhood with resources like supermarkets, parks and playgrounds. All of these, combined with knowledge of the importance of healthy habits, better support a healthy lifestyle.
- Effects of education on health are passed down through generations, as the educational attainment of adults is connected to the health of their children. Lower educational attainment for parents limits their ability to create healthy environments for their children and to model healthy behaviors. These factors impact children’s health directly and indirectly through cognitive and behavioral development.

- Social consequences of low educational attainment include losses in workforce productivity, lower economic growth from having an inadequately skilled workforce, and more crime and thus more victims. A study in Colorado found that the costs to society for each student who fails to graduate from high school are more than half a million dollars.
  - A comprehensive approach to integration leads to increased cross-race connection in classrooms, which then results in lower levels of prejudice in children, adolescents, and adults. This can lead directly to improved mental and physical health for people of color. It also contributes to greater comfort in future multiracial settings for people of all racial/ethnic backgrounds, contributing to increased success in the workplace and in civil society.

TABLE 7: SUMMARY OF SCHOOL EDUCATION INTEGRATION HIA FINDINGS

(SOURCE: [WWW.HUMANIMPACT.ORG/DOC-LIB/FINISH/7-POLICY-HIAS/296-MINNESOTA-SCHOOL-INTEGRATION-HIA](http://WWW.HUMANIMPACT.ORG/DOC-LIB/FINISH/7-POLICY-HIAS/296-MINNESOTA-SCHOOL-INTEGRATION-HIA))

SUMMARY		
THE IMPACTS OF SCHOOL INTEGRATION FUNDING ON HEALTH (HF0247/SF0711)*		
	THROUGH EDUCATIONAL ACHIEVEMENT	THROUGH CROSS RACE CONNECTION
<b>HEALTH OUTCOMES</b>	<ul style="list-style-type: none"> <li>• Improved life-expectancy and mortality</li> <li>• Improved health behaviors (e.g., exercise, nutrition, timeliness of health care check-ups)</li> <li>• Increased job income and access to benefits, which have many health impacts (e.g., lifespan)</li> <li>• Decreased overweight and obesity</li> <li>• Decreased stress</li> <li>• Improved housing, which has many health impacts (e.g., reduced asthma)</li> </ul>	<ul style="list-style-type: none"> <li>• Improved mental health (e.g., reduced anxiety, depression, stress)</li> <li>• Decreased trauma (physical and mental)</li> <li>• Improved health behaviors (e.g., smoking)</li> <li>• Improved physical health (e.g., high blood pressures, low birth weight births)</li> <li>• Improved social health (e.g., sharing, cooperation, comfort in multiracial settings)</li> </ul>
<b>MAGNITUDE OF IMPACTS</b>	High (220,000 children)	High (840,000 children)
<b>SEVERITY OF IMPACTS</b>	<b>Affects lifespan and daily function</b>	<b>Affects lifespan and daily function</b>
DIRECTION OF IMPACTS		
HF0247/SF0711 does not pass	-	-
HF0247/SF0711 as introduced is passed	~	~
HF0247/SF0711 is amended and passed	~ +	~ +
HF0247/SF0711 is amended and passed and other policies supporting educational equity are also passed	+	+
*See full report for details.		
<ul style="list-style-type: none"> <li>- = positive health outcomes not realized</li> <li>~ = some positive health outcomes realized and some positive health outcomes not realized</li> <li>+ = positive health outcomes realized</li> </ul>		

**Report Recommendations:**

The HIA research and stakeholder panel concluded that there are health benefits associated with the passage of HF0247/SF0711. Recommendations were made to the legislature to pass the bill with some changes, as well as to the Minnesota Department of Education, and to local school districts.

The study found that the bill could be improved and a broader range of programs and strategies could be included to ensure that school districts can achieve true integration. The proposed bill would allow districts to maintain critical progress on measures such as test scores, but that an amended bill would enable a more holistic approach that considers not just racial balance but comprehensive policies and programs that are needed to achieve equity.

Additionally, the HIA recommended that other policies that fully support children of color in integrated schools also need to be implemented so that educational achievement and cross-racial connection can increase significantly. This would improve the health outcomes for all of Minnesota's children.

HF0247/SF0711 was included in an education omnibus bill that was adopted. The legislature revised the language of the bill as recommended by the HIA. The revised language was viewed as an improvement as compared to the original language, but was not exactly as recommended by the HIA. From email exchanges with the original bill's author, it was learned that the HIA recommendation was considered, and that politics played a role in the development of the final language in the legislation that was adopted.

The Minnesota Department of Education reviewed the HIA and is interested in continued discussions about the HIA. As of June 2013, outreach to the school districts about the HIA recommendations had not begun.

**Additional Information:**

Completion Date: April 2013

Decision-Level: State

Sector: Education

Organization type: Foundation, Nonprofit Organization

**Report Authors:** Celia Harris, Jonathan Heller, Marnie Purciel-Hill, and Casey Tsui, Human Impact Partners; Rachel Banay, Harvard School of Public Health (Doctoral Student), Phyllis Hill and Lars Negstad, ISALAH

**HIA Report Link:**

[www.humanimpact.org/doc-lib/finish/7-policy-hias/296-minnesota-school-integration-hia](http://www.humanimpact.org/doc-lib/finish/7-policy-hias/296-minnesota-school-integration-hia)

### 7.3 Advanced Metering Infrastructure

**Location:**

Chicago, Illinois

**Organization(s):**

National Center for Medical Legal Partnership at Boston Medical Center, Citizens Utility Board

**Report Summary:**

The National Center for Medical-Legal Partnership (NCMLP) at Boston Medical Center conducted an HIA of a pilot program run by Illinois' largest electric utility, Commonwealth Edison. The project assessed the potential health effects of implementing advanced metering infrastructure (AMI) in western metropolitan Chicago. AMI is typically associated with new pricing programs as a mechanism for decreasing overall electricity usage and changing when electricity is used. The installation of "smart" meters allows the utility to charge rate electricity users higher prices during peak times when overall demand for electricity is high and the most expensive generators are used to provide this higher demand. In Illinois and many other states, this peak demand is typically during hot summer afternoons. This type of pricing program differs from the typical rate structure where customers are charged one fixed price for each kilowatt-hour of electricity regardless of time of use.

The HIA examined potential health impacts, particularly for vulnerable customers, of three aspects of AMI deployment:

1. How vulnerable populations (i.e., elderly and low-income) might be adversely affected by increased electricity rates necessary to pay for an AMI investment?
2. Will the new AMI pricing program provide benefits to customers or increase costs to vulnerable customers at a time when they can least afford it?
3. Will the use of remote service to disconnect service particularly for nonpayment have adverse impacts on vulnerable populations?

A summary of the predicted health impacts is provided in Table 8.

**Report Recommendations:**

The HIA recommended funding a robust consumer education system; maintaining the current requirement for an in-person site visit to disconnect utilities for nonpaying customers; and designing metrics to measure the impact of the technology on vulnerable populations.

**Additional Information:**

Completion Date: April 2012

Decision-Level: State

Sector: Natural Resources and Energy

Organization type: Foundation, Nonprofit Organization

Length: 22 months

**Report Authors:** Megan Sandel MD, MPH and Emily Suther MA, National Center for Medical-Legal Partnership; Kristin Munsch JD, Citizens Utility Board; Lynne Snyder PhD, MPH, Energy Programs Consortium; and Barbara R. Alexander, Consumer Affairs Consultant

**Report Contact:** Megan Sandel ([megan.sandel@gmail.com](mailto:megan.sandel@gmail.com))

**HIA Report Link:** [www.healthimpactproject.org/resources/body/HIA-of-AMI.pdf](http://www.healthimpactproject.org/resources/body/HIA-of-AMI.pdf)

HEALTH IMPACT ASSESSMENTS STUDY  
 EXAMPLES OF HEALTH IMPACT ASSESSMENTS CONDUCTED IN THE UNITED STATES

TABLE 8: PUBLIC HEALTH IMPACTS OF ADVANCED METERING INFRASTRUCTURE  
 (SOURCE: [WWW.HEALTHIMPACTPROJECT.ORG/RESOURCES/BODY/HIA-OF-AMI-EXECUTIVE-SUMMARY.PDF](http://WWW.HEALTHIMPACTPROJECT.ORG/RESOURCES/BODY/HIA-OF-AMI-EXECUTIVE-SUMMARY.PDF))

Health Determinants & Outcomes	Size of At Risk Group (Direction Negative Unless Otherwise Noted)	Severity/ Likelihood	Quality of Evidence
<b>FUEL POVERTY FROM HIGHER ELECTRICITY COSTS</b>			
Pressure on Household Budgets	All Households with AMI	▼▼▼	●●●
Poor Nutritional Status	12% of Illinois households that are food insecure	▼▼▼	●●●
Decreased Access to Healthcare	10.2% of adults report limited access to physician due to cost	▼▼▼	●●
	12.4% of adults report limited access to prescription Rx due to cost	▼▼▼	●●
Poor Housing Quality	5.2% of households report moderate/severe housing problems	▼	●●●●
<b>HEALTH IMPACTS RELATED TO AMI TECHNOLOGY</b>			
Reduced Air Pollution from Fewer Emissions	28.9% of adults report high blood pressure or cardiovascular disease	=	●●●
	14% children, 13% adults population with asthma		
Remote Connection After Disconnection	All households with AMI	=	●
Remote Disconnect for Nonpayment	47% of households have housing costs >30% of income	▼▼	●●
Exposure to Non-ionizing Radiation	All households with AMI	=	●
<b>UNINTENTIONAL INJURIES AND PREMATURE DEATHS FROM DISCONNECTED SERVICE</b>			
No Access to Electrically Powered Devices for Medical Uses	25% of low-income households use electrically-powered medical device	▼▼	●
Use of Alternative, Risky Sources for Heat & Light	0.2% of poor households nationally heat home with cook stove	▼▼	●●●
	13.3% of households use portable electric space heater		
<b>TEMPERATURE SENSITIVE CONDITIONS MADE WORSE BY EXPOSURE TO HEAT OR COLD</b>			
Decreased Access to Cooling	56.6% of low-income households report no central a/c (37.9% of all households)	▼▼▼	●●●●
Decreased Access to Heating	20.3% of low-income households report electricity as main heating fuel (11.3% of all households)	▼▼	●●●●
Heat and Cold-related Illness (e.g., heat cramps, hyperthermia, hypothermia)	Age (7.2% of households include child <5yrs; 11.2% of households include elder 65+ yrs)	▼▼▼▼	●●●●
	Social Isolation (18% of adults report no social support; 31.6% of low-income seniors live independently)		
	Disability Status (5.6% households include member living with mobility-limiting disability; 10.2% of low-income households include member living with mobility-limiting disability)		
Heart Disease	28.9% of adults report high blood pressure or cardiovascular disease	▼▼▼	●●●●
Respiratory Disease	14% children, 13% adults population with asthma	▼▼▼▼	●●●●
Diabetes	8% of adults report diabetes diagnosis	▼▼	●●●

- = There is evidence to suggest impact, however none was found during the pilot or there was insufficient evidence to comment.
- ▼▼▼▼ Strong impact on many
- ▼▼▼ Strong impact for medium number or moderate impact on many
- ▼▼ Moderate impact on medium number or strong impact on few
- ▼ Moderate impact on few
- 10+ Strong Studies
- 5-10+ Strong Studies or data analysis
- <5 Strong studies OR 5 or more studies of moderate quality
- <5 Studies of moderate quality OR studies with mixed results



## 8.0 CONNECTICUT HEALTH IMPACT ASSESSMENTS

This section describes the three known HIAs that have been completed in Connecticut as of June 2013.

### 8.1 A RAPID HEALTH IMPACT ASSESSMENT OF THE NEW BRITAIN-HARTFORD BUSWAY PROJECT



**Location:**

Hartford, Connecticut

**Organizations:**

Connecticut Association of Directors of Health; Southern Connecticut State University

**Report Summary:**

An HIA was performed to determine the potential health impacts of an express Busway planned to run between New Britain and Hartford, Connecticut. The HIA focused on resident employment, community safety and the possibility of neighborhood gentrification. Data indicated that the increases in employment opportunities offered by reliable transportation such as a Busway would have a positive effect on the health of residents, especially in New Britain and Hartford. However, the current Busway plans could have an adverse effect on community safety, especially around the proposed multi-use trail. The HIA also identified potential gentrification of the neighborhoods connected to the Busway as a possible negative health impact if residents were to be priced out of their current homes. Stakeholder attitudes towards gentrification were identified as a unique challenge – many stakeholders viewed the possibility of neighborhood gentrification as a positive for the region, without considering the potential negative impacts on low-income area residents, many of whom already pay more than 30% of their household income on rent.

HIA findings and recommendations were presented to the Capitol Region Council of Governments (CRCOG) as well as other community stakeholders, including local health departments. The findings of the HIA came after final approval of the overall Busway plan. However, there was still a possibility that some small changes could be made to the plans. The CRCOG will use the data on the report as a baseline assessment of the affected neighborhoods.

The HIA was successful in bringing health impacts of a planning project to the attention of the regional planning group, which has expressed interest in utilizing HIAs for future plans.

**Report Recommendations:**

“Recommendations have been made for increased lighting and police call stations along the multi-use trail, as well as improved barriers between the Busway and adjacent residential neighborhoods. Additionally, a recommendation has been made to monitor community demographics for signs of gentrification, so that plans can be made to mitigate any effects on the economically-insecure residents.”<sup>93</sup>

**Additional Information:**

Date Completed: May 2012

Decision-Level: Regional

Sector: Transportation

Organization type: Academia, Nonprofit Organization

Estimated Cost: N/A: The HIA was completed as master’s thesis by a graduate student in public health.

Length: 5 months

**Report Author:** Moira Lawson, CADH

**Report Contact:** Charles Brown, [cbrown@cadh.org](mailto:cbrown@cadh.org)

**HIA Report Link:** [www.healthimpactproject.org/resources/document/HIA-of-New-Britain-Hartford-Busway.pdf](http://www.healthimpactproject.org/resources/document/HIA-of-New-Britain-Hartford-Busway.pdf)

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93. [www.healthimpactproject.org/hia/us/a-rapid-health-impact-assessment-of-the-new-britain-hartford-busway-project](http://www.healthimpactproject.org/hia/us/a-rapid-health-impact-assessment-of-the-new-britain-hartford-busway-project)

## 8.2 ROUTE 34 EAST-DOWNTOWN CROSSING

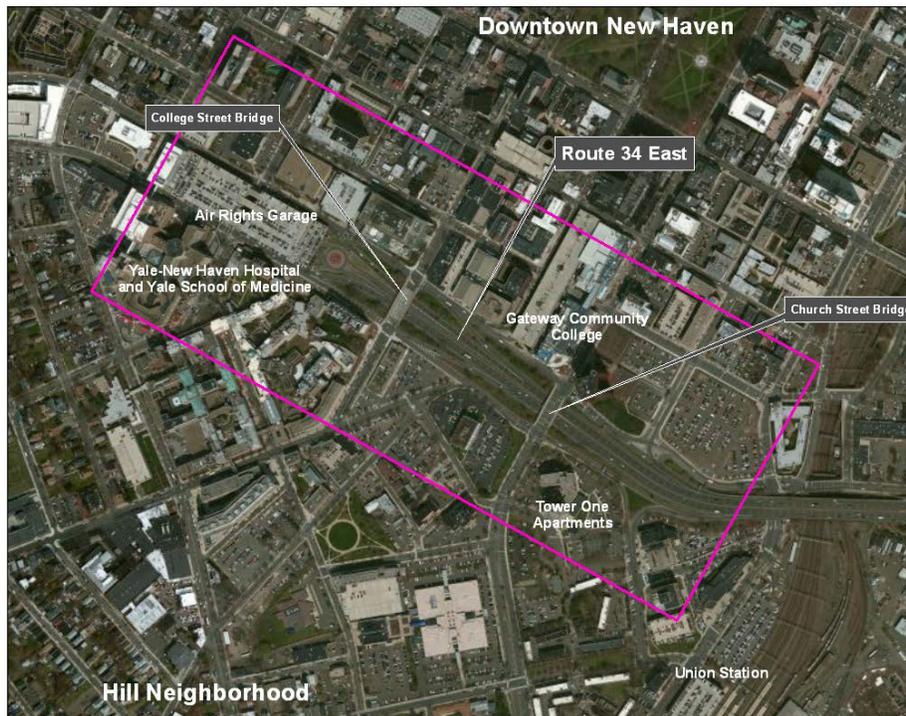


FIGURE 6: AERIAL VIEW OF THE DOWNTOWN CROSSING PROJECT AREA  
(SOURCE: HEALTH IMPACT ASSESSMENT OF PHASE I OF THE DOWNTOWN CROSSING PROJECT: PROMOTING PEDESTRIAN AND BICYCLIST PHYSICAL ACTIVITY AND SAFETY; APRIL 2012; CLARA FILICE, MD, MPH AND GREGG FURIE, MD)

**Location:**

New Haven, Connecticut

**Organization(s):**

Yale School of Medicine, Robert Wood Johnson Clinical Scholars Program

**Report Summary:**

This HIA focused on Phase I of the Route 34 East “Downtown Crossing Project” in the city of New Haven. The Downtown Crossing project is a major transportation planning project which aims to redevelop and replace Route 34 East with ten acres of developable land for use as a dense, mixed-use development and to create a compact, walkable streetscape. The first phase of the project concentrates on converting highway access roads into city streets and connecting incomplete streets. The HIA was designed to inform the decision-making process specifically regarding pedestrian walkways and bikeways in order to promote pedestrian and bicyclist physical activity and safety by minimizing potential injuries and accidents.

The HIA found that the Downtown Crossing Project would result in increased physical activity of local residents. In addition, the HIA found that because there would likely be more bike and foot traffic, there could be an increase in total number of injuries. The findings suggested that by integrating principles of pedestrian and cyclist safety, the project could improve the health of

local residents through promotion of physical activity and protection against injury. The authors also reported that the HIA process fostered interdisciplinary collaboration between academia, private nonprofits and local government. The HIA team plans to monitor whether specific HIA recommendations are included in the final plans for Route 34 redevelopment.

**Report Recommendations:**

Walking and walking safety could be promoted by:

- Prioritizing a connected street pattern
- Utilizing traffic calming features
- Increasing safety and the perception of safety
- Considering the needs of elderly, minority, and child populations
- Minimizing motor vehicle speeds
- Minimizing traffic volume
- Improving pedestrian crossings at intersections
- Improving sidewalks and other pedestrian facilities along streets

Bicycling and bicycling safety could be promoted by:

- Increasing the perception of safety
- Providing specialized bicycle facilities (like cycle tracks or bicycle lanes) along streets where appropriate for road traffic volume
- Locating bicycle facilities along most desirable routes for cyclists
- Maximizing connectivity of bicycle lanes and other bicycle facilities
- Increasing access to secure bicycle storage and shower facilities at destinations
- Implementing many cycling promotion strategies at the same time
- Minimizing cyclist-pedestrian crashes
- Minimizing cyclist-motor vehicle crashes along streets , near intersections, and at intersections

**Additional Information:**

Completion Date: April 2012

Decision-Level: Local

Sector: Transportation

Organization type: Academia

Length: 18 months

**Report Authors:** Gregg Furie, MD; Clara Filice, MD, MPH

**Report Contact:** Georgina Lucas, MSW, Yale School of Medicine's Robert Wood Johnson Clinical Scholars Program, [georgina.lucas@yale.edu](mailto:georgina.lucas@yale.edu)

**HIA Report Link:** [www.healthimpactproject.org/resources/body/Furie-New-Haven.pdf](http://www.healthimpactproject.org/resources/body/Furie-New-Haven.pdf)

### 8.3 RAPID HEALTH IMPACT ASSESSMENT: WEATHERIZATION PLUS HEALTH IN CONNECTICUT

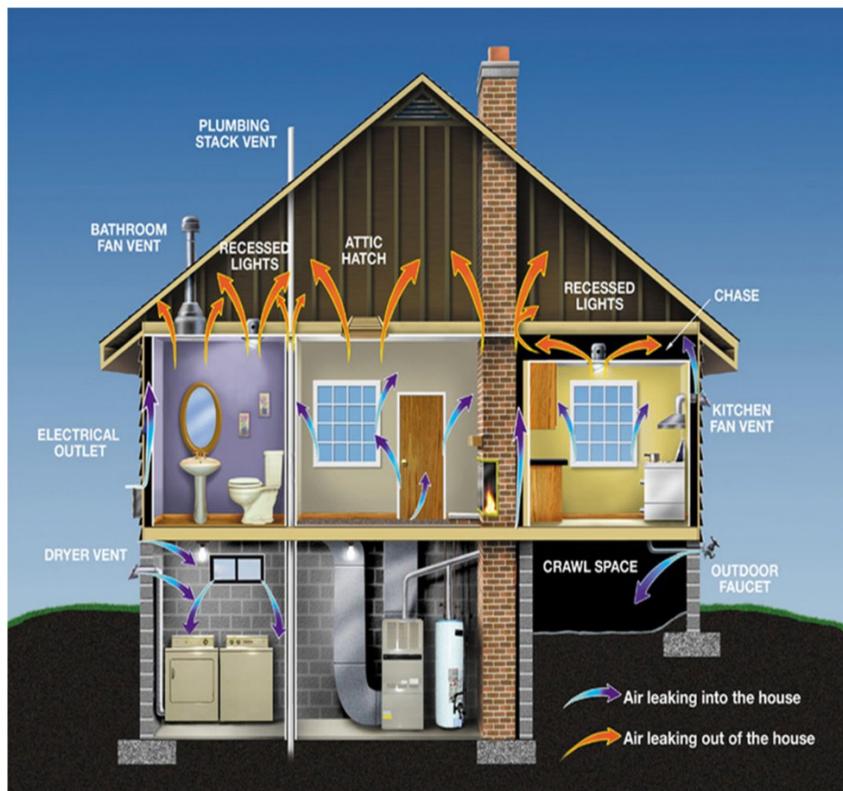


FIGURE 7: BUILDING WEATHERIZATION OPPORTUNITIES

(SOURCE: ENERGY STAR, US EPA [WWW.ENERGYSTAR.GOV/INDEX.CFM?C=HOME\\_SEALING.HM\\_IMPROVEMENT\\_SEALING](http://WWW.ENERGYSTAR.GOV/INDEX.CFM?C=HOME_SEALING.HM_IMPROVEMENT_SEALING))

**Location:**

Connecticut

**Organization(s):** National Association for State Community Services Programs (NASCSPP); Connecticut Association for Community Action (CAFCA); New Opportunities, Inc. (NOI); Tohn Environmental Strategies; National Center for Healthy Housing (NCHH)

**Report Summary:**

Weatherization Plus Health (WPH) is a national initiative designed to improve the energy efficiency, health, and safety of low-income homes through integrated delivery of the US Department of Energy (DOE) Weatherization Assistance Program (WAP) and healthy homes programs. In recognition of the state’s energy efficiency goal, to weatherize 80% of the state’s housing stock by 2030, the Weatherization Plus Health HIA aimed to answer two questions: 1) what health and safety measures should be included in state administered DOE WAP?, and 2) what health and safety measures should be included in state and utility-funded weatherization work?

The HIA also was designed to inform two key policy decisions: 1) specific health and safety measures to be included in the annual state plan submitted by DEEP to DOE; and 2) specific health and safety measures to be included in the three year plan for the utility ratepayer-funded energy efficiency programs (Home Energy Solutions and Home Energy Solutions Income-Eligible). This plan is currently under development and is expected to be approved by the state's Public Utilities Regulatory Authority (PURA) in 2013.

The rapid HIA was funded by DOE, under the WPH initiative, and implemented by NASCSP. Additional funding was provided by a grant from the CDC and the American Public Health Association, which was administered by the NCHH. CAFCA and NOI conducted the HIA with technical assistance from NASCSP, Tohn Environmental Strategies and NCHH.

CAFCA and NOI convened three meetings that brought together stakeholders from state agencies, utilities, healthy homes providers, and weatherization programs to develop scoping pathways, research questions, and a work plan to review findings and to formulate recommendations and reporting and monitoring strategies. The scoping pathway diagram developed to guide the rapid HIA is depicted in Figure 8.

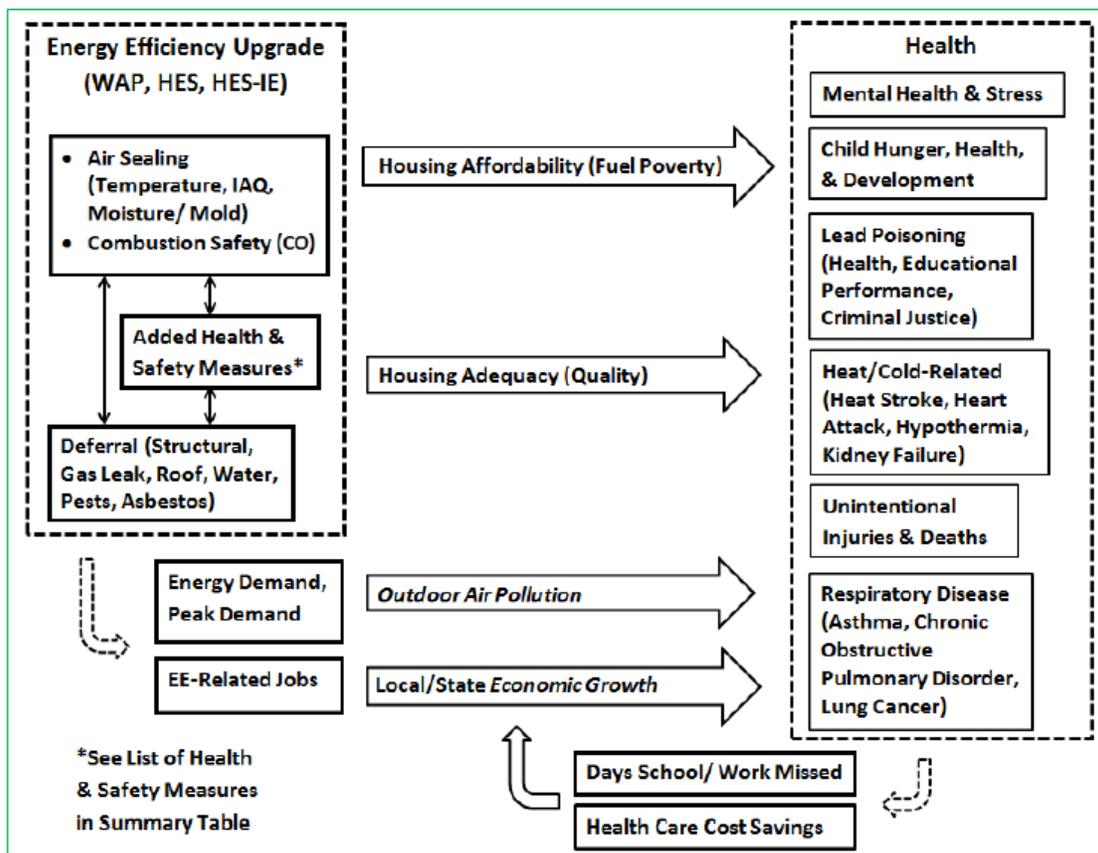


FIGURE 8: ENERGY EFFICIENCY UPGRADES AND POTENTIAL HEALTH IMPACTS  
(SOURCE: RAPID HEALTH IMPACT ASSESSMENT: WPH IN CONNECTICUT; 4/9/13; AMY MCLEAN SALLS, JOHN WILSON, ELLEN TOHN, LYNNE SNYDER; [WWW.HEALTHIMPACTPROJECT.ORG/RESOURCES/DOCUMENT/WEATHERIZATIONPLUSHEALTHCONNECTICUT\\_FULL\\_REPORT-1.PDF](http://WWW.HEALTHIMPACTPROJECT.ORG/RESOURCES/DOCUMENT/WEATHERIZATIONPLUSHEALTHCONNECTICUT_FULL_REPORT-1.PDF))

The HIA introduced systematic evidence and recommendations to maximize positive health outcomes that are expected to support expanded funding for WPH statewide and which have significant projected cost savings for the state (Figure 9). Areas of cost savings include:

1. Energy upgrades produce health benefits for occupants and the society at-large, particularly for low-income families who suffer disproportionately from housing-based health hazards (e.g., fire hazards, asthma, lead poisoning).
2. Health and safety repairs produce significant occupant health benefits and could be integrated with energy upgrades using the existing workforce or through coordinated referrals to appropriate professionals.

Also it is noted that five housing conditions lead to deferrals, preventing a significant number of energy upgrade improvements from proceeding. These conditions include: asbestos on energy systems and in vermiculite insulation; gas leaks (approximately 20% of homes with gas fuel); knob and tube wiring; significant moisture or mold issues; and significant lead hazards from severely deteriorated paint in pre-1978 homes. These deferrals challenge the state’s ambitious goal of weatherizing 80% of Connecticut homes by 2030.

<b>+ Repairs will reduce health inequalities</b>	<b>Reduce Deferrals</b>	<b>Enhance Energy Savings</b>	<b>Significant Health Benefit</b>	<b>Health Benefits/Costs</b>
<b>Repairs Reduce Deferrals, Save Energy &amp; Improve Health</b>				
Minor Moisture Repairs +	✓	✓	✓	X \$1.14/1
Asbestos Abatement	✓		✓	data not available
Gas Leak Detection and Repair	✓			X likely > \$1/1
Knob & Tube Wiring Repair	✓			data not available
Air Sealing with Pest Exclusion +		✓	✓	X likely > \$1/1
Window Replacement of Leaded Single Pane +		✓	✓	X \$1.79/1 (includes energy benefits)
<b>Repairs Create Significant Health Savings</b>				
Injury Prevention Minor Repairs +			✓	data not available
Radon Testing +			✓	X \$51/1
Radon Mitigation (if work increases radon > EPA threshold) +			✓	X \$47/1
Remove Unvented Gas Appliances			✓	X likely > \$1/1
Smoke Alarms +			✓	X \$33/1
Smoking Education and Referral +			✓	X likely > \$1/1
<b>Repairs Recommended by EPA Protocols</b>				
Carbon Monoxide Detectors +				X \$1.25/1
Ventilation Upgrades				data not available

FIGURE 9: HEALTH IMPACTS AND SAVINGS OF ENERGY EFFICIENCY REPAIRS, FINDINGS OF THE CT WEATHERIZATION PLUS HEALTH HIA

(SOURCE: RAPID HEALTH IMPACT ASSESSMENT: WEATHERIZATION PLUS HEALTH IN CONNECTICUT. PRESENTED BY NOI TO THE CONNECTICUT ACADEMY OF SCIENCE AND ENGINEERING – HIA STUDY COMMITTEE; 4/12/13)

The outcomes have implications for addressing health inequities among Connecticut residents due to socioeconomic- and housing-related determinants of health. HIA findings and recommendations were presented to the Connecticut Energy Efficiency Board (EEB), which is appointed by the DEEP commissioner. DEEP has been supportive of the rapid HIA and receptive to its findings and recommendations. EEB will advise PURA at DEEP on the HIA's findings and recommendations.

**Report Recommendations:**

1. Ensure that the Connecticut Weatherization plan submitted to DOE in 2013 provides the flexibility to undertake priority health and safety measures allowed by DOE. (NOTE: this was included in the 2013 plan)
2. Fund energy efficiency programs fully to achieve energy and health/safety benefits
  - o Fund measures that reduce referrals and achieve energy savings and health benefits—"green" highlighted repairs
  - o Identify sustainable funding/financing to support repairs producing significant health/safety benefits—"yellow" and "orange" highlighted repairs (reassess orange repairs)
3. Refer Connecticut residents who receive Department of Social Services benefits to energy efficiency programs, to leverage existing state investments in population health.
  - o Institutionalize referrals to link energy and social services (e.g., vendors to document knowledge of referral partners, healthy homes specialist credential)
4. State health, environment, social service and housing agencies, utilities, and non-governmental organizations should collaborate to secure the necessary resources to sustain funding for added health and safety measures. Establish a task force to identify strategies to secure added resources and improve data sharing.
5. Conduct evaluations to track the health benefits of added health and safety repairs during energy work.
  - o Identify measures that are most effective in reducing health inequities among Connecticut residents.
  - o Support evaluation of the Weatherization Plus Health pilot project funded by the Connecticut Department of Social Services (DSS)

**Additional Information:**

Completion Date: April 9, 2013

Decision-Level: State

Sector: Weatherization and Housing

Organization type: Nonprofit Organization

**Report Authors:** Amy McLean Salls (NCHH), Jonathan Wilson (NCHH), Ellen Tohn (Tohn Environmental Strategies), Lynne Snyder (NASCS)

**Report Contact:** Michael Gurecka, [mgurecka@newoppinc.org](mailto:mgurecka@newoppinc.org)

**HIA Report Link:** [www.healthimpactproject.org/resources/document/WeatherizationPlusHealthConnecticut\\_Full\\_Report-1.pdf](http://www.healthimpactproject.org/resources/document/WeatherizationPlusHealthConnecticut_Full_Report-1.pdf)

## 9. CONNECTICUT'S CAPACITY TO CONDUCT HIAs: RESEARCH RESULTS

### 9.1 INTRODUCTION

Successful HIA programs in other states have depended largely on the capacity of state, and county or local health departments to conduct or support HIAs, such as through direct participation and data support. For example, in states with the most completed and “in progress” HIAs, the majority have involved a local, county or state health department.<sup>94</sup> As of April 2013 the majority of HIAs nationwide have been conducted at the local level (51%) and regional or county level (19%), with only 17% conducted at the state level. However, HIAs conducted at state level have the potential to impact a much larger population. To determine Connecticut's capacity and interest for conducting HIAs, the study effort comprised a review of Connecticut's public health infrastructure at the state, regional and local levels. Additionally, since HIAs offer a broad view of health, including issues outside the traditional public health sector, non-public health agencies and regional planners were interviewed or participated in the focus group session to assess their capacity and interest in using HIAs.

Key focus areas of this review included:

- Describing the state's public health infrastructure and the possible involvement of various public health agencies in HIAs
- Exploring the interest and capacity of LHDDs, RPAs and state agencies to conduct or participate in HIAs
- Identifying nonprofit or academic institutions with the capacity to provide training, support and technical assistance for HIA practitioners
- Identifying the sectors and topics state and local officials, regional planners and academics are interested in exploring through HIAs
- Assessing the need for state agency leadership for institutionalizing the use of HIAs in Connecticut
- Identifying organizations to provide leadership and/or support for conducting HIAs at the regional and local levels

The results of this review indicated that in Connecticut, little was known about HIA practices, no state agency or organization is dedicated to supporting or conducting HIAs, and there is currently no process in place for considering the use of HIAs for any purpose. Furthermore, there is limited capacity on the local level to conduct HIAs in Connecticut, and greater capacity at the state and regional levels.

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94. For HIAs completed and in progress in the US, see [www.healthimpactproject.org/hia/us](http://www.healthimpactproject.org/hia/us).

## 9.2 OVERVIEW OF CONNECTICUT'S PUBLIC HEALTH INFRASTRUCTURE

Connecticut's public health system infrastructure was examined to gain an understanding of the feasibility of potential models and frameworks for institutionalizing an HIA program at various governance levels in Connecticut. The state's public health system differs from that in most other states in that it is not derived from a regional- or county-based system.<sup>95</sup> This has implications for funding, pooling of resources across municipalities, standardization of services provided and capacity for providing essential public health services on a local level. Ultimately, the state's public health infrastructure will influence whether HIA program models that are successful in other states can be successfully implemented in Connecticut.

DPH is the state's lead agency for public health policy and advocacy. DPH has the ultimate responsibility for the overall protection of the public health of the people of Connecticut.<sup>96</sup> DPH's mission is to protect and improve the health and safety of the people of Connecticut by:

1. Assuring the conditions in which people can be healthy;
2. Preventing disease, injury, and disability, and
3. Promoting the equal enjoyment of the highest attainable standard of health, which is a human right and a priority of the state."<sup>97</sup>

The agency provides public health information to the governor, the General Assembly, local communities and the federal government. The information is used to monitor the health status of Connecticut's residents, set health priorities and evaluate the effectiveness of health initiatives.<sup>98</sup> The agency is also a regulator focused on health outcomes, maintaining a balance between assuring the provision of high-quality public health services and the resulting administrative burden on the personnel, facilities and programs being regulated.

DPH is the center of a comprehensive network of public health services, and is a partner with LHDDs for which it provides advocacy, training and certification, technical assistance and consultation, and specialty services, such as risk assessment, that are not available at the local level.

One of the ways that the state fulfills its mission is by ensuring the enforcement of Connecticut General Statutes (CGS) and the Public Health Code. Although LHDDs are distinct government entities, DPH has the authority to delegate enforcement of the Public Health Code to LHDDs and is responsible for ensuring that LHDDs enforce these regulations.<sup>99</sup> DPH also provides assistance and advises LHDDs in the performance of their duties, and may require the enforcement of any law, regulation or ordinance relating to public health.

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95. Pamela Kilby Fox, Adjunct Professor, UCONN Graduate School of Public Health and former Branch Chief, Local Health Administration, DPH

96. DPH. PH Administrative Digest : [www.ct.gov/dph/lib/dph/communications/digest/digest\\_2012\\_final.pdf](http://www.ct.gov/dph/lib/dph/communications/digest/digest_2012_final.pdf)

97. DPH Website: [www.ct.gov/dph/cwp/view.asp?a=3115&q=387178&dphNav\\_GID=1601](http://www.ct.gov/dph/cwp/view.asp?a=3115&q=387178&dphNav_GID=1601)

98. DPH. PH Administrative Digest : [www.ct.gov/dph/lib/dph/communications/digest/digest\\_2012\\_final.pdf](http://www.ct.gov/dph/lib/dph/communications/digest/digest_2012_final.pdf)

99. DPH website: [www.ct.gov/dph/cwp/view.asp?a=3123&Q=388754](http://www.ct.gov/dph/cwp/view.asp?a=3123&Q=388754)

LHDDs play a critical role in Connecticut's public health infrastructure as providers of essential public health services at the local level.<sup>100</sup> Currently, Connecticut has 74 LHDDs serving the state's population across its 169 towns. Of these, 50 are full-time and 24 are part-time. The full-time departments include 29 individual municipal health departments (each serves one municipality) and 21 health districts (each serves two to 18 municipalities). There are also two tribal health departments that have memoranda of understanding with DPH. DPH does not have any authority over them since both departments serve sovereign nations on sovereign land. The tribal health departments are recognized by the Indian Health Services (IHS) (Appendix J: State of Connecticut Local Health Departments and Districts - July 2012). Ninety-four percent of the state's population (3,374,354 people) is served by full-time municipal health departments and health districts (Table 9).

TABLE 9: FULL AND PART TIME LOCAL HEALTH DEPARTMENTS IN CONNECTICUT  
 (SOURCE: ADAPTED FROM [WWW.CT.GOV/DPH/CWP/VIEW.ASP?A=3123&Q=388754](http://www.ct.gov/dph/cwp/view.asp?a=3123&q=388754);  
 (UPDATED 7/29/13)

Type of Department	# of Departments	# of Towns	*Population	Percent Population
<b>Full Time</b>	<b>50</b>	<b>145</b>	<b>3,326,893</b>	<b>94%</b>
<i>Municipal</i>	29	29	1,661,979	46%
<i>Districts*</i>	21	116	1,714,914	48%
<b>Part Time</b>	<b>24</b>	<b>24</b>	<b>203,816</b>	<b>6%</b>
<b>Total</b>	<b>74</b>	<b>169</b>	<b>3,580,709</b>	<b>100%</b>

\*Districts serve 2-8 municipalities.

### 9.3 LOCAL HEALTH INFRASTRUCTURE: FUNDING, STAFFING, SERVICES

Connecticut's lack of a county or regional health system contributes to the state's fractured local health infrastructure.<sup>101</sup> In Connecticut, LHDDs have a wide range of service provision, funding, and staffing levels. In addition, the required standards are antiquated, and there is no national accreditation requirement.<sup>102</sup> While there are 10 essential services<sup>103</sup> that are widely agreed to be the minimum services health departments should provide, there is no state requirement that these essential services be provided by LHDDs and few actually deliver most or all of these services. Staffing for LHDDs varies significantly as well, with local part-time health departments commonly employing only one or two part-time staff. Connecticut statutes for LHDD staffing and provision of services are as follows:

100. DPH website: [www.ct.gov/dph/cwp/view.asp?a=3123&q=388754](http://www.ct.gov/dph/cwp/view.asp?a=3123&q=388754)

101. Regionalization Report: Moving Toward Public Health Equity in Connecticut. Presented by the Governor's Council for Local Public Health Regionalization. Submitted to Governor Rell and the General Assembly. January 2010. Prepared by the DPH.

102. Regionalization Report: Moving Toward Public Health Equity in Connecticut. Presented by the Governor's Council for Local Public Health Regionalization. Submitted to Governor Rell and the General Assembly. January 2010. Prepared by the DPH.

103. Centers for Disease Control and Prevention website: "10 Essential Public Health Services." [www.cdc.gov/nphsp/essentialservices.html](http://www.cdc.gov/nphsp/essentialservices.html)

**Full-time Municipal Health Departments:** Connecticut statutes require that municipalities with populations greater than 40,000 for five consecutive years employ a full-time director of health. Full-time municipal health departments are also required to “provide the services of a licensed sanitarian” to enforce the state’s Public Health Code and to investigate and require the abatement of nuisances.

**Health Districts:** In order to encourage regionalization of local health departments, “towns, cities and boroughs may unite to form district departments of health.” Like full-time municipal health departments, health districts must employ a full-time director of health and are also required to “provide the services of a licensed sanitarian” to enforce the state’s Public Health Code and to investigate and require the abatement of nuisances. Health districts are overseen by a board of health, which exercises the same public health authority as municipalities and includes membership from each of the towns, cities or boroughs served by the district. Towns with populations under 40,000 often join a health district.

**Part-Time Health Departments:** Connecticut statutes require that municipalities with a population under 40,000 employ “the services” of a director of health and “the services of a licensed sanitarian.” There are no requirements for the number of hours for which either position must be contracted. Towns or municipalities are considered to have a part-time health department if the director of health does not work full time.

State funding for LHDDs varies by type of department, and in order to receive state aid, LHDDs must “ensure the provision of” the following eight core services:

- Public Health Statistics
- Health Education
- Nutritional Services
- Maternal and Child Health
- Communicable and Chronic Disease Control
- Environmental Services
- Community Nursing Services
- Emergency Medical Services

## **9.4 HIA WORKFORCE DEVELOPMENT**

Several organizations in the state support Connecticut’s public health workforce in various capacities. These organizations can host or provide training for public health professionals, as well as for professionals from other fields (e.g., education, environment, housing, planning, and transportation) who may be interested in conducting or supporting HIAs. These organizations also have the potential to provide technical assistance on HIAs or may be able to assist in identifying consultants to conduct HIAs.

- **DPH** has public health professional staff who could provide
  - support for conducting an HIA
  - technical assistance on public health issues, such as asthma, obesity, chronic disease
  - guidance in using and analyzing health data
- **The Connecticut Association of Directors of Health (CADH)** is a nonprofit membership organization for Connecticut's directors of health that works to strengthen public health infrastructure throughout the state. CADH supports directors of health in various capacities – through provision of technical assistance and training, support for emergency preparedness planning, and public health policy and advocacy work. The organization is staffed by an executive director, four additional full-time staff, two part-time staff, and has a board of directors consisting of 18 local health directors, a subset of which serve as the executive board.
- **The Connecticut Public Health Association (CPHA)** is a nonprofit membership organization for public health practitioners and members of local health boards that seeks to improve the quality of the public health profession. CPHA hosts an annual conference attended by approximately 350 public health professionals each year. The conference supports professional development, continuing education and sharing of best practices amongst the state's public health professionals. The organization also engages in advocacy activities on behalf of its members to promote important public health policies.
- **The Connecticut-Rhode Island Public Health Training Center (CT-RI PHTC)** is a learning community aimed at improving public health systems in Connecticut and Rhode Island by strengthening the competence of current and future public health professionals.<sup>104</sup> The training center is a partnership between academia, public health agencies and communities, and provides practitioners with opportunities for workforce development and students with practical experiences in the field. The center is part of a national network of 37 Public Health Training Centers funded by the federal [Health Resources and Services Administration \(HRSA\)](#).
- **Public Health in Academia:** Masters degree programs in public health are offered at three universities in Connecticut, including Southern Connecticut State University, UConn and Yale University. UConn and Yale University also offer PhD programs in public health. Undergraduate programs in public health are also available in Connecticut. Additionally, public health policy and research institutes are affiliated with the graduate programs offered by the universities.

## 9.5 SURVEY AND FOCUS GROUP SESSION RESULTS

The study research team conducted a survey of LHDDs regarding their knowledge of HIAs, as well as their department's interest and capacity to conduct or participate in HIAs. An electronic survey was sent to 74 LHDDs and the state's two tribal health departments. A total of 44 LHDDs and one tribal health department (59%) responded to the survey (see Table 11). Additionally, the study research team conducted a focus group session to explore the interest and capacity of health directors, regional planners and academics to conduct and/or participate

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104. CT-RI PHTC: [www.ctriphct.yale.edu/aboutus/index.aspx](http://www.ctriphct.yale.edu/aboutus/index.aspx)

in HIAs on the local and regional level in Connecticut. Directors of health from the 74 LHDDs as well as the directors of the tribal health departments were invited to attend or to send a designee. Invitations also were sent to the directors (or designees) of each of the 14 regional planning agencies and to representatives from each of the state's three graduate programs in public health. The 11 participants in the focus group session included representatives from four regional planning agencies, six LHDDs and one university (See Appendix H: Focus Group Session Participants).

Survey responses were clarified and explored further in the focus group session. Instances where focus group session findings reinforced survey responses are indicated in this section, with the results of the focus group session shown in Section 9.6: Summary of Interviews and Focus Group Session.

TABLE 11: SURVEY RESPONSES BY TYPE OF HEALTH DEPARTMENT/DISTRICT

<b>Survey Responses by Type of Health Department/District</b>			
	<b>Total</b>	<b># Responding to Survey</b>	<b>% Response</b>
Full-Time Health Districts	21	17	81%
Full-Time Municipal Health Departments	29	20	69%
Part-Time Municipal Health Departments	24	7	29%
Sovereign Nations (Tribal Health Districts)	2	1	50%
<b>Total</b>	<b>76</b>	<b>45</b>	<b>59%</b>

### 9.5.1 Survey Demographics

The majority (68%) of survey respondents represented suburban populations, while 21% represented rural populations and 11% represented urban populations. More than half (56%) represented populations greater than 40,000 (n=25).

### 9.5.2 Awareness of HIAs

Survey results showed that 78% of respondents had heard of HIAs prior to the survey, while 18% had not, and 4% were unsure if they had heard of them (Figure 10). The study research team anticipated that a smaller percentage of respondents would have heard of HIAs due to the very early stage of HIA practice in Connecticut. It should be noted that this number could be inflated due to some respondents confusing HIAs with other types of public health assessments.

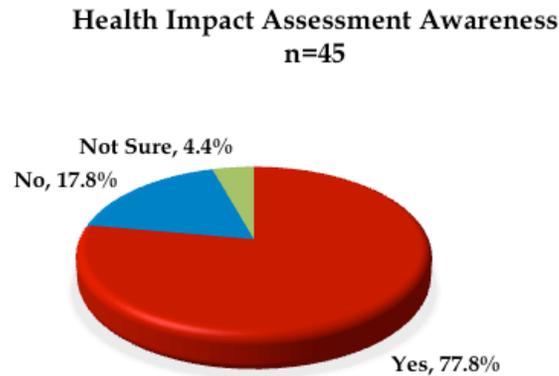


FIGURE 10: HEALTH IMPACT ASSESSMENT AWARENESS

### 9.5.3 Sectors of Most Interest for HIA Use/Application

Respondents were asked to identify the policy areas that would be of most interest to their department if they were to conduct an HIA. The policy area choices were derived from the Human Impact Partners categorization of HIA sectors. Areas of greatest interest for conducting an HIA selected by respondents were Land Use (66%), Environment (63%), Water (56%), Built Environment (54%) and Physical Activity (54%) (see Figure 11). These responses closely reflect the primary services LHDDs provide. Focus group session results reinforced and clarified survey results, particularly concerning land use. Additionally, focus group session participants indicated that consideration of health should be required as part of the formal review undertaken for planning and zoning decisions. Directors of health stated that currently they are not consulted when these decisions are made, which can lead to health problems that are costly or prohibitive to mitigate after projects have begun.

A respondent suggested that HIAs might be better conducted at the regional versus single town and district level, which was reinforced by the focus group session results.

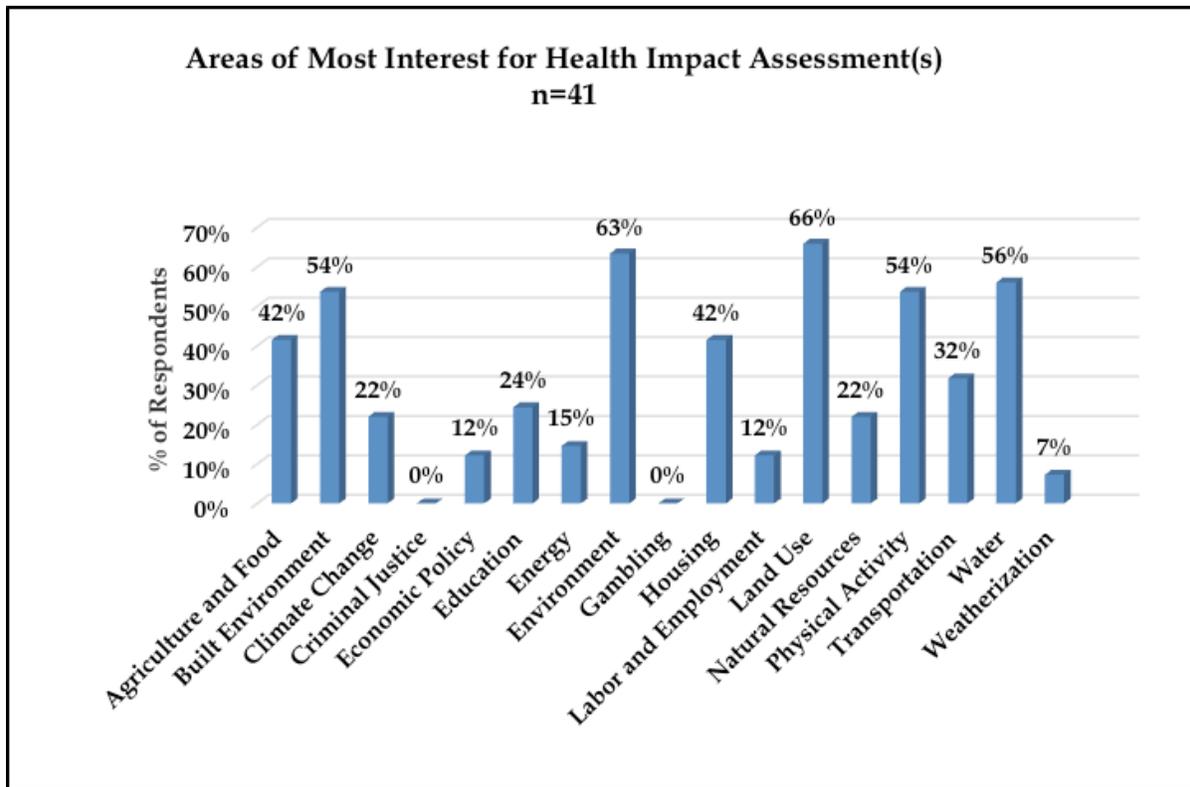


FIGURE 11: AREAS OF MOST INTEREST FOR CONDUCTING HEALTH IMPACT ASSESSMENTS

### 9.5.4 Primary Barriers to Conducting HIA

Respondents were asked to select the greatest barriers to their organization's ability to conduct an HIA at the regional or local level, with the option to select more than one barrier (Figure 12). The primary barrier, selected by 76% of respondents was "Lack of Funding," followed by "Lack of Dedicated Staff" to conduct HIAs, cited by 68% of respondents, and "Lack of Training," cited by 54% of respondents. Only 20% of respondents specified that "Lack of Stakeholder Buy-in" was a barrier to completing HIAs. These results were reinforced by the focus group session results. Several respondents indicated that they did not know enough about HIAs to determine what barriers that they might face.

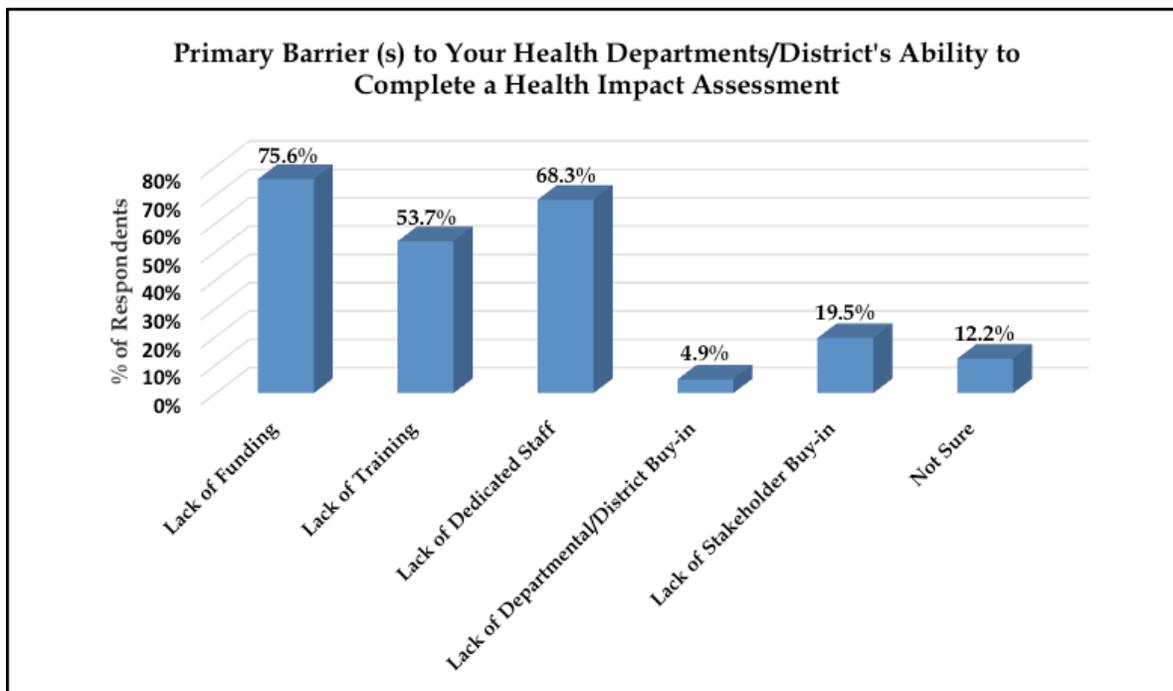


FIGURE 12: PRIMARY BARRIER(S) TO YOUR HEALTH DEPARTMENT'S/DISTRICT'S ABILITY TO COMPLETE A HEALTH IMPACT ASSESSMENT

### 9.5.5 Resources Needed to Conduct HIAs

Respondents were asked an open-ended question regarding the primary resources needed to enable their organization to conduct or participate in an HIA on the regional or local level. The resources identified reflected the primary barriers indicated by respondents, including funding, staff, training and stakeholder buy-in, with the same level of importance given to each. Funding dedicated to conducting HIAs was cited most frequently as the resource needed, with additional staff the second most often cited resource needed for conducting HIAs.

Respondents also indicated that a LHDD would need to have staff with time to work in collaboration with other agencies/entities, or a dedicated staff person to convene meetings locally to examine current policies and identify priority areas for policy change. Three respondents commented that their organization would likely hire an outside consultant to conduct an HIA on the local level.

#### 9.5.5.1 TRAINING

Training was the third most often cited needed resource. Some respondents indicated a need for trained personnel, while others noted a need for training or guidance on HIA activities and methodologies, data collection techniques, and methods of engaging stakeholders.

#### 9.5.5.2 STAKEHOLDER BUY-IN AND THE EDUCATION OF POLICY MAKERS

Several respondents indicated a need for stakeholder buy-in to develop a culture that supports HIAs on the regional or local level. Respondents identified town boards of selectmen, "a broad spectrum of town departments and agencies" and other municipal officials, and the community as key stakeholders who need to be engaged and supportive of HIAs.

One respondent identified the need to educate policy makers regarding HIAs so that they might then promote the value and importance of using HIAs to evaluate local policy and practice changes.

### 9.5.5.3 PERCEIVED BENEFITS OF HIAs TO LHDDs AND COMMUNITIES

56% of respondents indicated that their LHDD would benefit from utilizing HIAs, with only 2% indicating their LHDD would not benefit. The balance of the respondents were unsure of the potential benefits of HIAs to their departments (Figure 13). In addition, 55% of respondents “agree” or “strongly agree” that their LHDD would be interested in being trained to conduct HIAs.

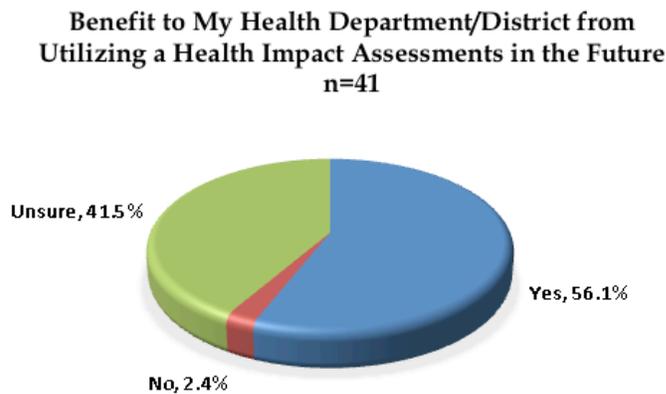


FIGURE 13: BENEFIT TO MY HEALTH DEPARTMENT/DISTRICT FROM UTILIZING A HEALTH IMPACT ASSESSMENT IN THE FUTURE

## 9.6 SUMMARY OF INTERVIEWS AND FOCUS GROUP SESSION

The study research team conducted ten interviews with 13 individuals representing various state agencies, academia and nonprofit public health agencies in the state and nationally (Appendix I: Research Interviews). The purpose of the interviews was to explore interest and capacity of various agencies to conduct or participate in HIAs on a statewide level, as well as to provide training and technical assistance to HIA practitioners. The following provides a list of state agencies and others that were interviewed:

- DPH leadership including the commissioner, deputy commissioners and other agency leaders
- Department of Children and Families (DCF)
- DSS
- DEEP
- ConnDOT
- Participants from academia included two individuals, one from the Southern Connecticut State University MPH program and the other from the Robert Wood Johnson Clinical Scholars Program at the Yale School of Medicine.

- Two individuals from nonprofit public health agencies participated representing CADH and the CT-RI PHTC
- Director of the Health Impact Project at The Pew Charitable Trusts

Results from the focus group session and interviews are summarized and presented in aggregate by topic, as follows.

### **9.6.2 Interest in HIAs**

The vast majority of public health practitioners and state agency leaders that participated in the focus group session and were interviewed had heard of HIAs. In general, the regional planners, as well as ConnDOT and DEEP staff indicated that they had not heard of HIAs previous to their involvement in this study. Of the individuals with prior knowledge, the majority expressed limited knowledge of specific practice standards, methodology and the theory of HIAs, which is likely due to the very early stages of the field in Connecticut. Overall, participants were open to the concept of using HIAs in Connecticut, and perceived a benefit to using HIAs to identify and minimize negative health impacts of projects. Other perceived benefits of using HIAs identified by participants included:

- Potential to advance health equity in Connecticut
- A tool to increase community participation in a structured and constructive manner
- A tool to maximize positive health impacts of policies, programs, projects and plans
- A tool to ensure that the SDH are considered in policy making
- Great potential to improve the health of Connecticut citizens
- Potential cost savings
- A structured methodology to ensure health impacts are considered in fields outside of public health and healthcare particularly, in housing, transportation, energy, education
- A way to increase inter-sectoral and inter-agency cooperation and communication on large state projects and policies

There were concerns about lack of resources and barriers such as funding, timing, staffing, and capacity of their organizations to conduct HIAs. Regional planners and ConnDOT expressed concern about the potential for HIAs to stop a project, which is a view that may be influenced by their experiences with EIAs in the transportation and development sectors. This is a common misconception that can be addressed through education about HIAs. Another concern was that an HIA could be mandated for a project for which it was not an appropriate process. However, individuals who stated this concern generally expressed support for utilizing HIAs in their work in appropriate circumstances and suggested a screening process for the selection of projects.

Agency leaders outside of the health field also expressed support for and understanding of the importance of considering health impacts in their work, which is sometimes referred to as a "Health in All Policies" approach to decision making (see Section 3.1.1). This approach places an emphasis on the consideration of health impacts in policy making outside of the traditional health sector and may employ HIAs as a tool to quantify these impacts, but does not necessarily

entail the use of HIAs. According to one regional planner, "Public health is one critical aspect that needs to be looked at. HIA is part of a potential toolkit to look at for major transportation project assessment."

Specifically, ConnDOT staff suggested that their designers/planners could be trained to consider health impacts in their work, effectively institutionalizing this mindset in the culture of the agency. ConnDOT staff also saw HIAs as a potential tool to use with environmental justice communities to ensure health impacts are adequately considered in these vulnerable communities. ConnDOT is currently developing a data tool with UConn that will incorporate measures of environmental injustice for use in assessing adverse impacts on vulnerable communities and suggested that health data could potentially be incorporated into this tool, as well. Thus, while ConnDOT and DEEP staff were concerned that HIAs might not always be the most appropriate tool for every project, they acknowledged that HIAs can be useful when projects are screened for selection. They also acknowledged the powerful potential impact of considering health in policy making in transportation and planning.

### ***9.6.3 Connecticut's Readiness to Conduct HIAs***

Three HIAs have been conducted in the state and there are a limited number of individuals in the state who have received training specific to HIAs or who have conducted an HIA. Only four out of 24 participants (focus group session and interviews combined) had participated in an HIA previously.

Interviewees indicated that Connecticut is at a very early stage in terms of thinking about using HIAs in policy making. Several state agency leaders indicated that they personally have done some strategic thinking about potential applications of HIAs within the state. They have also had some limited discussions about HIAs with colleagues; however, they are not having formal, regular discussions within their departments or with leaders from other agencies. Several state agency leaders indicated that there is lack of understanding of the SDH and health equity impacts on health outcomes at the state level. These participants emphasized that a first step is to educate policy makers, legislators, and the governor's office about the SDH and the benefits of HIAs for the state in order to build demand for HIAs and the use of a HiAP (Health in All Policies) approach. This would be a useful strategy for initiating a focus on health impacts in state decision making processes.

Many participants who are public health practitioners indicated that they have attended presentations regarding HIAs at national or state meetings and that there has been a general interest and discussion in various forums regarding the potential benefits of using HIAs in Connecticut. One director of health stated,

"In Connecticut the conversation within our professional organizations about HIAs seemed to run parallel with the national discussion. We were looking to have a dialogue with the [DPH] commissioner about this. This study appears to be a good way to do that. It seems like a key route to address social determinants and deal more effectively with prevention."

It was noted by interviewees and focus group session participants that currently there is not a lot of inter-sectoral or inter-agency collaboration at the state level; however, there is an openness

to support more collaboration, and conducting HIAs are viewed as a means of encouraging this. A few participants mentioned that Connecticut's health infrastructure is a potential barrier in that there is no overarching department of health and human services overseeing and coordinating the efforts of the various health and human service agencies in the state: DSS, DCF, DPH, DMHAS (Department of Mental health and Addiction Services), and DSS (Department of Developmental Services). It was noted that this barrier could easily be overcome with leadership from the governor's office and from key state agencies.

Overall, interviewees and focus group session participants indicated that state agency leadership is needed to integrate HIAs into the culture and policy making at the state and regional levels. In terms of readiness, it is apparent that with the exception of a few larger municipalities, establishing an HIA program on the local level is premature, except for when HIAs on local level issues are conducted in collaboration with or through a RPA or local health district. However, there is greater capacity on the state and regional levels to both conduct HIAs and to establish a formalized HIA program.

#### ***9.6.4 Potential Roles of State Agencies for the Use of HIAs in Connecticut***

Interview participants consistently identified DPH as the "logical home" for HIAs, and overwhelmingly identified DPH as the appropriate "champion" for HIAs. DPH agreed that it should have a role in educating, advocating for the use of HIAs, and convening agencies to discuss HIAs as a policy tool. DPH does not, however, see itself as having the capacity to conduct HIAs, to be a "center" for HIAs in terms of training and technical assistance, or to oversee or coordinate a formal HIA program.

When asked, other state agency leaders indicated that they did not envision their agencies being in a position to be leaders in the HIA field in terms of conducting HIAs, providing training and technical assistance to others, or overseeing a formal HIA program. Agency leaders saw their organizations primarily as having supporting roles in establishing an HIA practice in Connecticut through educating policy makers on SDH and the benefit of HIAs in order to create demand for the practice. One agency leader stated that the health and human service agencies (DSS, DPH, DCF, DDS, DMHAS) should promote the use of HIAs in policy and decision making, stating, "We all have to own it if it's going to be meaningful." Two agencies, DCF and DSS, indicated the need for culture change and education within their organizations to have employees understand the SDH, and for decision makers to recognize the need to consider health in program planning and decisions.

ConnDOT uniquely responded with an interest in incorporating this philosophy into the design phase of projects by training planners to understand common health impacts of design and methods to minimize or maximize those impacts. In this way, important health impacts would be considered during the design process for projects, and this would become institutionalized into the department's culture, creating a systems change in planning practice. It was noted that similar shifts are already taking place in terms of a complete streets policy that is used in prioritizing sidewalks and bicycle lanes to allow for increased physical activity and pedestrian and bicyclist safety, as well as efforts that are focused on meeting the needs of environmental justice communities.

## 9.6.5 Resources and Barriers

### 9.6.5.1 TRAINING

Interview and focus group session participants identified a lack of training as a primary barrier for conducting HIAs in Connecticut. Overwhelmingly, directors of health, regional planners and state agency leaders noted that staff do not currently have training to conduct or participate in HIAs, and that training would be necessary in order for HIAs to be conducted properly. DPH noted that the department has limited experience with HIAs, with only very few staff having participated in the recent WPH HIA that was conducted in Connecticut. In addition, these agencies indicated that they do not have the capacity to train others on conducting HIAs; however, they have training and expertise to offer in their respective fields that would be beneficial to the HIA process.

Participants identified several groups with the capacity to provide training and technical assistance for HIAs. It is important to note that the majority of HIAs are completed by individuals who never completed an HIA previously and may not have had significant training in HIAs. Some HIAs are supported with technical assistance and introductory training by grant funders, such as The Pew Charitable Trusts and the Robert Wood Johnson Foundation, or consultants and national experts, such as Human Impact Partners. Therefore, while training and funding for technical assistance throughout the HIA process are needed, individuals essentially learn the process by doing it and can be trained “on the job.”

Several organizations in Connecticut have indicated that they have the capacity to develop training and technical assistance for HIA practitioners. The CT-RI PHTC can organize training, such as half-day or full-day seminars with national leaders in the HIA field. They can also provide a more in-depth training series with a practice component in which cohorts complete a project together with ongoing technical assistance and training. CADH has several staff who have been trained in HIA methodology and one who has completed an HIA. The organization can provide technical support to directors of health and could potentially provide training and technical assistance to other groups given adequate resources. Health Resources in Action, located in Boston, Massachusetts ([www.hria.org](http://www.hria.org)) also has the capacity to provide training on HIA related topics and methodologies.

One state agency leader emphasized the need to train state employees to “look at health in all policies” versus training them to conduct HIAs, and instead hire consultants to conduct them.

“[State employees] should be trained to look at health in all policies. I see a case for **contracting** for this work [to do HIAs]. The manpower, staffing, expertise [to do HIAs] doesn't exist in the government. We should really be looking at helping state employees understand the benefit of them.”

### 9.6.5.2 FUNDING

Funding was a primary issue cited by participants working at all levels of government, academia and nonprofit organizations, with the availability of state funding cited as a barrier to conducting HIAs. Directors of health indicated similar funding issues as identified in the results of the study's survey.

Two health departments stated that in the past year that they were interested in conducting HIAs and applied for funding, but were not funded and were not able to obtain funding elsewhere. Several participants noted that an inability to procure “matching funds” required by grant proposals can also be an issue due to funding constraints.

Potential resources for funding were identified, including foundation and government grants. There are several groups that have funded HIAs and/or HIA “centers”, such as the CDC, ASTHO, National Association City and County Health Officials and The Pew Charitable Trusts.<sup>105</sup>

In addition, other states have funded HIAs by reallocating agency budgets or through permitting fees for state or federally funded projects. In some states, like Oregon, regional or statewide HIA collaborative groups have formed and pooled resources for training or formal inter-agency cooperation and funding agreements have been established to support HIA practice.

Many HIAs are made possible through grant funding, which provides resources for trainers, data support, and sometimes for salaries for existing staff or new positions. This type of funding is usually not sustainable and once the funding ends, the use of HIAs also may end. However, the Health Impact Project reports that when funding ends, infrastructure and interest in HIAs remains due to the:

- Cross-sector relationships that are developed
- Trust established between agency partners
- Awareness of HIAs created among stakeholders
- Capacity developed to conduct or participate in an HIA
- Value of HIAs and the importance of routine consideration of health in decisions outside the health sector
- This legacy of capacity and the knowledge base established provides opportunities for the integration of health in decision making, sometimes without the need for a full-scale HIA.

### 9.6.5.3 STAFF

Directors of LHDDs that participated in the focus group session repeated concerns noted in the study survey, that some LHDDs, particularly part-time local health departments, do not have the staff resources or availability to dedicate to conducting HIAs or to provide data, support or analysis to the local community for an HIA.

### 9.6.5.4 DATA

Access to data is essential for completing an HIA and is needed at several points in the process. During the assessment phase of an HIA, baseline health status and community conditions of the affected populations are described.<sup>106</sup> This can entail utilizing secondary data as well as

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105. Kara Blanker, MPH, The Health Impact Project, The Pew Charitable Trusts; Presentation to CASE Study Committee, 1/25/13 [updated 4/22/13], “Health Impact Assessment --A survey of the diverse applications of the tool”)

106. NRC. “Improving Health in the United States: The Role of Health Impact Assessment” (2011)

collecting primary data to establish health status and community conditions on a local level. For example, in the New Haven Route 34 Connector HIA, the HIA practitioners obtained secondary data from the CDC Behavior Risk Factor Surveillance Survey (BRFSS) to describe the baseline health status of the community and collected primary data to complete an “environmental audit” to describe the walkability and bikeability of each street in the project zone.<sup>107</sup> To conduct the audit, they documented the characteristics of each intersection, length of stoplights, signage, speed limit, presence and condition of sidewalks, etc., in order to establish the baseline community conditions in the project area.<sup>108</sup>

In the assessment phase of an HIA, data is also used to predict the health impacts of the proposed policy, program, project, or plan, as well as any alternatives under consideration.<sup>109</sup> This may involve a literature review or extrapolating from existing data. Finally, data is important in the monitoring and surveillance phase of an HIA in order to monitor health outcomes to determine if the policy, program, project or plan had an effect on health outcomes as predicted.<sup>110</sup>

In Connecticut, there are many data resources that can be utilized to complete an HIA. A sampling of data resources is provided in Appendix K. Data on health outcomes, and on community and environmental conditions are available from state and federal agencies, as well as from Connecticut's academic research institutions and nonprofits. For example, CADH's Health Equity Index, “a community-based electronic tool, *the first of its kind in the nation*, profiles and measures the social determinants (including the social, political, economic, and environmental conditions) that affect health and their correlations with specific health outcomes.”<sup>111</sup> This tool creates community-specific maps illustrating the relationship between health and community conditions on a city/town or neighbourhood level. The tool is currently only available to LHDDs, and in the future may be available to the general public.

Another data resource includes the DPH Environmental Public Health Tracking (EPHT) data portal that is, “part of a national network created in cooperation with the Centers for Disease Control and Prevention (CDC) to provide health, exposure, environmental hazard data and information that communities can use to improve their health.”<sup>112</sup> This tool provides health and environmental data such as rates of cancer, asthma and specific chronic diseases, as well as air and water quality data on a town or county basis.

The availability and usefulness of data to complete HIAs was a consistent theme in interviews, the focus group session and the survey, with differing views being mentioned. Participants from some state agencies and on the local level saw lack of access to data or lack of data sharing across state agencies as a barrier to completing HIAs. Participants reported a need for health outcome data on a census tract or block level in order to establish the baseline health status of communities, and expressed frustration that these data are not publicly available at this time. Conversely, according to one state agency leader, “There are plenty of data,” available to

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107. Filice and Furie. 2012 Rt 34 HIA report

108. Personal communication, Sandra Bulmer, SCSU

109. NRC. “Improving Health in the United States: The Role of Health Impact Assessment” (2011)

110. NRC. “Improving Health in the United States: The Role of Health Impact Assessment” (2011)

111. CADH website: [www.cadh.org/health-equity/health-equity-index.html](http://www.cadh.org/health-equity/health-equity-index.html)

112. DPH website. “Environmental Public Health Tracking.” Updated March 21, 2013.

[www.ct.gov/dph/cwp/view.asp?a=3140&q=386922&dphNav\\_GID=1826](http://www.ct.gov/dph/cwp/view.asp?a=3140&q=386922&dphNav_GID=1826)

complete HIAs. Another state agency leader agreed, stating that the data issue was “overrated” and that the issue was more about how data are used and analyzed, and that qualitative data can be used when quantitative data are not available. Additionally, flexibility of the HIA process provides an opportunity to scale the scope based on available data and to rely on qualitative data if quantitative data are not available.

#### **9.6.5.5 STATE AND MUNICIPAL LEADER AND STAKEHOLDER BUY-IN**

Lack of buy-in from state and municipal leaders was cited as a potential barrier by participants. State agency leaders indicated that the governor’s office, the legislature and other state agencies need to understand the importance of HIAs and an HiAP approach to policy making for HIAs to be successfully utilized in Connecticut. On the local level, participants indicated that the support of municipal leaders and the local community is essential for HIAs to be successful. If there is no buy-in, the recommendations will not be utilized. One participant from a LHDD that participated in an HIA stated,

“The city plan is committed to health - you need people like that. You need that type of buy-in and willingness to come to the table. You also need people that know the community and can do community organizing. You cannot just swoop in, but need local buy-in and knowledge.”



## 10.0 FINDINGS AND RECOMMENDATIONS

### 10.1 FINDINGS

HIAs are a useful emerging methodology in the United States for considering health impacts on a wide range of sectors from social policies to the built environment to transportation. When utilized, HIAs should be conducted during the decision-making process, whether for a policy, program, project or plan. While state health and human service agency leaders, local public health department leaders, and regional planners had a wide range of understanding and experience using HIAs, there was universal support for “Health in All Policies” and a perceived benefit of using HIAs. Some health leaders expressed concern that HIAs could be used as a way to inhibit a project or that the HIA process would become overly burdensome, negating the overall benefits. This is a misconception, since HIAs should not be used to determine if a project should continue. HIAs should be designed to maximize potential health benefits and mitigate potential risks.

Unique data resources are available for use in Connecticut, such as the CADH’s Health Equity Index and DPH’s EPHT data portal, which will provide a foundation for conducting HIAs. Alternatively, issues related to capacity, funding, staff, and access to data would need to be addressed if HIAs were to be used by the state. Thus, conducting and managing HIAs at the state, regional, and/or local level would be dependent on the availability of resources as capacity is developed within the state.

*In the United States, HIAs are a useful emerging methodology for ensuring health impacts are considered in the decision making process for policies, programs, projects, and plans*

The use of HIAs is a relatively new process in the United States that is designed to ensure that often overlooked or unanticipated health impacts are considered in proposed policies, programs, projects or plans. HIAs offer practical recommendations for ways to minimize negative health risks and maximize health benefits, while addressing differential health impacts on vulnerable groups of people. HIAs in the United States have been conducted for decision makers at the federal, state, local, and tribal level across a variety of sectors, including agriculture and food, built environment, housing, labor and employment, natural resources and energy, and transportation. Standard practice is to conduct an HIA before a decision has been made so that HIA recommendations can be used to inform the decision making process.

The first known HIA in the United States was completed in 1999 by the San Francisco Department of Public Health on a proposed living wage ordinance. However, in the United States, the practice did not immediately take hold, as only 27 HIAs had been completed through 2007. Their use has grown since then, with over 238 known HIAs either completed or currently in process as of April 2013.

In Connecticut, the Weatherization Plus Health (WPH) HIA (Full Report: [www.healthimpactproject.org/resources/document/WeatherizationPlusHealthConnecticut\\_Full\\_Report-1.pdf](http://www.healthimpactproject.org/resources/document/WeatherizationPlusHealthConnecticut_Full_Report-1.pdf)) demonstrates the benefits of conducting this type of assessment. This HIA was

designed to answer two questions: 1) what health and safety measures should be included in state-administered DOE WAP?, and 2) what health and safety measures should be included in state- and utility-funded weatherization work? Results of the HIA introduced systematic evidence of the relationship between energy efficiency upgrades and health outcomes, and provided recommendations to maximize positive health outcomes that are expected to support expanded funding for WPH statewide programs. If the recommendations are implemented, they are projected to provide healthcare cost savings in areas such as mental health and stress; child hunger, health, and development; lead poisoning; heat/cold related illnesses; and respiratory diseases.

***State agency health and human service leaders, regional planners, and local public health department leaders support initiatives to include consideration of health impacts in decision making across sectors.***

There is support for adding a broad health perspective into the decision-making process for policies, programs, projects and plans based on interviews with leaders of the state health and human service agencies, and focus group session input from RPAs, LHDDs and academia. This aligns with the WHO's call for a "Health in All Policies" approach to decision making to improve health outcomes worldwide. In addition, this aligns with the US National Prevention Strategy, which calls for collaboration and coordination across sectors to identify opportunities for prevention, health and wellness.<sup>113</sup>

***State agency health and human service leaders, regional planners, and local public health department leaders perceive a benefit to utilizing HIAs to assess and address health impacts of policies, projects, programs and plans in decision making at state, regional and local levels.***

Though their experience with and understanding of HIAs varied, there was generally a perceived benefit to using HIAs as a tool for assessing health impacts in a decision-making process. Leaders who have worked in other states that have been utilizing HIAs for several years indicated the greatest support for the potential benefits of HIA use in Connecticut.

***Social and environmental determinants have a strong influence on health outcomes***

Social determinants are powerful contributors to the health status of communities, with recent studies indicating that only 10% of health outcomes are attributable to factors associated with access to healthcare and only 20% are attributable to genetic predisposition. The remaining 70% of health outcomes are attributable to a confluence of social and environmental factors, as well as behavioral factors, which are largely influenced by social and environmental determinants.

***HIA methodology promotes collaborative decision making***

HIAs utilize a systematic analytical process for assessing potential health impacts, ensuring health disparities are considered, establishing baseline health conditions of a community, and offering strategies to mitigate negative and maximize positive health effects.

The essential elements of an HIA include the following cross-cutting characteristics, which promote collaborative decision making:

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113. [www.cdc.gov/nceh/ehs/Docs/JEH/2012/July-Aug\\_Wendel-HIA.pdf](http://www.cdc.gov/nceh/ehs/Docs/JEH/2012/July-Aug_Wendel-HIA.pdf)

- Engaging stakeholders in the process
- Emphasizing inter-agency collaboration
- Using best available scientific evidence to inform the process

***Not all proposed legislation is screened to assess the potential influence its enactment may have on broader health impacts***

Proposed legislation is currently reviewed by a variety of legislative committees, state agencies, and stakeholders for numerous reasons. Generally, the PHC and DPH screen proposed legislation that has the potential for direct health impacts, but do not necessarily screen proposed legislation in non-health sectors for its impact on health, such as in the areas of transportation, education and housing. A well-developed HIA pre-screening protocol should be used to determine when to conduct an HIA.

***Existing federal and state regulations include protection of public health and health equity***

NEPA and CEPA include protection of public health in their regulations. However, in most cases EISs and EIEs conducted based on these regulations only include a narrow view of health, such as the direct health effects associated with contaminated water and inhalation of asbestos fibers. Broadening the view of health considered in EISs and EIEs to include applicable SDH would better meet the original intent of the existing legislation. Furthermore, analyzing the broader health impacts can be accomplished through strategic use of HIAs in appropriate circumstances. Alaska is a best practice model for using HIAs to support its compliance with NEPA.

Approximately four to eight projects and plans each year are reviewed under CEPA requirements. Since there are potentially other activities that would benefit from an HIA, a multi-agency collaborative effort is needed to screen these programs, projects, and plans to determine if an HIA should be conducted. The State Health Improvement Plan has identified collaboration as a key element in the process, and HIAs provide a framework to facilitate cross-sector collaboration between non-traditional partners. Therefore, HIAs are a model for state agencies on how to work collaboratively across sectors to improve the health of Connecticut residents. Additionally they can be used as a framework for the education of state leaders on the benefit of using HIAs in decision making in Connecticut.

***Connecticut's fragmented local health infrastructure will make it more challenging to incorporate HIAs into the decision-making process at the local level on a sustained basis.***

There are 74 separate LHDDs covering the 169 towns in the state. Catchment areas for RPAs do not coincide with LHDD catchment areas. LHDDs do not have uniform capacity and do not provide uniform services throughout the state. These differences present challenges for the use of HIAs at the local level.

The majority of HIAs completed or in progress in the United States to date have been conducted at the local or regional level. Furthermore, 55% of LHDDs responding to this study's survey indicated an interest in obtaining training for their staff to participate in or conduct HIAs.

In Connecticut, HIAs are most likely to arise on the local and regional level through a grassroots process, similar to states such as Oregon, where community-based organizations and health departments pursue the use of HIAs independently from state level involvement. There is interest and capacity to impact health on the local and regional levels in the state. While there are several LHDDs with the capacity to conduct or participate in HIAs, there is a need for additional education and training.

*The HIA process has been conducted by various organizations, including state agencies, nonprofit organizations, consultants, and academia.*

Most often, HIAs are conducted by multiple entities working collaboratively, including a range of entities such as state agencies, nonprofit organizations, consultants, and academia. Familiarity with and understanding of the methodology by potential collaborators is needed for effective implementation of the HIA process.

Training is available from multiple venues, including formal training programs and web-based resources. Additionally, experience can also be gained from engaging in an HIA process as a collaborator or participant. Most importantly, HIAs need a champion that recognizes their benefit, supportive leadership, and collaborators willing to learn.

*Effectively incorporating health considerations into the decision-making process requires resources*

Resources, including those related to capacity, funding, staff, and access to data and support for data analysis, are needed to effectively conduct HIAs. Connecticut has unique resources that provide a strong foundation for the use of HIAs. However, shortcomings in these areas need to be addressed to effectively incorporate health considerations into the decision-making process for policies, programs, projects and plans on a sustained and institutionalized basis.

Connecticut's resources and areas that need to be addressed include:

**Capacity:**

Only three HIAs have been completed in Connecticut to date, and DPH and CADH have limited HIA experience. Thus, the following are the essential needs that must be addressed for developing HIA capacity for a sustained HIA program within the state:

- Expertise to conduct HIAs
- Knowledge to manage and/or participate in the HIA process
- Ability to screen proposed decisions as to the appropriateness and need for conducting an HIA
- Ability to conduct HIA training and to develop a network of mentors and technical advisors who are available to assist others interested in or conducting HIAs.

The following elements would provide a foundation for the development of HIA capacity in the state:

- An agency or agencies and/or organization(s) to provide leadership and support for the use of HIAs.
- HIA programs for training, technical assistance, and mentoring for those that are interested in conducting HIAs. In-state resources that have the potential for conducting HIA training include CADH and the CT-RI PHTC at Yale University. Both organizations have expressed interest in providing HIA training and developing training curricula for HIA practitioners.
- Creation of demand for HIAs by raising awareness about HIAs among stakeholders and educating them about the value of using HIAs. Typically this is accomplished through meetings and presentations with potential consumers of HIAs (policy makers, decision makers), HIA practitioners, and the general public.
- Integration of considering health impacts into the culture of organizations and agencies that normally do not consider how their policies, programs, projects, and plans affect health.

**Funding:**

Ongoing state budget constraints provide a challenging environment for state agencies to expand services into new areas, such as for funding HIA projects. Some state and human services leaders suggested that health prevention funding is a priority and that funding should be allocated for programs, such as HIAs, that have the potential for healthcare cost savings in future years.

Foundation grants have been used to fund HIA projects, training and capacity building. For example, the Route 34 East-Downtown Crossing was partially funded through the Robert Wood Johnson Clinical Scholars Program. This funding enabled two physicians in a post-doctoral policy fellowship to work on the HIA. The Yale School of Medicine also provided some funding for an institute, which provided training in HIAs to about 40 community leaders. Also, the Weatherization Plus Health HIA in Connecticut was funded by the National Association for State Community Services Programs (NASCSPP).

One of the barriers in obtaining funding for local projects is that many funding organizations require matching funds. This can be problematic due to the structure of Connecticut's local health departments, where small health districts may not be in a position to match funds as compared to other states that have larger county health organizations.

As HIA methodology and use has evolved, foundations that historically provided support to conduct an HIA are interested in having their support go further than funding a single HIA. In 2012, the Health Impact Project issued a call for proposals for developing a self-supporting HIA program. In addition to carrying out two HIAs by the end of the two-year grant period, successful recipients are also required to establish a structure in-place to make the HIA program sustainable. Thus, it is important that the relationships, funding streams and infrastructure needed to sustain an HIA program are characterized by a culture of how health is considered in policies, programs, projects and plans.

**Staff:**

Staff at the state, regional, and local agency levels (i.e., public health and human services agencies, as well as non-health based agencies) may need a variety of skill sets and levels of effort depending on their involvement with the HIA process (e.g., conducting, screening, managing, or participating). The following is an overview of resources that may be necessary to support the use of HIAs:

- **Legislative:** Proposed legislation is currently screened for direct health impacts by the General Assembly's Public Health Committee and DPH, with such legislation then reviewed and commented on during the legislative process, if and when appropriate. Additional staff resources and training may be needed if proposed legislation typically not considered health related is also reviewed to determine if an HIA would be beneficial.
- **Health and Human Service Agencies:** Agency staff may be involved in screening, conducting, managing, and providing technical assistance. HIA activities align well with the skills of some of the staff, though additional staff time and HIA training would be needed.
- **Regional Planning Agencies and Other Agencies:** These agencies may be managing programs, projects or plans in which an HIA would be beneficial. Staff need to be aware of the value of using an HIA, trained to incorporate health impacts into the planning and design process, and provided with time to engage in the HIA process.
- **LHDDs:** There is a wide range of staff resources and skills at the local level, with larger departments and districts likely to be in a better position to support HIA activities such as data collection and analysis, and to provide expertise on health impacts and health equity issues. However, most LHDDs are not in a position to be the lead on an HIA. Most of the full-time local health departments have limited staff with the needed skill set to conduct HIAs. Therefore, training would mostly involve raising awareness, knowing the health-related questions to ask, helping to identify policies, programs, projects or plans that would benefit from an HIA, and being familiar with the technical resources in the state that are available to assist with conducting an HIA. It is noted that due to small staff size and limited resources, part-time local health departments may find it more challenging to participate in or support an HIA.

**Data:**

Findings from the study's focus group sessions and interviews identified varying opinions on resources and barriers associated with data. The following are issues that have been identified:

- Health indicator data on a census tract or block level are needed to establish baseline community conditions
- Support and training for accessing, analyzing and presenting data in a meaningful way is necessary
- Some data useful for conducting an HIA are not currently publicly available
- Access to and sharing of some data across state agencies needs to be coordinated

Connecticut has many data resources available for use in conducting HIAs, including CADH's Health Equity Index,<sup>114</sup> the DPH Environmental Public Health Tracking (EPHT) data portal<sup>115</sup> and certain de-identified DSS/Medicaid Data, which is publicly available. In addition, DPH has a wealth of available health surveillance data that can be used for conducting HIAs. This is one of Connecticut's strengths in terms of developing an HIA program; many other states do not have this type and depth of data available for analysis.

*There are misconceptions about the practice of HIA that lead to concerns that HIAs will be used to inhibit implementation of "good" projects or the HIA process will become so burdensome that overall benefits will be negated*

A concern was cited by regional planners and agencies, such as ConnDOT, that requiring an HIA will be used to attempt to stop or delay projects. This concern can be mitigated by following standard practices, including robust screening and scoping. The goal of an HIA is not to determine whether a proposed project is good or bad overall, nor whether or not a project should continue. Instead, the focus of an HIA is on maximizing potential health benefits and mitigating potential risks. Furthermore, the HIA process provides for positive and negatives of a proposed project to be expressed in a public forum and provides all stakeholders an opportunity to critique the HIA and recommended changes, if any. Often, the HIA process garners support of local communities for proposed projects as health concerns are systematically identified and addressed and health benefits are identified and maximized through the HIA process.

Additionally, concern was expressed that HIAs will follow a process similar to that of mandatory EISs and EIEs, where the intended benefits may get immersed in layers of bureaucracy that result in delaying the permitting process. To date, almost all the HIAs conducted in the United States have been voluntary. Also, in contrast to slowing down the process, HIAs can decrease the time needed for the planning and approval process if human health concerns are addressed directly and early in the process. For example, a previously mentioned HIA assessing an oil leasing rights proposal in Alaska ended up helping to avoid threatened litigation. By addressing the concerns of the Native Alaskan community through the HIA, win-win compromises were identified and implemented. The HIA helped speed the approval of the proposed oil leasing program and resulted in avoiding potential litigation that could have delayed the program for years.

## 10.2 RECOMMENDATIONS

The goal of including health impacts as a consideration in policies, programs, projects, and plans is to maximize health benefits and mitigate negative health impacts for Connecticut's citizens. Presently the state's approach is designed to react after decisions have been made rather than to proactively seek ways during a decision-making process to maximize health benefits and mitigate negative health effects. More effort is needed to prevent disease and keep people healthy. The added benefit of a proactive health approach to decision making is the potential to reduce the cost of the healthcare system over the long term, or at least prevent the shorter-term, unintended consequences of decisions, which in turn, could lead to increased healthcare costs in the future.

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114. [www.cadh.org/health-equity/health-equity-index.html](http://www.cadh.org/health-equity/health-equity-index.html)

115. [dpheph.t.ct.gov/Pages/Default.aspx](http://dpheph.t.ct.gov/Pages/Default.aspx)

HIA methodology utilizes a systematic analytical process for assessing potential impacts, uses the best available scientific evidence to inform the process, and offers strategies to mitigate negative health effects and maximize positive health effects. Based on numerous best practice case studies that show the benefit of HIAs, the CASE study committee recommends that HIAs be used in Connecticut when

- the pre-screening process shows that the HIA is expected to add value to the decision-making process
- the decision-making timeline allows for the integration of new information
- connections to health are not directly obvious

The goal is not just to conduct HIAs, but to use HIAs as a catalyst for including health considerations at the decision-making level for policies, programs, projects, and plans. To achieve this goal, it is important that an entity lead the effort to

1. Establish and use a pre-screening protocol to determine when an HIA should be conducted
2. Use existing regulations, mechanisms, and processes to the extent possible for conducting HIAs.
3. Encourage and support HIA training programs at the state, regional and local levels to create awareness of HIAs and their value for decision makers.

The specific CASE study committee recommendations are as follows:

***PHC and DPH should assume a leadership role in making health a consideration in the decision-making process for policies, programs, projects, and plans***

The PHC and DPH should assume a leadership role, with support from the governor's office, to ensure the consideration of health in applicable policies and that HIAs are used when appropriate, as determined through a pre-screening protocol, for proposed legislation, programs, projects and plans. This would expand the current review process by the PHC and DPH of proposed legislation that has a direct health impact to include pre-screening a subset of all legislation to assess the potential influence its enactment may have on health.

The essential elements of an HIA include engaging stakeholders and emphasizing inter-agency collaboration. The recommendation that DPH should assume a leadership role does not imply that DPH will conduct all HIAs, be the only agency with HIA capacity, or will lead all HIA efforts. Rather, it should be DPH's responsibility to advocate, guide, and provide assistance to ensure that public health will be considered in the decision-making process when there is potential for maximizing public health benefits and minimizing their negative impacts.

***Develop a pre-screening protocol that outlines the appropriate use of HIAs in policies, programs, projects and plans***

A multi-agency "Health Review Team" led by DPH and PHC should develop a pre-screening protocol that includes criteria for selecting policies, programs, projects and plans that would

benefit from an HIA. It has been found that failing to develop a workable pre-screening protocol is one of the most common challenges in the implementation of a sustainable HIA program. At a minimum, the pre-screening protocol should include the following elements:

- Criteria for determining when it would be beneficial to conduct an HIA
- Responsible parties for making the decision to conduct an HIA
- Agency responsible for leading the HIA
- Funding source for conducting the HIA

*Develop pathways for considering health impacts in policies, programs, projects, and plans.*

HIAs should be considered for use at all branches and levels of government, including in the legislative process and by state, regional, and local agencies involved in the decisions on policies, programs, projects, and plans. The following are recommendations on how to achieve this at each level:

- Proposed legislation should be reviewed using the pre-screening protocol for the potential impact that its enactment would have on health, especially legislation in areas not normally considered to have a health impact. Broadening the review function can be achieved by building on existing review mechanisms already used by the PHC, DPH and OPM.
- NEPA and CEPA regulations include the protection of public health. Historically, EISs rarely include a specific analysis on public health impacts, though they commonly indirectly address health through, for example, analysis of potential impacts on air or water quality. Because the steps of an HIA mirror those of an EIS, HIAs may be used to meet the requirements of health analysis in NEPA and CEPA. More recently, states such as Alaska have broadened the public health review requirement by including HIAs as a best practice when there is a potential health impact. This model should be used in Connecticut. For example, DPH should expand its involvement in the EIE process by not only commenting on health risks from water supply and specific contaminant issues, but also including a broader view of health impacts during the EIE process. This review could be conducted in consultation with DPH's Environmental Health Section.
- The recommended multi-agency "Health Review Team" should oversee utilization of the pre-screening protocol for recommending programs, projects, and plans at all levels and for all sectors that would benefit most from the HIA process.
- Non-health planners and designers should be trained to include health as a design criterion. This training mechanism, whether tied directly to an HIA being conducted or not, will provide the basis for changing the culture of how these organizations consider health in the planning and design process. Institutionalization of health considerations into the existing processes will provide long-term and sustainable benefits. Similarly, training should be conducted to ensure that the SDH are integrated into the planning and design process. Also, DPH should be involved throughout the process to provide guidance and to ensure that best practice procedures are being followed.
- Connecticut's local health infrastructure is fragmented and may make it challenging to implement an HIA program at the regional and/or local levels. Many local health departments may not have the staffing and/or resources required to effectively conduct

or participate in an HIA; however, many have expressed a desire to receive HIA training. The use of HIAs at this level should begin with training to educate staff on the intent and use of the HIA process to prepare them to collaborate in an HIA process if one were conducted in their jurisdiction. This type of training will raise awareness of and provide an understanding of the use and benefits of HIAs.

### *Increase State HIA capacity*

DPH should provide leadership, with support from CADH, CT-RI PHTC, and Connecticut universities with public health academic programs, for the state's effort to include the HIA process in its decision making by providing expertise to conduct HIAs, serving as a catalyst for adequate training opportunities, and providing technical assistance to agencies and organizations. Human service and non-health agencies should have specific roles and responsibilities for incorporating health considerations into their policies, programs, projects and plans.

Three actions are needed to achieve this recommendation: 1) raise awareness for HIAs; 2) create demand for the appropriate use of HIAs in decision-making processes; and 3) develop capacity to carry out HIAs effectively.

- Raise Awareness for HIAs
  - Training is necessary at the state, regional and local levels to create awareness of the HIA process and the ways in which it adds value to decision makers. The development of a training curriculum can be accomplished through a multi-organization collaborative effort that could include DPH, CADH, CT-RI PHTC, and Connecticut universities with public health academic programs.
  - All state agencies should be familiar with the use of HIAs as a methodology for identifying the health impacts of their agency's actions.
  - Training for non-health planners and designers, such as ConnDOT staff, should be provided so that health impacts are included in the planning and design processes.
- Create Demand for the Appropriate Use of HIAs in Decision-Making Processes
  - The development of a pre-screening protocol, along with raising awareness for HIAs, will create the demand for using HIAs in the decision-making process when appropriate.
  - Typically this is accomplished through meetings and presentations with potential consumers of HIAs (policy makers, decision makers) and HIA practitioners.
- Develop Capacity to Carry Out HIAs Effectively
  - Create an HIA Resource Center comprising organizations willing to provide support and guidance for those interested in conducting HIAs. Resource center organizations should develop staff expertise through participating in or conducting an HIA.

Use of consultants to conduct and lead an HIA should be considered where staff resources and capacity to conduct HIAs is limited.

*Initiate a demonstration HIA program to strengthen the HIA infrastructure and determine the best sustainable approach for the use of HIAs in Connecticut*

Considering that the use of HIAs is a relatively new methodology in the United States and that the state has had limited experience in using HIAs, it is recommended that a demonstration HIA program be piloted for housing issues and the EIE process to determine the best practices approach for Connecticut, given its unique set of resources and constraints. The ultimate goals are to develop leadership and build the cross-sector relationships, capacity, infrastructure and funding mechanisms needed to ensure the routine consideration of health in decisions made outside the health sector. The goals of this program would be to develop the necessary organizational, technical assistance, training, data and HIA capacity, as well as an adaptable pre-screening protocol, that is needed to ensure that public health can effectively be considered in a wide range of sector-specific decisions. This approach is consistent with the focus of major national funders, such as the Health Impact Project, that have recently shifted their funding strategy to HIA program grants, instead of funding individual HIAs.

The development of the suggested pre-screening protocol by the Health Review Team should be done in conjunction with conducting the demonstration HIAs. The verification of the pre-screening protocol will provide the foundation for the pre-screening protocol that can be used for all sectors. This multi-agency approach, combined with other important partner organizations, will also provide the framework for the multi-agency collaborative effort needed to effectively consider health impacts in the decision-making process.

The last of six steps in any HIA is evaluation and monitoring. This step is a critical aspect of the HIA process, as it helps track whether or not predicted health outcomes actually come to fruition, as well as establishes the value for HIA – whether or not it improved a decision or avoided an unintended consequence. The monitoring and evaluation step of an HIA should include a robust impact evaluation that may include surveys of stakeholders and decision makers involved with the HIA. Depending on the findings, this evaluation should provide guidance for the improvement and implementation of an HIA program in Connecticut and an expansion of the HIA program into other sectors.

### **HIA Housing Program**

Housing policies, programs or projects should be considered for the demonstration HIA Housing Program, as health issues are typically not considered in this sector. DPH leadership and housing advocates are supportive of using HIAs to enhance housing policies, programs, and projects. Additionally, the Department of Housing (DOH) is a new state agency, which provides a unique opportunity to incorporate health considerations as part of the department's culture from its inception.

The HIA Housing Program should include the following approach to identify appropriate housing-related policies, programs, and projects:

- The PHC and Housing Committee, in consultation with DPH and DOH, should identify housing legislation that has the potential to benefit from an HIA process.
- In collaboration with the DOH, other cognizant state agencies, and the Connecticut Fair Housing Center, DPH should identify a statewide housing policy, program, project, or plan that is being developed or modified that would benefit from conducting an HIA.

The HIA Housing Program must work within the projected timeline of the selected policies, programs, projects, or plans that will be reviewed. The intent of conducting this program is to provide policy makers with information to make well-informed decisions that include consideration of predicted health impacts, not to stop or delay a policy, program, or project.

#### **HIA EIE Program**

A demonstration HIA should be performed as part of the EIE process, when appropriate. A timeline should be established for initiating this HIA, with the suggestion that this occur within three years. The HIA conducted will provide the foundation for including a best-practice model into existing NEPA and CEPA regulations.

### **10.3 CONCLUDING REMARKS**

Policies, programs, projects and plans that maximize positive health effects and mitigate negative health effects will make Connecticut a healthier place to live for its residents, promote a healthy workforce for its businesses, potentially avert unnecessary healthcare costs in the future, and contribute to disease prevention. HIAs use a flexible, yet systematic, analytical process to achieve these goals and to ensure health is considered during the development of policies, programs, projects and plans, when applicable.

## LIST OF APPENDICES

APPENDIX A - Adelaide Statement on Health in All Policies. WHO, Government of South Australia, Adelaide 2010

APPENDIX B: HIA Sectors

APPENDIX C: National Practice Standards

APPENDIX D: International Association of Impact Assessment (IAIA)

APPENDIX E: 2011 - March 2013 Connecticut Environmental Impact Evaluations

APPENDIX F: LHDD's HIA Capacity Survey

APPENDIX G: LHDD's HIA Capacity Survey - Results

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APPENDIX J: State of Connecticut Health Districts and Departments - July 2012

APPENDIX K: Sampling of Data Resources

APPENDIX L: Study Committee Meetings and Guest Speakers



## **APPENDIX A**

**ADELAIDE STATEMENT ON HEALTH IN ALL POLICIES. WHO,  
GOVERNMENT OF SOUTH AUSTRALIA, ADELAIDE 2010**

## Adelaide Statement on Health in All Policies

*moving towards a shared governance for health and well-being*

Taking account of health  
means more effective government

More effective government  
means improved health

*Report from the International Meeting  
on Health in All Policies, Adelaide 2010*

**The Adelaide Statement on Health in All Policies** is to engage leaders and policy-makers at all levels of government—local, regional, national and international. It emphasizes that government objectives are best achieved when all sectors include health and well-being as a key component of policy development. This is because the causes of health and well-being lie outside the health sector and are socially and economically formed. Although many sectors already contribute to better health, significant gaps still exist.

The Adelaide Statement outlines the need for a new social contract between all sectors to advance human development, sustainability and equity, as well as to improve health outcomes. This requires a new form of governance where there is joined-up leadership within governments, across all sectors and between levels of government. The Statement highlights the contribution of the health sector in resolving complex problems across government.



Adelaide Statement on Health in All Policies  
moving towards a shared governance for health and well-being

### Achieving social, economic and environmental development

A healthy population is a key requirement for the achievement of society's goals. Reducing inequalities and the social gradient improves health and well-being for everyone.

Good health enhances quality of life, improves workforce productivity, increases the capacity for learning, strengthens families and communities, supports sustainable habitats and environments, and contributes to security, poverty reduction and social inclusion. Yet escalating costs for treatment and care are placing unsustainable burdens on national and local resources such that broader developments may be held back.

This interface between health, well-being and economic development has been propelled up the political agenda of all countries. Increasingly, communities, employers and industries are expecting and demanding strong coordinated government action to tackle the determinants of health and well-being and avoid duplication and fragmentation of actions.

### Need for joined-up government

The interdependence of public policy requires another approach to governance. Governments can coordinate policy-making by developing strategic plans that set out common goals, integrated responses and increased accountability across government departments. This requires a partnership with civil society and the private sector.

Since good health is a fundamental enabler and poor health is a barrier to meeting policy challenges, the health sector needs to engage systematically across government and with other sectors to address the health and well-being dimensions of their activities. The health sector can support other arms of government by actively assisting their policy development and goal attainment.

To harness health and well-being, governments need institutionalized processes which value cross-sector problem solving and address power imbalances. This includes providing the leadership, mandate, incentives, budgetary commitment and sustainable mechanisms that support government agencies to work collaboratively on integrated solutions.

### Health in All Policies approach

The approach described above is referred to as 'Health in All Policies' and has been developed and tested in a number of countries. It assists leaders and policy-makers to integrate considerations of health, well-being and equity during the development, implementation and evaluation of policies and services.

Health in All Policies works best when:

- a clear mandate makes joined-up government an imperative;
- systematic processes take account of interactions across sectors;
- mediation occurs across interests;
- accountability, transparency and participatory processes are present;
- engagement occurs with stakeholders outside of government;
- practical cross-sector initiatives build partnerships and trust.

Tools and instruments that have shown to be useful at different stages of the policy cycle include:

- |  |   |
|--|---|
| <ul style="list-style-type: none"><li>• inter-ministerial and inter-departmental committees</li><li>• cross-sector action teams</li><li>• integrated budgets and accounting</li><li>• cross-cutting information and evaluation systems</li><li>• joined-up workforce development</li></ul> | <ul style="list-style-type: none"><li>• community consultations and Citizens' Juries<sup>1</sup></li><li>• partnership platforms</li><li>• Health Lens Analysis<sup>2</sup></li><li>• impact assessments</li><li>• legislative frameworks</li></ul> |
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### Drivers for achieving Health in All Policies

Building a process for Health in All Policies requires using windows of opportunity to change mindsets and decision-making cultures, and to prompt actions. Key drivers are context specific and can include:

- creating strong alliances and partnerships that recognize mutual interests, and share targets;
- building a whole of government commitment by engaging the head of government, cabinet and/or parliament, as well as the administrative leadership;
- developing strong high-level policy processes;
- embedding responsibilities into governments' overall strategies, goals and targets;

<sup>1</sup> Citizens' Juries - [www.jefferson-center.org/](http://www.jefferson-center.org/)

<sup>2</sup> Health Lens Analysis - [www.health.sa.gov.au/pchs/HIAP/health-lens.htm](http://www.health.sa.gov.au/pchs/HIAP/health-lens.htm)

- ensuring joint decision-making and accountability for outcomes;
- enabling openness and full consultative approaches to encourage stakeholder endorsement and advocacy;
- encouraging experimentation and innovation to find new models that integrate social, economic and environmental goals;
- pooling intellectual resources, integrating research and sharing wisdom from the field;
- providing feedback mechanisms so that progress is evaluated and monitored at the highest level.

It is not unusual that such a process can create tensions within government as conflicts over values and diverging interests can emerge. Resolution can be achieved through persistent and systematic engagement with political processes and key decision-makers.

#### New role for the health sector

To advance Health in All Policies the health sector must learn to work in partnership with other sectors. Jointly exploring policy innovation, novel mechanisms and instruments, as well as better regulatory frameworks will be imperative. This requires a health sector that is outward oriented, open to others, and equipped with the necessary knowledge, skills and mandate. This also means improving coordination and supporting champions within the health sector itself.

New responsibilities of health departments in support of a Health in All Policies approach will need to include:

- understanding the political agendas and administrative imperatives of other sectors;
- building the knowledge and evidence base of policy options and strategies;
- assessing comparative health consequences of options within the policy development process;
- creating regular platforms for dialogue and problem solving with other sectors;
- evaluating the effectiveness of intersectoral work and integrated policy-making;
- building capacity through better mechanisms, resources, agency support and skilled and dedicated staff;
- working with other arms of government to achieve their goals and in so doing advance health and well-being.

#### Next steps in the development process

The Adelaide Statement is part of a global process to develop and strengthen a Health in All Policies approach based on equity. It contributes to a critical debate that Member States and Regions of the World Health Organization (WHO) are now engaged in. The Statement reflects the track record of countries that have already gained experience in implementing such an approach.

The Statement provides valuable input into the World Conference on Social Determinants of Health in Brazil 2011, the 8<sup>th</sup> Global Conference on Health Promotion in Finland 2013, and preparations for the Millennium Development Goals (MDGs) post-2015.

#### Background and acknowledgements

Health is a positive concept emphasizing social and personal resources, as well as physical capacities. Therefore, health promotion is not just the responsibility of the health sector but goes beyond healthy lifestyles to well-being and supportive environments.

The Adelaide Statement was developed by the participants of the *Health in All Policies International Meeting, Adelaide 13–15 April 2010*. The Government of South Australia together with WHO invited 100 senior experts from a wide range of sectors and countries to discuss the implementation of the Health in All Policies approach. The main aim of the meeting was to move the agenda forward by identifying key principles and pathways that contribute to action for health across all sectors of government, and engage the health sector in contributing to the goals of other sectors.

The 2010 meeting drew on the report of the WHO Commission on Social Determinants of Health 2008 and other significant documents from the ILO, OECD, UNDP, UN-ECOSOC, UNESCO, UNICEF, World Bank and the World Economic Forum. It was also able to build on earlier work by WHO including the Declaration of Alma-Ata on Primary Health Care 1978; the Ottawa Charter for Health Promotion 1986; the Adelaide Recommendations on Healthy Public Policy 1988 and subsequent global health promotion conferences; the Gothenburg Consensus Paper on Health Impact Assessment 1999; and the Declaration on Health in All Policies, Rome 2007.

Since 2007 the State Government of South Australia has been playing a leading role in promoting knowledge exchange on Health in All Policies within Australia and internationally. Their initiatives have included holding a Health in All Policies conference in 2007 to launch their work; providing continuing support to central and other agencies across their State Government; publishing guidance materials on their methods for Health in All Policies; and holding the International Meeting on Health in All Policies, co-sponsored with WHO, in April 2010.

Adelaide Statement on Health in All Policies  
moving towards a shared governance for health and well-being

Examples of joined-up government action

Sectors and Issues	Interrelationships between health and well-being
Economy and employment	<ul style="list-style-type: none"> <li>Economic resilience and growth is stimulated by a healthy population. Healthier people can increase their household savings, are more productive at work, can adapt more easily to work changes, and can remain working for longer.</li> <li>Work and stable employment opportunities improve health for all people across different social groups.</li> </ul>
Security and justice	<ul style="list-style-type: none"> <li>Rates of violence, ill-health and injury increase in populations whose access to food, water, housing, work opportunities and a fair justice system is poorer. As a result, justice systems within societies have to deal with the consequences of poor access to these basic needs.</li> <li>The prevalence of mental illness (and associated drug and alcohol problems) is associated with violence, crime and imprisonment.</li> </ul>
Education and early life	<ul style="list-style-type: none"> <li>Poor health of children or family members impedes educational attainment, reducing educational potential and abilities to solve life challenges and pursue opportunities in life.</li> <li>Educational attainment for both women and men directly contributes to better health and the ability to participate fully in a productive society, and creates engaged citizens.</li> </ul>
Agriculture and food	<ul style="list-style-type: none"> <li>Food security and safety are enhanced by consideration of health in food production, manufacturing, marketing and distribution through promoting consumer confidence and ensuring more sustainable agricultural practices.</li> <li>Healthy food is critical to people's health and good food and security practices help to reduce animal-to-human disease transmission, and are supportive of farming practices with positive impacts on the health of farm workers and rural communities.</li> </ul>
Infrastructure, planning and transport	<ul style="list-style-type: none"> <li>Optimal planning for roads, transport and housing requires the consideration of health impacts as this can reduce environmentally costly emissions, and improve the capacity of transport networks and their efficiency with moving people, goods and services.</li> <li>Better transport opportunities, including cycling and walking opportunities, build safer and more liveable communities, and reduce environmental degradation, enhancing health.</li> </ul>
Environments and sustainability	<ul style="list-style-type: none"> <li>Optimizing the use of natural resources and promoting sustainability can be best achieved through policies that influence population consumption patterns, which can also enhance human health.</li> <li>Globally, a quarter of all preventable illnesses are the result of the environmental conditions in which people live.</li> </ul>
Housing and community services	<ul style="list-style-type: none"> <li>Housing design and infrastructure planning that take account of health and well-being (e.g. insulation, ventilation, public spaces, refuse removal, etc.) and involve the community can improve social cohesion and support for development projects.</li> <li>Well-designed, accessible housing and adequate community services address some of the most fundamental determinants of health for disadvantaged individuals and communities.</li> </ul>
Land and culture	<ul style="list-style-type: none"> <li>Improved access to land can support improvements in health and well-being for Indigenous peoples as Indigenous peoples' health and well-being are spiritually and culturally bound to a profound sense of belonging to land and country.</li> <li>Improvements in Indigenous health can strengthen communities and cultural identity, improve citizen participation and support the maintenance of biodiversity.</li> </ul>

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## APPENDIX B HIA SECTORS

Source: Human Impact Partners, UCLA HIA Clearinghouse, and the Health Impact Project  
[www.hiaguide.org/sectors-and-causal-pathways/sectors](http://www.hiaguide.org/sectors-and-causal-pathways/sectors)

### SECTORS

Agriculture and Food  
The Built Environment  
Climate change  
Communications, Media  
Community Planning  
Criminal justice  
Economic policy and Taxation  
Education  
Energy  
Environment  
Food Processing, Distribution, Sales  
Gambling (Casinos)  
Housing  
Labor, Employment & Workplace Policies  
Land Use  
Natural Resources  
Mining, Petroleum, other Extractive Industry  
Parks and Recreation  
Physical Activity  
Public Safety  
Transportation  
Utilities  
Water  
Weatherization

## APPENDIX C MINIMUM ELEMENTS OF AN HIA

Source: North American HIA Practice Standards Working Group

### *Minimum Elements of HIA*

A health impact assessment (HIA) must include the following minimum elements, which together distinguish HIAs from other processes. An HIA:

1. Is initiated to inform a decision-making process, and conducted in advance of a policy, plan, program, or project decision;
2. Utilizes a systematic analytic process with the following characteristics:
  - 2.1. Includes a scoping phase that comprehensively considers potential impacts on health outcomes as well as on social, environmental, and economic health determinants, and selects potentially significant issues for impact analysis
  - 2.2. Solicits and utilizes input from stakeholders
  - 2.3. Establishes baseline conditions for health, describing health outcomes, health determinants, affected populations, and vulnerable sub-populations
  - 2.4. Uses the best available evidence to judge the magnitude, likelihood, distribution, and permanence of potential impacts on human health or health determinants;
  - 2.5. Rests conclusions and recommendations on a transparent and context-specific synthesis of evidence, acknowledging sources of data, methodological assumptions, strengths and limitations of evidence and uncertainties
3. Identifies appropriate recommendations, mitigations and/or design alternatives to protect and promote health;
4. Proposes a monitoring plan for tracking the decision's implementation on health impacts/determinants of concern;
5. Includes transparent, publicly accessible documentation of the process, methods, findings, sponsors, funding sources, participants and their respective roles.

## APPENDIX D GUIDING VALUES

Source: International Association of Impact Assessment; Quigley 2006

<p><b><i>Democracy</i></b>—emphasizing the right of people to participate in the formulation and decisions of proposals that affect their lives, both directly and through elected decision makers. In adhering to this value, the HIA method should involve and engage the public, and inform and influence decision makers. A distinction should be made between those who take risks voluntarily and those who are exposed to risks involuntarily.</p>
<p><b><i>Equity</i></b>—emphasizing the desire to reduce inequity that results from avoidable differences in the health determinants and/or health status within and between different population groups. In adhering to this value, HIA should consider the distribution of health impacts across the population, paying specific attention to vulnerable groups and recommending ways to improve the proposed development for affected groups.</p>
<p><b><i>Sustainable development</i></b>—emphasizing that development meets the needs of the present generation without compromising the ability of future generations to meet their own needs. In adhering to this value, the HIA method should judge short- and long-term impacts of a proposal and provide those judgments within a time frame to inform decision makers. Good health is the basis of resilience in the human communities that support development.</p>
<p><b><i>Ethical use of evidence</i></b>—emphasizing that transparent and rigorous processes are used to synthesize and interpret the evidence, that the best available evidence from different disciplines and methodologies is utilized, that all evidence is valued, and that recommendations are developed impartially. In adhering to this value, the HIA method should use evidence to judge impacts and inform recommendations; it should not set out to support or refute any proposal, and it should be rigorous and transparent.</p>
<p><b><i>Comprehensive approach to health</i></b>—emphasizing that physical, mental, and social well-being is determined by a broad range of factors from all sectors of society (known as the wider determinants of health). In adhering to this value, the HIA method should be guided by the wider determinants of health.</p>

## APPENDIX E

### 2011 – MARCH 2013 CONNECTICUT ENVIRONMENTAL IMPACT EVALUATIONS

Source: Connecticut Department of Energy and Environmental Protection  
David Fox, Senior Environmental Analyst, Office of Environmental Review

2011

#### **EIE Notice for the 2007 Comprehensive Campus Master Plan for Western Connecticut State University (WCSU)**

Project Description: The Board of Trustees for the Connecticut State University System (CSUS) proposes to implement a program of improvements to the Midtown and Westside Campuses at Western Connecticut State University (WCSU) (the “Preferred Plans”). These improvements have been released as part of the approved *2007 Comprehensive Campus Master Plan for Western Connecticut State University*, prepared by Symmes Maini & McKee Associates, Inc. in September 2007. The primary goals and objectives of the improvement program are to:

- Renovate, upgrade, replace, and expand existing facilities;
- Relocate functions in existing or new facilities in coordination with the WCSU’s space utilization study;
- Unify and consolidate core uses of the campus;
- Utilize existing resources, building on existing strengths, and reinforcing the positive image of the University, community, and State; and
- Provide a development strategy that establishes need, priority, schedule, and cost effective solutions to the University’s and existing and future needs.

The Campus Plan would be implemented through various projects on campus providing new or renovated academic, administrative, athletic and residential space, new parking garages, landscaping, new quadrangles, linkage of exterior spaces throughout the campus, and demolition of some existing structures.

The Westside Campus project improvements would likely include the following (with approximate gross square feet noted):

- New Visual and Performing Arts Center with 170,000 gross square feet (gsf) of floor space;
- Three residence halls, each with floor space measuring 60,000 gsf and with a total capacity of 394 residents;
- Addition to the Classroom Building of 51,000 gsf;
- Addition to the O’Neill Center of 25,000 gsf;
- Two parking garages (one with an associated mini-power plant), each with a capacity for 500 cars;

- Closing of a portion of University Boulevard and redirection of vehicular and pedestrian flow.

The Midtown Campus project improvements would likely include the following:

- New Wellness Center (attached to Berkshire Hall), with 39,000 gsf of floor space;
- Addition to the Student Center of 33,000 gsf;
- One new residence hall, with floor space measuring 138,000 gross square feet (gsf) and a capacity of 300 residents;
- One new parking garage (and associated chiller plant) with a capacity for 400 cars;
- Demolition of the Roberts Avenue Elementary School and closing of the associated street.
- Demolition of the Richa House and associated garage.

### **Notice of EIE for Mattabassett District Water Pollution Control Facility Upgrade**

**Project Description:** The Mattabassett District Water Pollution Control Facility upgrade will allow the facility to meet its service requirements through 2030. This upgrade will provide for greater control of nitrogen removal and prepare for projected growth in the plant's service area. Specifically, the proposed work will include modifications of the existing four aeration tanks and the construction of two additional aeration tanks, two additional secondary clarifiers and a side stream reactor to treat solids handling recycle flows prior to discharge to the secondary treatment system. The side stream reactor will require construction of a new pump station to transfer solid handling recycle flows. There will be modifications to the Return Activated Sludge (RAS) pumping system to pump RAS from the existing and new secondary clarifiers to the sidestream reactor. A new primary effluent splitter structure to provide even flow split to each of the six aeration tanks will be required. The project is designed to allow for continual operation of the facility while the expansion and upgrades are implemented. The proposed expansion from 20 to 35 million gallons per day average daily design capacity and upgrade work is for service area growth issues and the need to provide advanced wastewater treatment for nutrient removal. There are significant expansions of the sewer system due to allotments requested by the District's member communities and contract communities and the planned connection of Middletown's wastewater flows. The project will result in improved plant efficiency, reliability and positive environmental benefits as a result of improved water quality to the Connecticut River and Long Island Sound.

### **Notice of EIE for Harbor Brook Flood Control Project**

**Project Description:** This flood control project involves a package of channel improvements, bridge replacements, floodwater storage enhancements, wetlands enhancements and the construction of a linear recreational trail along the Harbor Brook corridor from Baldwin's Pond downstream to the confluence of Harbor Brook and the Quinnipiac River at Hanover Pond.

### **Notice of EIE for University of Connecticut Health Center New Construction and Renovation Project**

**Project Description:** The University of Connecticut Health Center proposes to construct a new hospital bed tower, ambulatory care center, research laboratory facility, three parking garages, additional surface parking, and related site work at its campus in Farmington, Connecticut.

The new construction is integral to the implementation of Bioscience Connecticut, an initiative that was recently approved by the Connecticut General Assembly and signed into law by Governor Dannel P. Malloy. The capital improvement program also includes renovations and infrastructure improvements to the Health Center to support patient, educational, and research activities. The project will take place on the upper campus to the north east, and west of John Dempsey Hospital on existing paved areas, and on the lower campus in the general vicinity of the existing Dowling Buildings and the Medical Arts Research Building. The project will play an important strategic role in further positioning the Health Center as a top medical research and education institution and enhancing patient care services.

## **2012**

### **Notice of EIE for The Villages**

Project Description: Mutual Housing Association of South Central Connecticut, Inc. (MHA) proposes to construct a 120-unit apartment community complex (“The Villages”) on approximately 12.2 acres of undeveloped wooded land located on the west side of the Norwich New London Turnpike (Route 32) in the Uncasville section of Montville. The proposed project (the Proposed Action) would address the demand for affordable housing and rental housing in Montville and the surrounding communities, as well as provide easy access to and from the Mohegan Sun Casino and surrounding commercial areas, and access to the region’s public transportation system.

The Proposed Action consists of the development of affordable housing units and associated infrastructure in Montville, Connecticut. The proposed housing complex consists of twenty multi-story units, providing one-bedroom, two-bedroom and three-bedroom apartments. The garden-style multifamily residential buildings range from two to three stories in height and house four to eight units per building. The proposed development also includes construction of a new access road off Route 32 and infrastructure development, surface, a community building, playscape areas, and a maintenance building.

This combined EIE/EA has been prepared for the Proposed Action on behalf of the Connecticut Department of Economic and Community Development (DECD) and HUD, the CEPA sponsoring agency and the Federal lead agency, respectively. This document has been prepared in accordance with CEPA, NEPA, and HUD’s implementing regulations at 24 CFR 50. The EIE/EA provides a description of the Proposed Action and its purpose and need, an evaluation of the direct, indirect, and cumulative effects of the No Action Alternative and the Proposed Action, and proposed mitigation measures to eliminate or minimize adverse environmental effects.

### **Notice of EIE for the New Haven - Hartford - Springfield Line High Speed, Intercity Passenger Rail Project**

Project Description: The proposed rail service enhancement in the NHHS rail corridor would provide for up to 25 daily round-trip trains (up to 50 one-way trips per day) by 2030. The proposed service plan would provide one-seat or cross-platform transfers on service from Washington, D.C., and New York to Springfield, Boston and the Knowledge Corridor, as well as bi-directional, 30-minute peak-hour service and hourly midday service in the NHHS rail

corridor. Related operational improvements include an increase in the capacity of the line to accommodate additional trains, an increase in the maximum train speed to 110 miles per hour (mph), service to future new regional train stations in North Haven, Newington, West Hartford, and Enfield (to be constructed with Federal Transit Administration (FTA) funding), and reduced scheduled travel times. These operational improvements, in turn, require rail infrastructure improvements. Therefore, Connecticut has proposed the NHHS Rail Program, a program of capital projects to support enhanced passenger rail service in the NHHS rail corridor. The proposed project's infrastructure improvements in the NHHS rail corridor consist of:

- restoration of sections of track;
- construction of new passing sidings;
- construction of a layover and light maintenance facility;
- at-grade crossing upgrades;
- facility-specific bridge and culvert rehabilitations, replacements and removals;
- installation of new crossovers and signal upgrades;
- improvement or relocation of existing passenger rail platforms for Amtrak intercity service, as well as additional station parking and improved station access;
- improvements to platforms, track configuration and sidings in the Springfield Terminal area; and construction of future FTA-funded new regional rail stations in North Haven, Newington, West Hartford, and Enfield.

### **Notice of EIE for New Terminal B Passenger Facility and Associated Improvements at Bradley International Airport**

**Project Description:** The Connecticut Department of Transportation (ConnDOT) proposes to construct a new passenger terminal in the area occupied by the existing Terminal B at Bradley International Airport (BDL) in Windsor Locks, Connecticut. The existing Terminal B complex would be demolished for construction of a new Terminal B and associated airside and landside improvements to provide airport facilities that would meet future air travel demand. Construction of the proposed improvements would occur in phases, with completion of the initial phase anticipated by 2018. Key elements of the program include a new terminal building with concourses, a modified roadway system to access the terminal, new approach roadway alignments, a new parking garage and consolidated car rental facility, airside aircraft parking aprons and taxilanes, airside and landside utilities, and power generation to the new terminal.

### **Notice of Environmental Impact Evaluation for Stamford Transportation Center Parking and Transit Oriented Development**

**Project Description:** ConnDOT is proposing to replace the original 727-space parking garage at the Stamford Transportation Center that was opened in 1987 (Original Garage), and to construct new parking facilities for at least 1,000 spaces to replace the Original Garage spaces plus any additional commuter parking spaces needed to replace spaces lost from ConnDOT-owned parking as a result of development, and to increase the commuter parking supply. The project will also provide ancillary improvements for vehicular and pedestrian circulation and access along Station Place as well as provide an opportunity for Transit Oriented Development (TOD).

The garage is a component of the ConnDOT Metro-North train station at Stamford, also known as the Stamford Transportation Center. The existing parking complex, which includes the Original Garage and a parking garage that was opened in 2004 (2004 Garage - which will remain in use), is located immediately south of the train station, and is accessed from the station by pedestrian bridges and surface crosswalks.

The Purpose and Need for the Proposed Action is as follows:

1. Replace the aging Original Garage that services the Stamford Transportation Center with low maintenance, long service life facilities that accommodate the number of parking spaces lost during construction plus adds at least 273 new commuter parking;
2. Expand the availability of parking and improve multimodal traffic and pedestrian flow around the Stamford Transportation Center and Station Place; and
3. Minimize the public costs for construction and ongoing operations and maintenance of the parking facilities serving the Stamford Transportation Center by promoting TOD which leverages and enhances the multimodal public transportation services provided by the Stamford Transportation Center.

#### **Notice of Environmental Impact Evaluation for University of Connecticut Additional Source(s) of Water Supply**

Project Description: UConn in association with the Town of Mansfield proposes to extend a source of potable water to Mansfield and Storrs to augment the University's water supply system to serve current and future needs. This action involves extending water supply transmission piping and interconnecting with another supplier's existing water system. In particular, the additional water supply will: (1) enable the University to maintain adequate margin of safety in its public water system; (2) supply additional incremental demand to serve the proposed Technology Park on the University's North Campus; (3) supply water demands in northern Mansfield in areas proximate to the University's Main and Depot campuses; and (4) provide water supply for potential future on-campus University developments.

#### **Notice of EIE for Extension of Public Water System from Middletown to Durham**

Project Description: The Department of Energy and Environmental Protection (DEEP), in association with the Town of Durham, proposes to extend public water service from the City of Middletown into areas of the Town of Durham to address groundwater contaminated by the Durham Meadows Superfund site and other contaminated areas in the vicinity of the Superfund site. There are several homes in Durham with contaminated drinking water wells that are currently using in-home filter systems to remove the contaminants. The proposed permanent solution is to extend Middletown's water supply transmission piping and interconnections along Route 17 into Durham. The action also includes installation of a water storage tank at Cherry Hill in the City of Middletown and the provision of fire protection to areas of Durham.

2013

### **Notice of EIE for the Quinebaug Regional Tech Park**

**Project Description:** This Environmental Impact Evaluation (EIE) was prepared for the Proposed Action on behalf of DECD which is the sponsoring agency and cooperating state agencies including ConnDOT and Department Social Services (DSS).

The Proposed Action is the construction of a new vehicular bridge at the intersection of Kennedy Drive and the I-395 Southbound off ramp at Exit 95 and a new regional YMCA facility. The purpose of the bridge is to provide access to a 267± acre site that is targeted for economic development, which would be an indirect or secondary consequence of the new bridge. The DSS is providing a portion of the funding needed to construct the YMCA facility which will include a 48,000± square foot (SF) building, surface parking, and athletic fields. By providing improved access to the Site, the new bridge has the potential for creating secondary actions that, in addition to the YMCA construction, include the development of the Quinebaug Regional Technical Park (QRTP), a light industrial type of development focused on “green technologies”. A significant portion of the QRTP will be set aside for conservation to protect rare species habitat, wetlands, floodplains, farmland soils and a portion of the proposed Aquifer Protection Area (APA).

Three site development alternatives were evaluated in an iterative process that evolved through the analysis of environmental constraints. It is estimated that with the new zoning regulations being drafted, the environmental and physical constraints of the site, the preferred alternative would be approximately 20 building lots of 7 - 8 acres in size that would each be capable of supporting up to 70,000 square feet of such development in addition to the YMCA.

### **Notice of EIE for the Eastern Connecticut State University 2008 Campus Plan Update Municipalities where project is proposed: Windham (Willimantic) and Mansfield**

**Project Description:** The Eastern Connecticut State University Campus Master Plan is part of an update to the master plan first prepared in 1992 and revised in 1997. The Plan is a baseline for future campus development and funding requests to the Board of Regents. The Plan update for Eastern is a guide for incremental growth that responds to stated needs, planned expansions, and changes in facilities' needs. Eastern is comprised two campuses: the Main Campus, located south of Route 6; and the Mansfield Campus which consists of athletic facilities, located north of the Route 6 within walking distance of the main campus.

The Plan is a ten-year comprehensive physical development plan to enhance the academic, residential, and community life of the campus. It identifies new building and renovation projects that should be made by the target year 2017; with the understanding that all projects may not be accomplished over the ten-year period.

## APPENDIX F

### LHDD'S HIA CAPACITY SURVEY

#### Health Impact Assessment Capacity Survey

##### Introduction and Demographic Information

The Connecticut Academy of Science and Engineering (CASE) is conducting a study on behalf of the Public Health Committee of the Connecticut General Assembly to assess the potential value of utilizing Health Impact Assessments in Connecticut.

The purpose of the survey is to determine the interest and capacity of Connecticut's Local Health Departments and Districts to conduct Health Impact Assessments (HIAs). Directors of full- and part-time Municipal Health Departments and Health Districts (or their designee) are requested to respond. The survey results will be useful in identifying Health Impact Assessments which have been completed on the local level in Connecticut and in assessing the interest and capacity of local health departments/districts to complete HIAs. Information obtained from this survey will inform the CASE report to the General Assembly and will guide the state's leadership in policy decisions. Survey results will be aggregated and comments provided will NOT BE identified by individual without express permission of the survey respondent.

If you have questions or received this in error, contact Terri Clark, Associate Director, CASE at 860-571-7143 or by email at [tolark@ctcase.org](mailto:tolark@ctcase.org).

Thank you for your time.

**1. Indicate the type of health department/district you represent:**

- Part-time Municipal Health Department
- Full-time Municipal Health Department
- Full-time Health District
- Tribal Health District

**2. What is your position in the health department/district?**

- Part-time Director of Health
- Full-time Director of Health
- Other Health Department Staff as designated by the Director

If other, provide your title/position:

**3. What is the size of the population that your health department/district serves?**  
**(NOTE: Use only numbers - including the "0" zero and not the letter "o" and do not use any commas in the number)**

Population Size

## Health Impact Assessment Capacity Survey

### 4. What type of community does your health department/district serve?

- Urban
- Suburban
- Rural

## Health Impact Assessment Knowledge and Experience

The following definition of a Health Impact Assessment may be useful in responding to this survey.

A Health Impact Assessment (HIA) is commonly defined as a combination of procedures, methods, and tools by which a policy, program, or project may be judged as to its potential effects on the health of a population, and the distribution of those effects within the population. HIA is used to evaluate objectively the potential health effects of a project or policy before it is built or implemented. HIA can provide recommendations to increase positive health outcomes and minimize adverse health outcomes. The HIA framework is used to bring potential public health impacts and considerations to the decision-making process for plans, projects, and policies that fall outside of traditional public health arenas, such as transportation and land use." (Source: Center for Disease Control and Prevention)

Health Impact Assessments are distinct from other types of Public Health assessment tools, such as Environmental Impact Assessments, Community Health Assessments, and Risk Assessments.

### 5. Have you ever heard of a Health Impact Assessment before receiving this survey?

- Yes
- No
- Not Sure

### 6. Have you ever participated in a Health Impact Assessment?

- Yes
- No
- Not sure

**Health Impact Assessment Capacity Survey**

**7. If you have participated in a Health Impact Assessment, select from one or more of the following statements that best describes your role in the Health Impact Assessment(s).**

**I participated in one or more Health Impact Assessment(s)**

- In my current role at the local health department/district.
- outside of my current role at the health department/district.
- In a previous position.
- I do not think I have participated in a Health Impact Assessment.

**8. Has your health department/district ever completed a Health Impact Assessment?**

- Yes
- No
- Not sure

**9. If your health department/district has completed a Health Impact Assessment, briefly describe the purpose of the assessment.**

**10. My health department/district has completed one or more Health Impact Assessments (check all that apply)**

- Independently.
- In collaboration with another program or agency.
- with technical assistance from another agency or a consultant.
- as a requirement of a funder.

### Health Impact Assessment Capacity Survey

**11. If you selected any of the following responses, indicate the number of each type of Health Impact Assessment completed by your health department/district.**

Independently	<input type="text"/>
In collaboration with another program or agency	<input type="text"/>
With technical assistance from another agency or a consultant	<input type="text"/>
As a requirement of a funder	<input type="text"/>

### Health Impact Assessment Capacity

**12. Briefly describe what resources you think your health department/district would need to conduct a Health Impact Assessment.**

**13. What would you consider to be the primary barrier(s) to your health department's/district's ability to complete a Health Impact Assessment? Select all that apply.**

- Lack of funding
- Lack of training
- Lack of dedicated staff
- Lack of departmental/district buy-in
- Lack of stakeholder buy-in
- Not Sure

Other Barriers? (please specify)

<b>Health Impact Assessment Capacity Survey</b>					
<b>14. Indicate to what extent you agree or disagree with each of the following statements regarding your health department/district's capacity to complete Health Impact Assessments on local policies and programs.</b>					
	Strongly Disagree	Disagree	Neither Agree Nor Disagree	Agree	Strongly Agree
My health department/district has the financial resources to conduct Health Impact Assessments.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My health department/district has staff trained in conducting Health Impact Assessments.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My health department/district would be able to dedicate staff to conducting Health Impact Assessments within current staffing levels.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My health department/district has the capacity to provide technical assistance to other health departments/agencies to complete Health Impact Assessments.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My health department/district would be interested in being trained to conduct Health Impact Assessments.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>Health Impact Assessment Attitudes</b>					
<b>15. In my opinion, my health department/district would benefit from utilizing Health Impact Assessments in the future.</b>					
<input type="radio"/> Yes <input type="radio"/> No <input type="radio"/> Unsure					

**Health Impact Assessment Capacity Survey**

**16. If your department/district were to do a Health Impact Assessment(s), which of the following areas would be of most interest? (Select all that apply)**

- Agriculture and Food
- Built Environment
- Climate Change
- Criminal Justice
- Economic Policy
- Education
- Energy
- Environment
- Gambling
- Housing
- Labor and Employment
- Land Use
- Natural Resources
- Physical Activity
- Transportation
- Water
- Weatherization
- None of the areas

Other areas? (please specify)

**17. Is there anything else you would like to share about your Department's/District's capacity to complete Health Impact Assessments on programs/policies?**

**Follow-up**

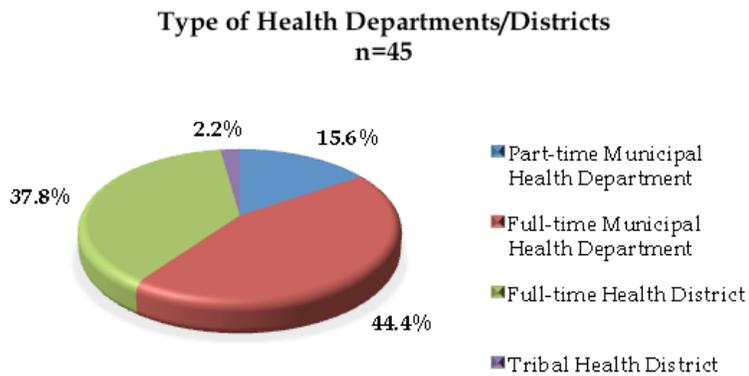
<b>Health Impact Assessment Capacity Survey</b>		
<b>18. Provide your response to the following:</b>		
	Yes	No
Are you willing to share information about specific Health Impact Assessments your department/district has conducted?	<input type="radio"/>	<input type="radio"/>
Are you willing to participate in a focus group session about the potential use of Health Impact Assessments in Connecticut?	<input type="radio"/>	<input type="radio"/>
Do you want to be notified when the CT Academy - Health Impact Assessment Study report is complete and a briefing has been scheduled?	<input type="radio"/>	<input type="radio"/>
Do you want to be included as a study contact? As a contact, you will receive notice of study committee meetings.	<input type="radio"/>	<input type="radio"/>
<b>19. Contact information is optional, but required if you responded yes to any of the items in the previous question.</b>		
<b>Name:</b>	<input type="text"/>	
<b>Department/District:</b>	<input type="text"/>	
<b>City/Town:</b>	<input type="text"/>	
<b>Email Address:</b>	<input type="text"/>	
<b>Phone Number:</b>	<input type="text"/>	

## APPENDIX G LHDD'S HIA CAPACITY SURVEY - RESULTS

### DEMOGRAPHICS

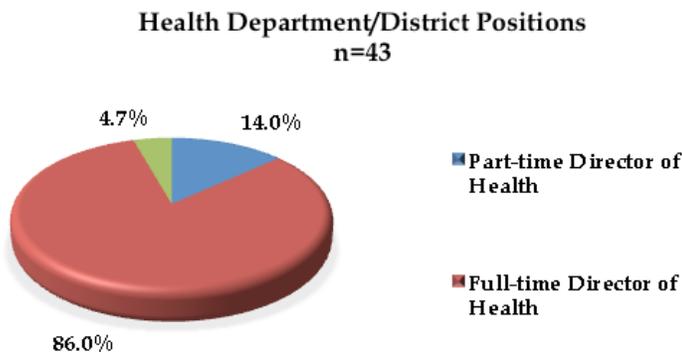
#### Question 1

*Indicate the type of health department/district you represent.*



#### Question 2

*What is your position in the health department/district?*

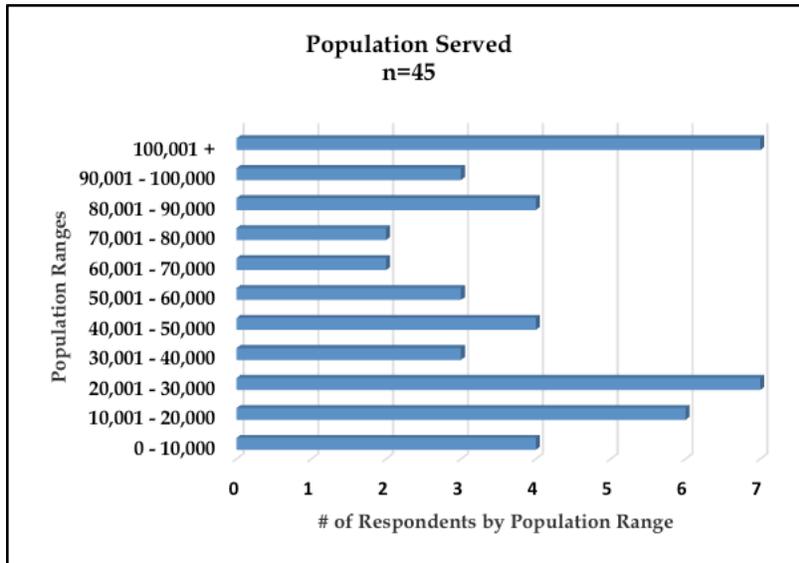


#### Two additional positions reported:

Assistant Director for Environmental Health  
Public Health Nurse

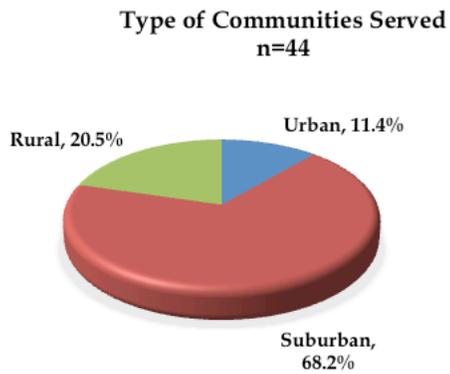
**Question 3**

*What is the size of the population that your health department/district serves?*



**Question 4**

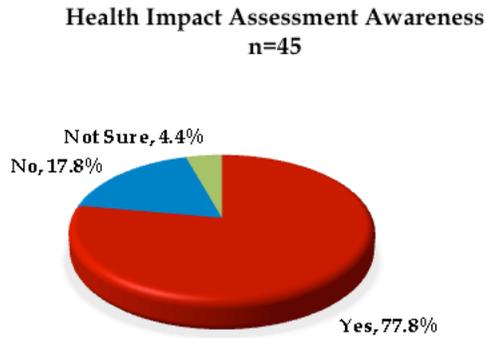
*What type of community does your health department/district serve?*



## HEALTH IMPACT KNOWLEDGE AND EXPERIENCE

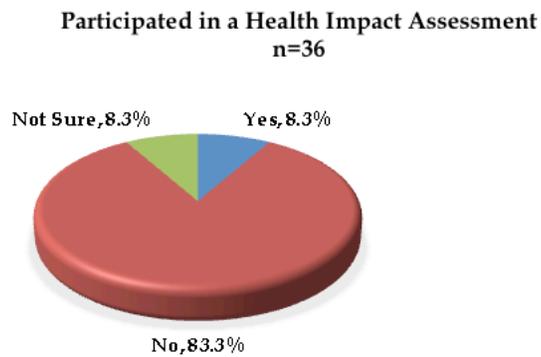
### Question 5

*Have you ever heard of a Health Impact Assessment before receiving this survey?*



### Question 6

*Have you ever participated in a Health Impact Assessment?*



**Question 7**

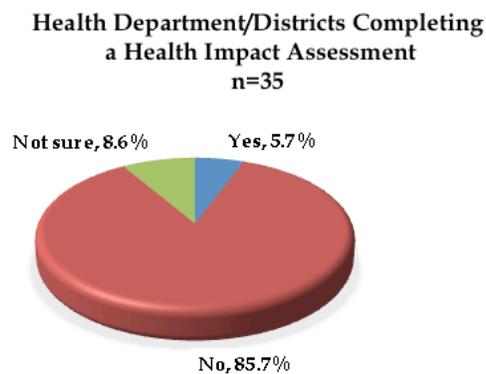
*If you have participated in a Health Impact Assessment, select from one or more of the following statements that best describes your role in the Health Impact Assessment(s).*

Four participants answered the question as follows:

- 2 – in their current role at the local health department district
- 2 – in a previous position

**Question 8**

*Has your health department/district every completed a Health Impact Assessment?*



**Question 9**

*If your health department/district has completed a Health Impact Assessment, briefly describe the purpose of the assessment.*

Comments:

- To determine the public health needs/gaps in our community.
- To evaluate the need for a full-time health department.

**Question 10**

*My health department/district has completed one or more Health Impact Assessments (check all that apply)*

Two participants responded with one indicating the HIA had been done independently and the other that the HIA had been done in collaboration with another program or agency.

**Question 11**

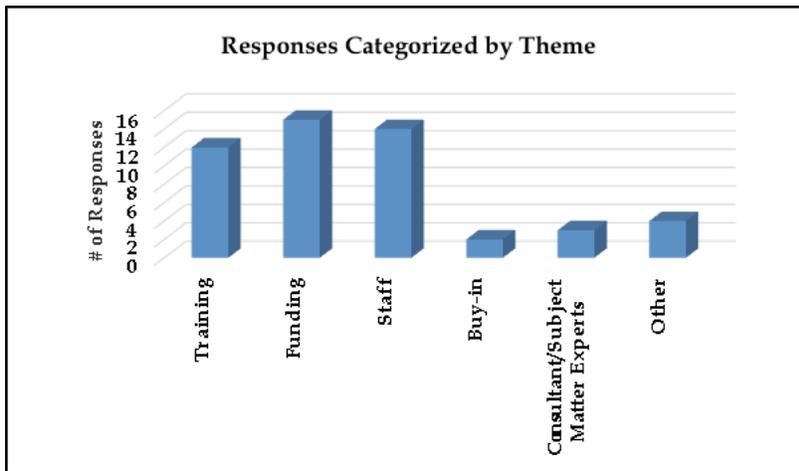
*If you selected any of the following responses, indicate the number of each type of Health Impact Assessment completed by your health department/district.*

Two participants responded, with each indicating that the number completed was one HIA per response.

**HEALTH IMPACT ASSESSMENT CAPACITY**

**Question 12**

*Briefly describe what resources you think your health department/district would need to conduct a Health Impact Assessment.*



Comments:

Training

- Trained personnel. The ability to interpret the results of the study in order to propose solutions.
- Training for staff
- Training (4 responses)
- Directions on how to conduct an HIA
- Guidance
- Training in the methodology of conducting HIAs. General training in risk assessment methodologies.

- Perhaps training and case studies of what other local health departments have done.
- More information on how the HIA is conducted: phone, in-person interviews, focus groups, mailings, town hall meetings, time frame required to complete, minimum sample size. Too many unknowns.
- Resources - employee training in Public Health Assessments

#### Funding

- Financial resources to perform the study
- Funding (7 responses)
- Funding to train staff about how to conduct an HIA
- Funding for either a full-time health director or funding to hire a part-time employee to conduct the work
- Budget line item
- Paid staff time
- Funding for staff, necessary office equipment
- Funding to pay staff
- There is an existing group that produces a HVCEO / Danbury Health Department and Danbury Hospital Community Report Card. If funding were provided we could use the existing data and direction to get great results!

#### Staff

- Staff with time to conduct, personnel to work on assessment collaboration with other agencies/entities
- staff
- Personnel - at least part-time additional skilled staff
- Dedicated staff, resources to conduct it
- It depends on the magnitude of the project, plan or policy proposed. Assuming a rapid HIA is administered with stakeholder input, a project budget should include a part-time epidemiologist and part-time project coordinator/researcher, part-time administrative assistant, with contingencies. Larger projects would obviously require additional staff time among the three staffing categories detailed above, and additional funds for subcontracting community facilitators, consultants, and other project-specific subject matter experts.
- Additional staff
- Staffing - and depending on the program some technical assistance. I am unsure many of my programs collect appropriate cost data to evaluate cost effectiveness.
- Staff hours
- Paid staff and time to conduct HIA
- A dedicated staff person for this project to convene meetings locally to examine current policies and identify priority areas for policy change with a positive health impact as the target.

- Staffing
- Hiring of dedicated staff
- Personnel
- Depending on demands of an HIA perhaps additional staff

Buy-in

- State-level promotion to local municipal leaders of the importance of this work on the local level. Community buy-in
- Board of Selectmen backing, community participation,

Consultant/Subject Matter Experts

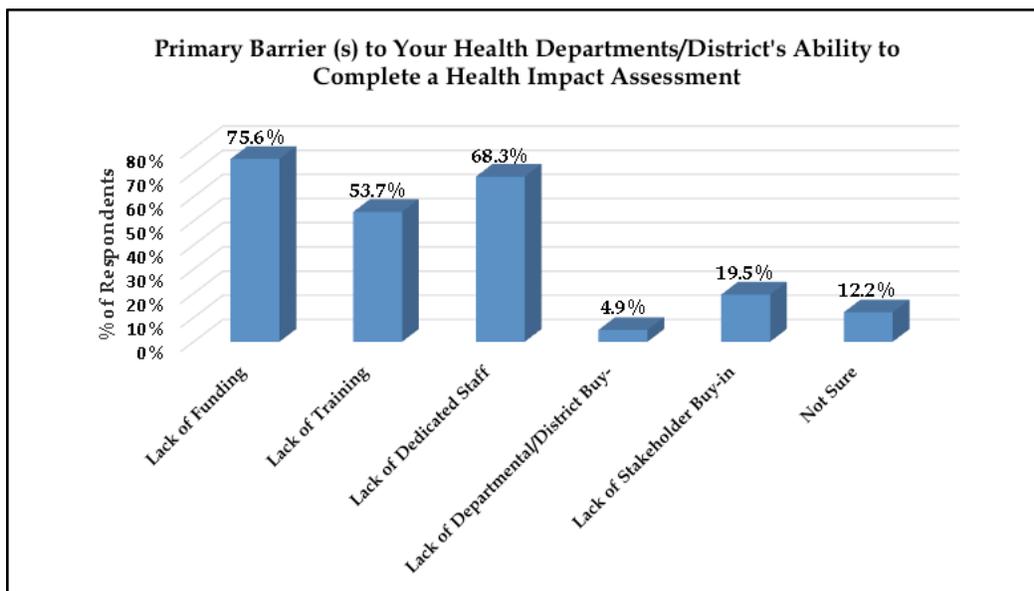
- An intern or other outside consultant, fully paid for with funds outside of our local budget.
- Likely need to hire a consultant.
- Time! And money for either a consultant or to hire someone to do it. Tapped out prepping for accreditation.

Other

- Cost Benefit Analysis
- Population-based focus, environmental hazards, social impacts to residents and their families
- Access to reliable data
- Regulations

**Question 13**

*What would you consider to be the primary barrier(s) to your health department's/district's ability to complete a Health Impact Assessment? Select all that apply.*

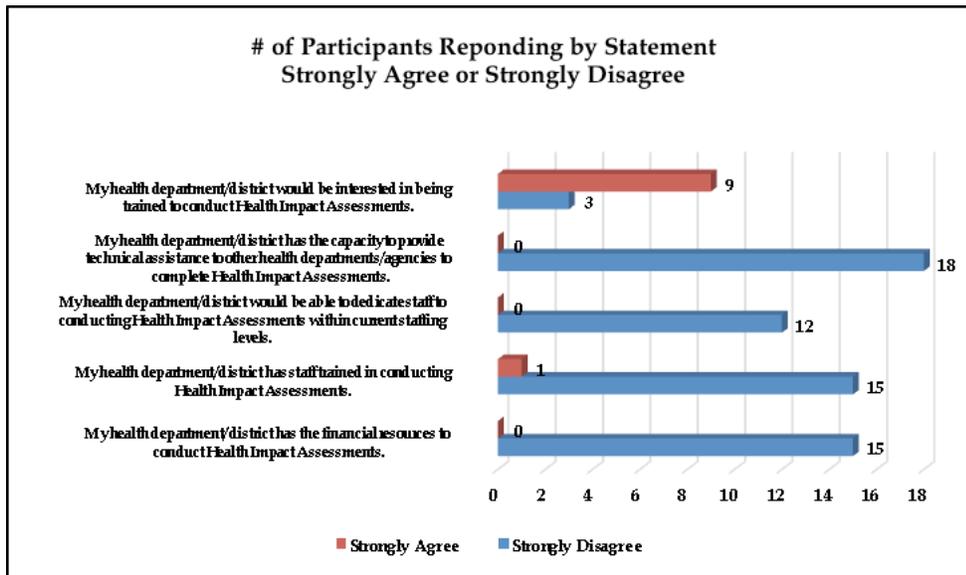


Comments:

- Familiarity with the process
- Do not know enough about HIAs and what they entail to determine barriers
- Changes in the local planning and zoning regulations to consider such impact assessments as part of formal review.
- We would need to promote the value and importance of HIA in evaluating local policy and practice changes.
- Investment in another program evaluation tool which is contrary to these ends - Q-Alert.
- This is the wrong time to be burdening limited infrastructure with extraneous tasks. Local entities determine local needs and assess the efficacy of their programs. We are guided by our statutory requirements, grant deliverables, local audits, the wishes of our respective community power structures and public opinion.

Question 14

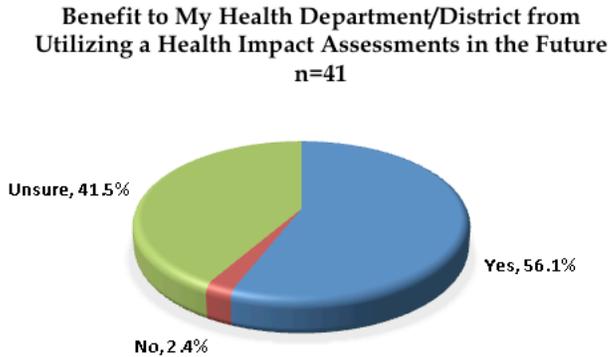
Indicate to what extent you agree or disagree with each of the following statements regarding your health department/district's capacity to complete Health Impact Assessments on local policies and programs.



## HEALTH IMPACT ASSESSMENT ATTITUDES

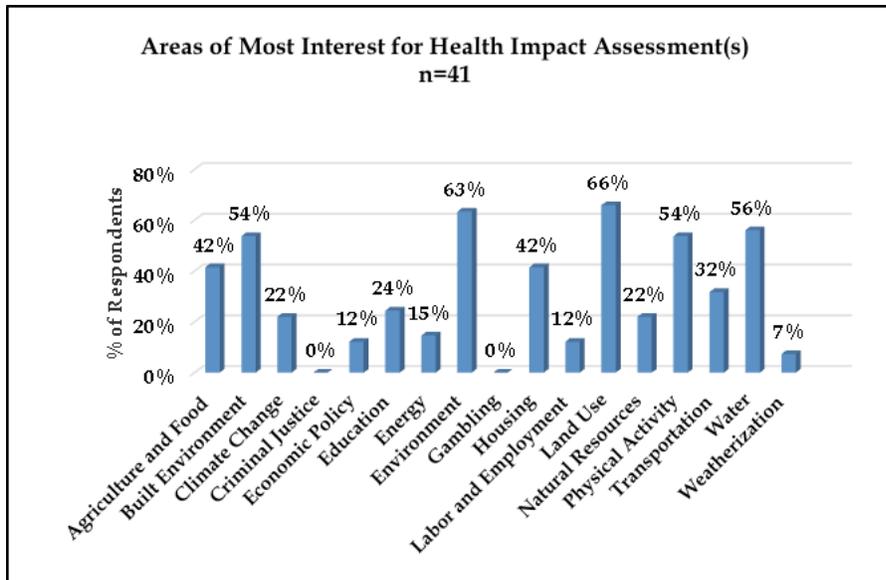
### Question 15

*In my opinion, my health department/district would benefit from utilizing Health Impact Assessments in the future.*



### Question 16

*If your department/district were to do a Health Impact Assessment(s), which of the following areas would be of most interest? (Select all that apply)*



### Comments:

- Mental health
- Oral Health, Maternal Child Health, Food Allergy Awareness
- HIV prevention work and other communicable, environmental, and disability
- Health Education, Epidemiology and disease prevention

- Aging in Place; Cardiac health improvement
- Health impact of diet and exercise

**Question 17**

*Is there anything else you would like to share about your Department's/District's capacity to complete Health Impact Assessments on programs/policies?*

- Training and case studies of how Local Health Districts did HIAs and what they accomplished.
- With increasing, uncontrollable costs such as insurance, utilities, workmen compensation, healthcare, etc., additional resources to local health departments is necessary.
- Health departments will need an existing stakeholder or collaborative group working with them on a health improvement plan to gauge community health impacts from a specific policy program or project.
- Effective HIAs require the engagement of a broad spectrum of town departments and agencies. Need to consider the extent to which HIAs are embraced by municipal officials.
- In Connecticut, they may be better suited to a regional effort as opposed to single towns or districts.
- I have done them as a consultant prior to joining BDHSS but now my time is so full it would be tough for me to do one.
- Currently the district does not have sufficient staff to release for this type of activity.
- The existing Community Report Card Group is going forward in implementation to prevent chronic health conditions; immediate funding for small grants would help (\$15,000 to \$25,000/year would be a great starting project for a 3-5 year period)
- Although our Health Department capacity is stretched with present workloads, this effort has a positive benefit for the future of our community.
- The Health Department consists of 2 full-time employees; soon to become 1.5 or less. Health Director is also Emergency Management Director. HIA analyses/decisions are made every day; albeit without good research, and often only based on regulatory requirements. HIA should be conducted on some of the state regulations in place.
- It was proposed to conduct an HIA relative to the plan to close the former landfill in Rocky Hill. It was intended that a consultant would be hired to perform the HIA and a grant was written to cover the cost. The grant was not funded and the affected towns were not interested in paying for the consultant so the HIA was never performed.

**APPENDIX H**

**FOCUS GROUP SESSION PARTICIPANTS**

<b>Organization</b>	<b>Contact</b>	<b>Title</b>	<b>City</b>
Capitol Region Council of Governments	Lyle Wray	Executive Director	Hartford
Central Connecticut Regional Planning Agency	Carl Stephani	Executive Director	Bristol
Chatham Health District (East Hampton)	Thad King	Director of Health	East Hampton
Danbury	Scott LeRoy	Director of Health	Danbury
Darien	David Knauf	Director of Health	Darien
Greater Bridgeport Regional Council	Meghan Sloan	Transportation Planner	Bridgeport
New Haven Health Department	Amanda Durante	Epidemiologist	New Haven
South Central Region COG	Eugene Livshits	Regional Planner	North Haven
East Shore District Health Department	Barbara Naclerio	Public Health Educator	Branford
UCONN-MPH Program	David Gregorio	Director	
West Hartford-Bloomfield Health District	Steve Huleatt	Director of Health	West Hartford

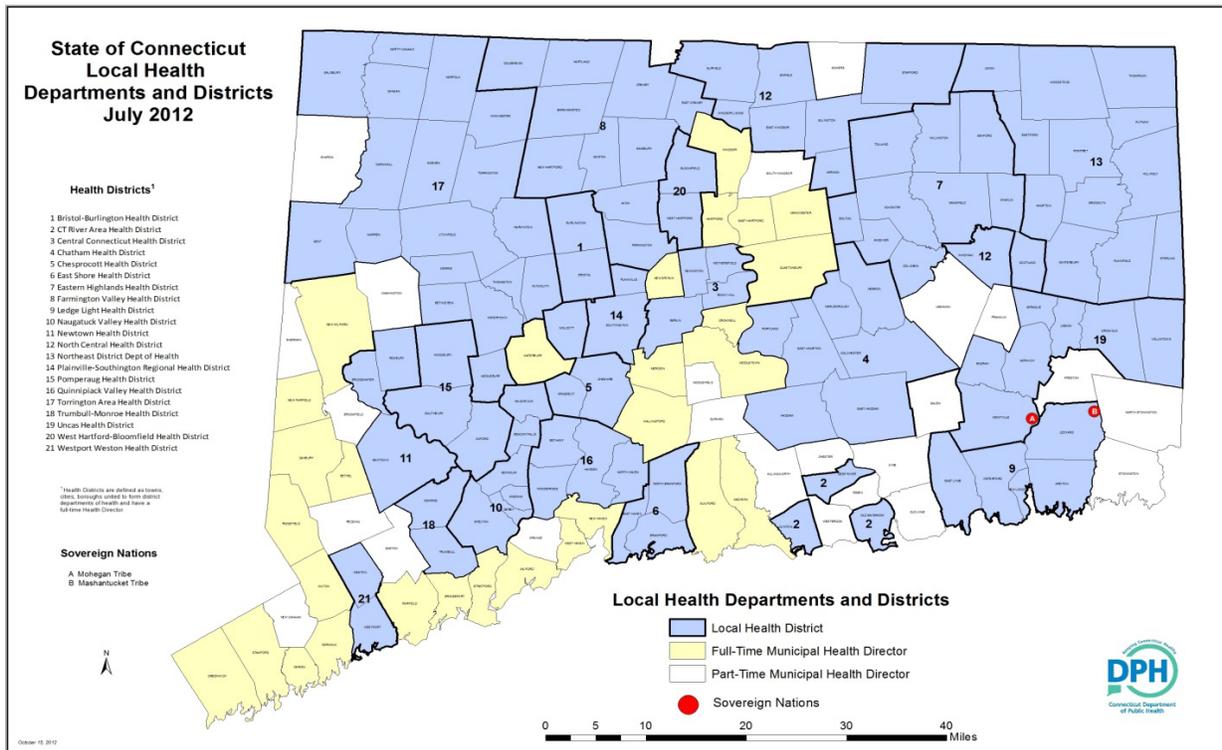
## APPENDIX I

### INTERVIEWEES

<b>Department</b>	<b>Name</b>	<b>Title</b>
ConnDOT	Tom Maziarz	Bureau of Policy and Planning
ConnDOT	Mark Alexander	Transportation Assistant Planning Director; Director, Environmental Planning
CADH	Charles Brown	Executive Director
CT-RI PHTC	Kathi Traugh	Public Health Professional Development Coordinator, Office of Community Health, Yale School of Public Health
Department of Children and Family Services	Janice Gruendel	Deputy Commissioner
Department of Energy and Environmental Protection	David Fox	Senior Environmental Analyst, Office of Environmental Review
DPH	Jewel Mullen	Commissioner
DPH	Suzanne Blancaflor	Chief, Environmental Health Section
DPH	Mehul Dalal	Director of Chronic Disease
Department of Social Services	Roderick Bremby	Commissioner
The Pew Charitable Trusts	Aaron Wernham	Director, The Health Impact Project
Southern Connecticut State University	Sandy Bulmer	Professor of Public Health; Graduate Program in Public Health
Yale School of Medicine	Georgina Lucas	Deputy Director, Robert Wood Johnson Clinical Scholars Program; Lecturer in Medicine (Clinical Scholars)

APPENDIX J

STATE OF CONNECTICUT LOCAL  
HEALTH DEPARTMENTS AND DISTRICTS - JULY 2012



## APPENDIX K

### SAMPLE OF DATA SOURCES

#### Education Data Source - Connecticut

- [Connecticut State Department of Education Data and Research](#)

#### Demographic Data Sources - US

- Nielson SiteReports
  - [Claritas Population Facts](#)
- US Census
  - [Main Data Page](#)
  - [Zip code Business Patterns \(NAICS\)](#)
  - [Zip Code Statistics](#)

#### Environmental Data Source - US

- US Environmental Protection Agency
  - [EnviroMapper](#)

#### Health Data Sources - Connecticut and US

- Centers for Disease Control and Prevention
  - [Chronic Disease Indicators](#)
- Connecticut Association of Directors of Health (CADH)
  - [Health Equity Index](#)
- Connecticut Department of Public Health
  - [Environmental Public Tracking](#)
  - [Vital Statistics](#)
  - [Tumor Registry](#)
  - [Additional DPH Resources](#)
- Connecticut Health Information and Management Exchange (CHIME)
  - [Hospital Discharge Records](#)

- National Cancer Institute
  - [State Cancer Profiles](#)
  - [Surveillance Epidemiology and End Results](#)

#### **Housing Data Sources - Connecticut and US**

- [Connecticut Housing Finance Authority](#)
- [Home Mortgage Disclosure Act, Aggregate Reports - Loan Application](#)
- [RealtyTrac, County Real Estate Trends](#)

#### **Local and Regional Data Sources - Connecticut**

- [Connecticut Data Collaborative](#)
- Data Haven
  - [Data for Community Action](#)
  - [Civic Vitality Indicators](#)

#### **Transportation Data Source - Connecticut**

- [Connecticut Crash Data Repository](#)

## APPENDIX L

### STUDY COMMITTEE MEETINGS AND GUEST SPEAKERS

The following is a list of study committee meetings, including presentations given to the CASE study committee by guest speakers and the CASE Research Team. In the electronic version of this report, links to recordings of presentations and meeting proceedings are provided.

#### [NOVEMBER 15, 2012 – MEETING 1](#)

- [Introductory Remarks](#)  
Richard H. Strauss, Executive Director, CASE
- [Review of Scope and Work Plan](#)  
David Pines, *PhD*, CASE Study Manager; Associate Professor and Chair of Civil, Environmental, and Biomedical Engineering, University of Hartford
- [HIA in the United States: Overview of current practice & options for implementing HIA programs](#)  
Aaron Wernham, M.D., M.S. Director, The Health Impact Project, The Pew Charitable Trusts
  - [Discussion – Wernham Presentation](#)
- [Study Committee Discussion](#)
- [Closing Remarks](#)

#### [DECEMBER 13, 2012 – MEETING 2](#)

- [Introductory Remarks](#)  
Richard H. Strauss, Executive Director, CASE
- [Building Capacity for HIA in State Health Agencies: Lessons Learned from Pilot Projects](#)  
Nancy M. Goff, MPH, Director, Environmental Health, Association of State and Territorial Health Officials
  - [Discussion – Goff Presentation](#)
- [Measuring and Reporting Health Equity: What Produces Impact?](#)  
Sharon Mierzwa, MPH, RD, Program Director/Health Equity, Connecticut Association of Directors of Health
  - [Discussion – Mierzwa Presentation](#)
- [Update from CASE Research Team](#)
- David Pines, Study Manager; Associate Professor and Chair of Civil, Environmental, and Biomedical Engineering, University of Hartford  
Colleen Ann O’Connor, Associate Study Manager and Public Health Consultant
- [Closing Remarks](#)

JANUARY 25, 2013 – MEETING 3

- **Introductory Remarks**  
Richard H. Strauss, Executive Director, CASE
- **Health Impact Assessments: The Massachusetts Experience**  
Suzanne K. Condon, *Study Committee Member*, Associate Commissioner; Director,  
Bureau of Environmental Health, Massachusetts Department of Public Health
  - **Discussion – Condon Presentation**
- **Oregon HIA Network: A model for public-private partnerships?**  
Mel Rader, Co-Director - Upstream Public Health
- **Oregon HIA Presentation**  
Steve White, Project Manager, Oregon Public Health Institute
  - **Discussion – Rader/White Presentations**
- **Health Impact Assessment -- A Survey of the Diverse Applications of the Tool**  
Kara Blanker, *Study Committee Member*, Project Manager, Health Impact Project, The  
Pew Charitable Trusts
  - **Discussion – Blankner Presentation**
- **Closing Remarks**

APRIL 12, 2013 – MEETING 4

- **Introductory Remarks**  
Richard H. Strauss, Executive Director, CASE
- **National Association for State Community Services Programs**  
Michael A. Gurecka, Director of Business Development - Energy Services  
Francesca Provenzano, Health Program Supervisor - CT Department of Public Health  
Amy McClean Salls, Director of the Grassroots Advocacy Network for Health Housing  
- National Center for Healthy Housing  
Lynne Page Snyder, Consultant - Health Homes
- **Research Update, Discussion of DRAFT Findings**  
Colleen O'Connor, Associate Study Manager  
David Pines, Study Manager

APRIL 26, 2013 – MEETING 5

- **Introductory Remarks**  
Richard H. Strauss, Executive Director, CASE
- **Research Update, Continued Discussion of DRAFT Findings**  
Colleen O'Connor, Associate Study Manager  
David Pines, Study Manager
- **Research Update, Brainstorm Concepts for Recommendations**  
Colleen O'Connor, Associate Study Manager  
David Pines, Study Manager



## MAJOR STUDIES OF THE ACADEMY

### 2013

- Connecticut Disparity Study – Phase 1
- Connecticut Stem Cell Research Program Accomplishments

### 2012

- Strategies for Evaluating the Effectiveness of Programs and Resources for Assuring Connecticut's Skilled Workforce Meets the Needs of Business and Industry Today and in the Future
- Benchmarking Connecticut's Transportation Infrastructure Capital Program with Other States
- Alternative Methods for Safety Analysis and Intervention for Contracting Commercial Vehicles and Drivers in Connecticut

### 2011

- Advances in Nuclear Power Technology
- Guidelines for the Development of a Strategic Plan for Accessibility to and Adoption of Broadband Services in Connecticut

### 2010

- Environmental Mitigation Alternatives for Transportation Projects in Connecticut
- The Design-Build Contracting Methodology for Transportation Projects: A Review of Practice and Evaluation for Connecticut Applications
- Peer Review of an Evaluation of the Health and Environmental Impacts Associated with Synthetic Turf Playing Fields

### 2009

- A Study of the Feasibility of Utilizing Waste Heat from Central Electric Power Generating Stations and Potential Applications
- Independent Monitor Report: Implementation of the UCHC Study Recommendations

### 2008

- Preparing for Connecticut's Energy Future
- Applying Transportation Asset Management in Connecticut
- A Study of Weigh and Inspection Station Technologies
- A Needs-Based Analysis of the University of Connecticut Health Center Facilities Plan

### 2007

- A Study of the Feasibility of Utilizing Fuel Cells to Generate Power for the New Haven Rail Line
- Guidelines for Developing a Strategic Plan for Connecticut's Stem Cell Research Program

### 2006

- Energy Alternatives and Conservation
- Evaluating the Impact of Supplementary Science, Technology, Engineering and Mathematics Educational Programs
- Advanced Communications Technologies
- Preparing for the Hydrogen Economy: Transportation
- Improving Winter Highway Maintenance: Case Studies for Connecticut's Consideration
- Information Technology Systems for Use in Incident Management and Work Zones
- An Evaluation of the Geotechnical Engineering and Limited Environmental Assessment of the Beverly Hills Development, New Haven, Connecticut

### 2005

- Assessment of a Connecticut Technology Seed Capital Fund/Program
- Demonstration and Evaluation of Hybrid Diesel-Electric Transit Buses

**CONNECTICUT ACADEMY OF SCIENCE AND ENGINEERING**  
**805 Brook Street, Building 4-CERC, Rocky Hill, CT 06067-3405**  
**Phone: 860-571-7143 • e-mail: [acad@ctcase.org](mailto:acad@ctcase.org)**  
**web: [www.ctcase.org](http://www.ctcase.org)**

## **CONNECTICUT ACADEMY OF SCIENCE AND ENGINEERING**

The Connecticut Academy is a non-profit institution patterned after the National Academy of Sciences to identify and study issues and technological advancements that are or should be of concern to the state of Connecticut. It was founded in 1976 by Special Act of the Connecticut General Assembly.

### **VISION**

The Connecticut Academy will foster an environment in Connecticut where scientific and technological creativity can thrive and contribute to Connecticut becoming a leading place in the country to live, work and produce for all its citizens, who will continue to enjoy economic well-being and a high quality of life.

### **MISSION STATEMENT**

The Connecticut Academy will provide expert guidance on science and technology to the people and to the State of Connecticut, and promote its application to human welfare and economic well-being.

### **GOALS**

- Provide information and advice on science and technology to the government, industry and people of Connecticut.
- Initiate activities that foster science and engineering education of the highest quality, and promote interest in science and engineering on the part of the public, especially young people.
- Provide opportunities for both specialized and interdisciplinary discourse among its own members, members of the broader technical community, and the community at large.

**CONNECTICUT ACADEMY OF SCIENCE AND ENGINEERING**  
**805 Brook Street, Building 4-CERC, Rocky Hill, CT 06067-3405**  
**Phone: 860-571-7143 • e-mail: [acad@ctcase.org](mailto:acad@ctcase.org)**  
**web: [www.ctcase.org](http://www.ctcase.org)**