



American Planning Association
Making Great Communities Happen



The State of Health Impact Assessment in Planning

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The Planning and Community Health Center, one of three National Centers for Planning at APA, advances practices that improve human environments to promote public health through active living, healthy eating, and health in all policies.

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Cover image: Photo by Anna Ricklin

FOREWORD

Over the past decade, health impact assessments (HIAs) have increasingly been used by the planning profession to better understand how proposed plans, policies, and projects can shape the public's health—for better or for worse. Even more, the use of the HIA has sprung up in communities looking to improve not just their health, but the way planning happens. Today, we wonder what will come next, and ask “How can the use of the HIA in planning go one step further to promote healthy planning from the start?” This broad yet important question fuels the research described in the following report.

The State of Health Impact Assessment in Planning examines themes from 134 HIAs addressing planning questions—that's one-third of all HIAs in the United States conducted during the years 2004–2014. This study highlights how planning HIAs have catalyzed cross-sector collaboration and advanced connections between health and planning. The 134 HIAs in planning provide additional evidence on the critical role of planning in creating healthy, livable places of lasting value for everyone, while at the same time contributing to the advancement of the field of health impact assessment overall.

According to the data, the discipline is evolving. How do we foresee the role of HIA in planning over the next decade? I see more planners adopting the steps of HIA at the start of the planning process. As more and more planners recognize the need to address health—and many of the social and environmental determinants that shape it—the core aspects of HIA will become more integrated into planning practice. I believe such an approach will make it easier and better to deal with the increasingly complex challenges communities face. And who will benefit? We will—planners, our planning partners, and the citizens we serve.

As a member of the American Planning Association, it is clear to me that the field of Health Impact Assessment offers a mechanism for strengthening planning practice. Currently, two APA initiatives strongly represent the future of health and planning. One, the Sustaining Places Initiative, has established a set of comprehensive plan standards defining the principles, processes, and attributes of sustainable comprehensive plans. “Healthy Community” is one of six prioritized principles, indicating the importance of public health in our field. HIAs offer a tool for ensuring we meet this goal and assessing how our work can contribute to eliminating health disparities.

The second project is Plan4Health, a program launched in 2014 in partnership with the American Public Health Association. With funding from the Centers for Disease Control and Prevention, Plan4Health supports local coalitions working at the intersection of planning and public health to address health equity through nutrition or physical activity strategies. This catalytic program demonstrates how planners across the country are engaging with new partners and sectors, and we are excited about the momentum and energy around planning for health.

The first identified HIA in planning was the *Rincon Hill Area Plan* HIA in San Francisco in 2004. Since then, the use of HIAs has increased substantially, building from a shared set of core values that often mirrors best planning practices. In the pages that follow, you will find examples of HIAs from all parts of the country addressing an array of planning topics. Like planning, the process has varied (no two HIAs are exactly alike), but it has shown us a new way to incorporate health into planning. I invite you to read the report and conceptualize how you can consider health in your work and become a leader in the creation of a more sustainable, equitable, and healthier future.



Carol Rhea, FAICP
APA President

KEY TERMS

Health Impact Assessment (HIA): a systematic process that uses an array of data sources and analytic methods and considers input from stakeholders to determine the potential effects of a proposed policy, plan, program, or project on the health of a population and the distribution of those effects within the population. These can be categorized into four basic types (National Research Council 2011):

- **Rapid:** An HIA that can be completed in a short time frame (weeks or months), often focused on less complex decisions. These HIAs generally involve literature reviews and secondary data analysis, but can still retain an emphasis on stakeholder engagement.
- **Desktop:** A rapid HIA that entails little or no stakeholder engagement.
- **Intermediate:** An HIA that involves more time and resources (sometimes several months) and a more complex scope than rapid HIAs, using more detailed analysis and more stakeholder engagement than a rapid HIA. These HIAs typically do not involve collecting new data.
- **Comprehensive:** An HIA that requires the collection of new, primary data and involves a complex scope and extensive stakeholder engagement. These HIAs can take longer than a year to complete.

Planning terms

Planning: the plans, policies, and projects that govern how the built environment impacts an entire population in a specified geographic area. The three components of planning assessed here are defined as:

- **Plan:** an official document that sets goals, identifies objectives, and establishes policies that guide future development in a specified geographic area.
- **Policy:** an operational process or rule necessary for achieving the goals and objectives set forth in a plan.
- **Project:** an action undertaken to implement a plan or policy.

Public health terms

- **Population Health:** the health outcomes of a group of individuals, including the distribution of such outcomes within the group. These groups are often geographic populations such as nations or communities, but can also be other groups such as employees, racial or ethnic groups, people with disabilities, prisoners, or any other defined group.
- **Chronic Disease:** The U.S. National Center for Health Statistics defines a chronic disease as one lasting three months or more. Chronic diseases generally cannot be prevented by vaccines or cured by medication, nor do they just disappear. Examples of chronic illnesses include diabetes, heart disease, arthritis, kidney disease, HIV/AIDS, lupus, and multiple sclerosis.
- **Social Determinants of Health:** The World Health Organization defines the social determinants of health as the conditions in which people are born, grow, live, work, and age. As described in Healthy People 2020, "our health is . . . determined in part by access to social and economic opportunities; the resources and supports available in our homes, neighborhoods, and communities; the quality of our schooling; the safety of our workplaces; the cleanliness of our water, food, and air; and the nature of our social interactions and relationships."
- **Health Disparities:** differences in health status among distinct segments of the population, including differences that occur by race or ethnicity, sex, sexual identity, age, disability, education, income, or living in various geographic localities.
- **Social Equity:** an approach to fairness that gives everyone what they need to be successful and ensures everyone has the same access to community assets and opportunities for health. Using a social equity approach acknowledges differences and responds to disadvantage accordingly. In contrast, equality aims to ensure that everyone gets the same treatment and resources, which would work if everyone started from the same place and needed the same resources to succeed.
- **Health in All Policies:** a collaborative approach to improving health that integrates and articulates health considerations into policy making across sectors, and at all levels.

1: INTRODUCTION

Where people live, work, and play can directly and indirectly influence behaviors, individual health, and collectively, community health. In fact, the planning profession is deeply rooted in public health; planning was initially established to limit the spread of disease and increase sanitation in urban areas by creating standards for development and separating land uses. The 20th century marked a divergence between these fields, but the 21st century witnessed a renewed focus on uniting the two professions.

The International Association for Impact Assessment defines HIA as “a systematic process that uses an array of data sources and analytic methods and considers input from stakeholders to determine the potential effects of a proposed policy, plan, program, or project on the health of a population and the distribution of those effects within the population” (IAIA 2014). HIA is a tool that brings together scientific data, health expertise, and public input to understand how a proposed plan, policy, program, project, or action could affect the public’s health.

HIAs are used by the planning profession to better understand the health impacts of proposed plans, policies, and projects on neighborhoods and communities. Between 2004 and 2014, 134 HIAs were conducted in the United States on decisions that meet this report’s definition of planning (“planning HIAs”), representing more than a third of the total HIAs conducted or in progress in the country during that time. *The State of Health Impact Assessment in Planning* analyzes these HIAs and the use of HIAs within planning practice. The analysis in this report is the first to look at the current state of HIAs within the planning practice.

Methodology

For the purposes of this project, PCH defined planning as *the plans, policies, and actions that govern how the built environment impacts an entire population in a specified geographic area*. This report purposely excludes housing and transportation-specific HIAs due to existing reports summarizing HIAs in those two sectors.¹

After establishing this definition, PCH identified every HIA conducted on a decision that matched this definition.

PCH identified the planning HIAs through a search of two databases of HIAs conducted in the United States:

- The Health Impact Project: <http://www.pewtrusts.org/en/multimedia/data-visualizations/2015/hia-map>
- UCLA HIA Clearinghouse: <http://www.hiaguide.org/>

Additionally, outreach to APA’s and the Health Impact Project’s networks identified HIAs not captured by the initial database search. The final list included a total of 134 planning HIAs. See Appendix 1 for a more detailed explanation on the report’s methodology.

Identification of subset for in-depth review

APA selected 27 of the 134 planning HIAs for further study. The subset represents the diversity of planning HIAs, but focuses on HIAs that looked at policies or plans related to planning topics that have the potential to impact health more directly through built environment changes, such as Development Regulations, Infrastructure, Public Finance, Regional Planning, and Climate Change.

Identification of case studies

From the subset of 27, APA selected five HIAs for case study analysis. These five were chosen based on planning topic, decision level, and geographic location. APA confirmed that in-depth analysis on these five HIAs had not already been done.

¹ The Health Impact Project collaborated with the National Center for Healthy Housing on a project examining HIAs on housing decisions. See National Center for Healthy Housing and National Housing Conference. 2016. *A systematic review of health impact assessments on housing decisions and guidance for future practice*. Pew Charitable Trusts, March. Available at <http://www.nchh.org/Portals/0/Contents/Guidance-for-Conducting-HIAs-on-Housing-Decisions.pdf>. In order to narrow the scope of HIAs to be reviewed, transportation HIAs that looked specifically at roads and bridges instead of the land use-transportation nexus were not included. Additionally, a review of transportation-related HIAs was recently published in *Transportation Research Record*. See Dannenberg, A.L., A. Ricklin, C.L. Ross et al. 2014. “Use of health impact assessment for transportation planning: importance of involving transportation agencies in process,” *Transportation Research Record* no. 2452: 71–80.

Table 1. Selected Case Studies			
Name	Planning Topic	Decision Level	Region of the United States
Growing for Kane Health Impact Assessment	Alcohol and Food	County	Kane County, Illinois Midwest
Health Impact Assessment of Atlanta Regional Plan 2040	Regional Planning	Regional	Atlanta Region, Georgia South
<i>planokc</i> Comprehensive Plan Health Impact Assessment	Comprehensive Plan	City	Oklahoma City, Oklahoma South Central
Ports of Los Angeles and Long Beach Maritime Port HIA Scope	Land Use/Transportation	Federal	Los Angeles West
Transit-Oriented Development and Health: A Health Impact Assessment to Inform the Healthy Neighborhood Equity Fund	Land Use/Public Finance	Regional	Boston Northeast

What did we learn?

HIA shares a set of core values with planning. HIA practice has also advanced and illustrated connections between health and planning, and catalyzed cross-sector collaboration. The field is evolving, and addresses all decision levels to support the development of healthy places wherever people live, work, and play.

1. ***HIA and planning share best practices and core values.*** Data-informed decision making, community engagement and community building (especially for the most vulnerable), flexibility, and a dedication to process as well as outcomes are all foundational to HIA and to planning.
2. ***HIA illustrates a number of connections between health and planning.*** Not only can HIA be used as a tool to apply health data to planning, it can also illustrate links among health and current and future conditions as they relate to other important planning-related outcomes, such as economic benefits.
3. ***HIA catalyzes and fosters cross-sector collaboration.*** HIA offers a system for initial collaboration and builds capacity for future partnerships, which can lead to more synergistic efforts among planning and public health over time.
4. ***HIA is evolving.*** As a tool, HIA is evolving toward a more integrated process by providing a framework to include health considerations from the very beginning of the planning process, and supporting a “health in all policies” approach.

In the pages that follow, this report will present research that tells the story of how the use of HIA has grown, details how the HIA process can vary, and provides information to inform the next two phases of this project—developing an HIA toolkit for planners and outlining the value of HIA in planning.

2: OVERVIEW OF HIAS IN PLANNING

APA's PCH identified every known HIA conducted in the United States between 2004–2014 on a plan or planning-related policy or project and analyzed these HIAs by planning topic, type, date, decision level, and location. Such information is important for assessing the use and effectiveness of HIAs within the planning profession and the communities planners serve. The number of planning HIAs conducted increased from one in 2004 to a peak of 29 in 2012 and 23 in 2014 (Figure 1).

Planning HIAs make up one-third of the more than 350 HIAs completed or in progress in the United States. A clear majority of the 134 planning HIAs (two-thirds) addressed plans, including comprehensive plans, corridor plans, and functional plans. A little more than one-fifth addressed policies, such as zoning and development regulations and new utility fees. One-tenth of the planning HIAs addressed projects such as the development of a new community facility (Figure 2).

HIAs are flexible. The range of topics addressed by these HIAs (see Figure 3) reflects the comprehensive nature of planning as a discipline and the many ways in which to address human health through planning. The 134 HIAs addressed planning issues in 14 broad topic areas, as categorized in Figure 2. More than half of the planning HIAs focused on land use, one of the primary focus areas of planning departments. Even within the land-use category, the HIAs addressed varying geographic scales and different health conditions or outcomes. HIAs are unique, and each reflects the circumstances, location, and way the HIA was conducted. As a result, completed HIAs vary in their impact.

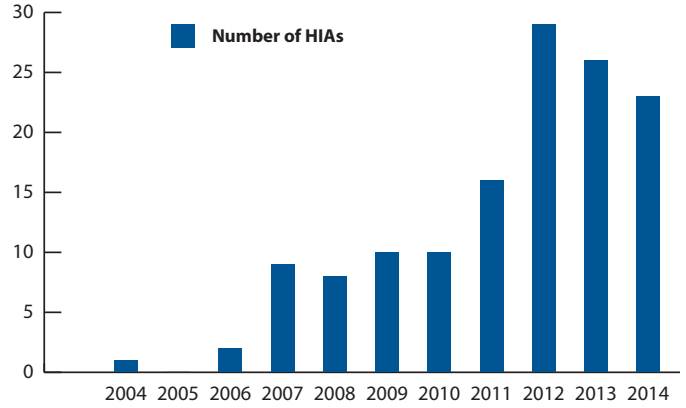


Figure 1. Number of planning HIAs completed annually in the United States. (2004–2014)

Plan, Policy, or Project

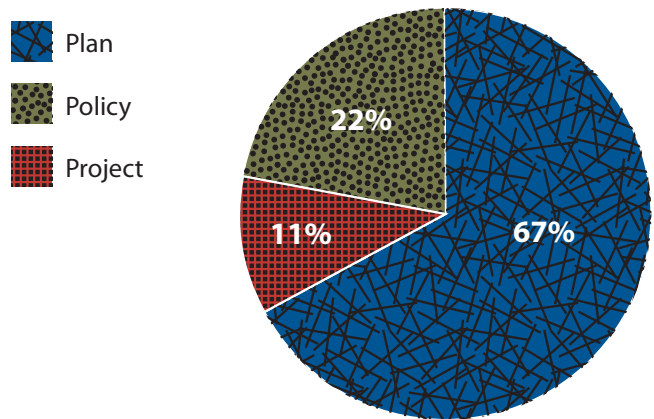


Figure 2. Plan, Policy, or Project

Primary Planning Topic Addressed by HIAs	#
Land Use	70
Comprehensive Plan	12
Development Regulations	10
Transportation	9
Alcohol and Food	7
Public Finance	6
Environmental	5
Regional	4
Disaster Mitigation	2
Housing	2
Growth Management	2
Community Services	2
Climate Change	2
Infrastructure	1

Figure 3. Planning Topics

Table 2: List of HIAs		
Name of HIA	Location	Plan, Policy, Project
Expanding Urban Tree Canopy as a Community Health Climate Adaptation Strategy: A Health Impact Assessment of the Ann Arbor Urban & Community Forest Management Plan	Ann Arbor, MI	Plan
Hospitals and Community Health HIA: A Study of Localized Health Impacts of Hospitals	Atlanta	Plan
Health Impact Assessment of <i>Atlanta Regional Plan 2040*</i>	Atlanta	Plan
South Billings Master Plan Health Impact Assessment	Billings, MT	Plan
Minimizing the Health Effects of Climate Change in the South Florida Region: A Health Impact Assessment	Broward County, FL	Plan
Derby District Redevelopment- Commerce City, Colorado	Commerce City, CO	Plan
Michigan Street Corridor Plan: A Health Impact Assessment	Grand Rapids, MI	Plan
Humboldt County General Plan: Health Impact Assessment	Humboldt County, CA	Plan
A Rapid Health Impact Assessment of the City of Los Angeles' Proposed University of Southern California Specific Plan	Los Angeles	Plan
Los Angeles and Long Beach Maritime Port HIA Scope*	Los Angeles and Long Beach, CA	Plan
Mid-South Regional Greenprint HIA	Memphis, TN	Plan
City of Minneapolis Above the Falls Health Impact Assessment	Minneapolis	Plan
HIA of Transit-Oriented Development within Nashville's Northeast Corridor	Nashville, TN	Plan
<i>planokc</i> Comprehensive Plan Health Impact Assessment*	Oklahoma City, OK	Plan
Healthy Vinton: A Health Impact Assessment Focused on Water and Sanitation in a Small Rural Town on the U.S.-Mexico Border	Vinton, TX	Plan
Fort McPherson Rapid Health Impact Assessment: Zoning for Health Benefit to Surrounding Communities during Interim Use	Atlanta	Policy
Zoning for Healthy Baltimore: A Health Impact Assessment of the Transform Baltimore Comprehensive Zoning Code Rewrite	Baltimore	Policy
Universal Design in Single-Family Housing	Davidson, NC	Policy
Growing for Kane Health Impact Assessment*	Kane County, IL	Policy
Zoning for Walkable Mixed-use Neighborhoods: A Desktop Health Impact Assessment	Omaha, NE	Policy
Transit-Oriented Development and Health: A Health Impact Assessment to Inform Neighborhood Equity Fund*	Boston	Policy
Potential Health Effects of Expanding Liquor Licenses to Grocery and Convenience Stores	Topeka, KS	Policy
Assessing the Impact of a Transportation Utility Fee in Columbia, MO	Columbia, MO	Policy
Hardest Hit Fund Demolition and Housing Stability Project: Health Impact Assessment	Detroit	Policy
North Aurora Regional Recreation Center HIA	Aurora, CO	Project
Health Impact Assessment: Promoting healthy, cost-effective, sustainable and equitable decision making in Delaware	Delaware City, DE	Project
Strategic Health Impact Assessment on Wind Energy Development in Oregon	Oregon	Project
<i>*See Appendix for case study</i>		

3: HIA REVIEW

Together, the 134 planning HIAs summarize a story of one tool to connect planning and public health. To understand the use of planning HIAs, PCH narrowed the list of 134 HIAs to 27 for in-depth study. The selection of these 27 HIAs was driven by a number of factors—diversity of location and decision level, primary and/or secondary focus on one of 14 selected planning topics (as detailed in Appendix 1), and type of HIA (desktop, rapid, intermediate, comprehensive). For a list of the 27 HIAs, see Table 2. PCH analyzed each HIA to assess the process, data sources, methods, and health determinants/indicators used. This chapter summarizes how the HIA process was used in the 27 HIAs evaluated. To avoid duplication, the five case study HIAs are incorporated into the process analysis but not the HIA summaries.

HIA process

In general, HIAs follow six steps—screening, scoping, assessment, recommendations, reporting, and monitoring/evaluation. This section summarizes how the planning HIAs reviewed by PCH were generally conducted.

Screening

During the screening phase, the HIA team and stakeholders determine whether an HIA is needed, if it can be accomplished in a timely manner, and if it would add value to the decision-making process. There are many ways to reach the decision to conduct the HIA. In several of the HIAs, stakeholders took a walking or driving tour of the neighborhood as part of the screening process. The screening phase can also reveal existing health disparities and identify potential differential impacts of the plan, policy, or project on vulnerable populations.

Scoping

The process of scoping identifies the pathways between the plan, policy, or project under consideration and the potential health impacts, and begins to prioritize the health effects by population and geography. In the HIAs analyzed, scoping techniques typically engaged a mix of key stakeholders, impacted residents, public officials, business owners, and community organizations in interactive discussions.

Planners and officials participated in the scoping process in multiple ways, usually in joint efforts with community organizations or consulting firms that facilitated various levels of engagement with the affected communities. While engaging directly with residents is the preferred method (and was conducted in over half of the HIAs), sometimes HIA teams consulted representative community organizations and neighborhood groups to more quickly gain insight into residents’ needs and issues and make community connections. Establishing an advisory committee with these key stakeholders assists the HIA by collaboratively developing research questions and guidance on methodology.

Some HIA leaders hosted training workshops for the stakeholders and residents whose involvement was essential for the HIA process. The workshops provided information about the HIA and its purpose and trained leaders on how to engage with community members, assess conditions, or gather data and literature for recommendations. Community meetings also served as venues for soliciting community input on other relevant issues, including social and economic factors and related health outcomes that could be affected by the plan, policy, or project. Other HIAs relied on smaller stakeholder meetings or advisory committees to prioritize focus areas to assess for the HIA.

HIA teams used collaborative techniques to engage residents in the creation of health pathway diagrams, which identify how the plan, policy, or project under consideration could affect health. The example shown in Figure 5 (see page 12) illustrates the complexity that health pathway diagrams can capture. These diagrams are framing tools and help identify research questions and appropriate health indicators for the assessment.

Assessment

In the assessment phase, HIA practitioners gather relevant data (including demographic, socioeconomic, health outcome, and environmental data from local, state, and national sources), assess the pathways between inputs and impacts, and draw conclusions

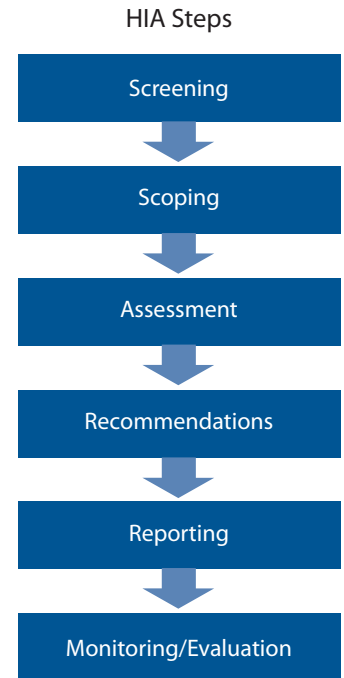


Figure 4. HIA Steps

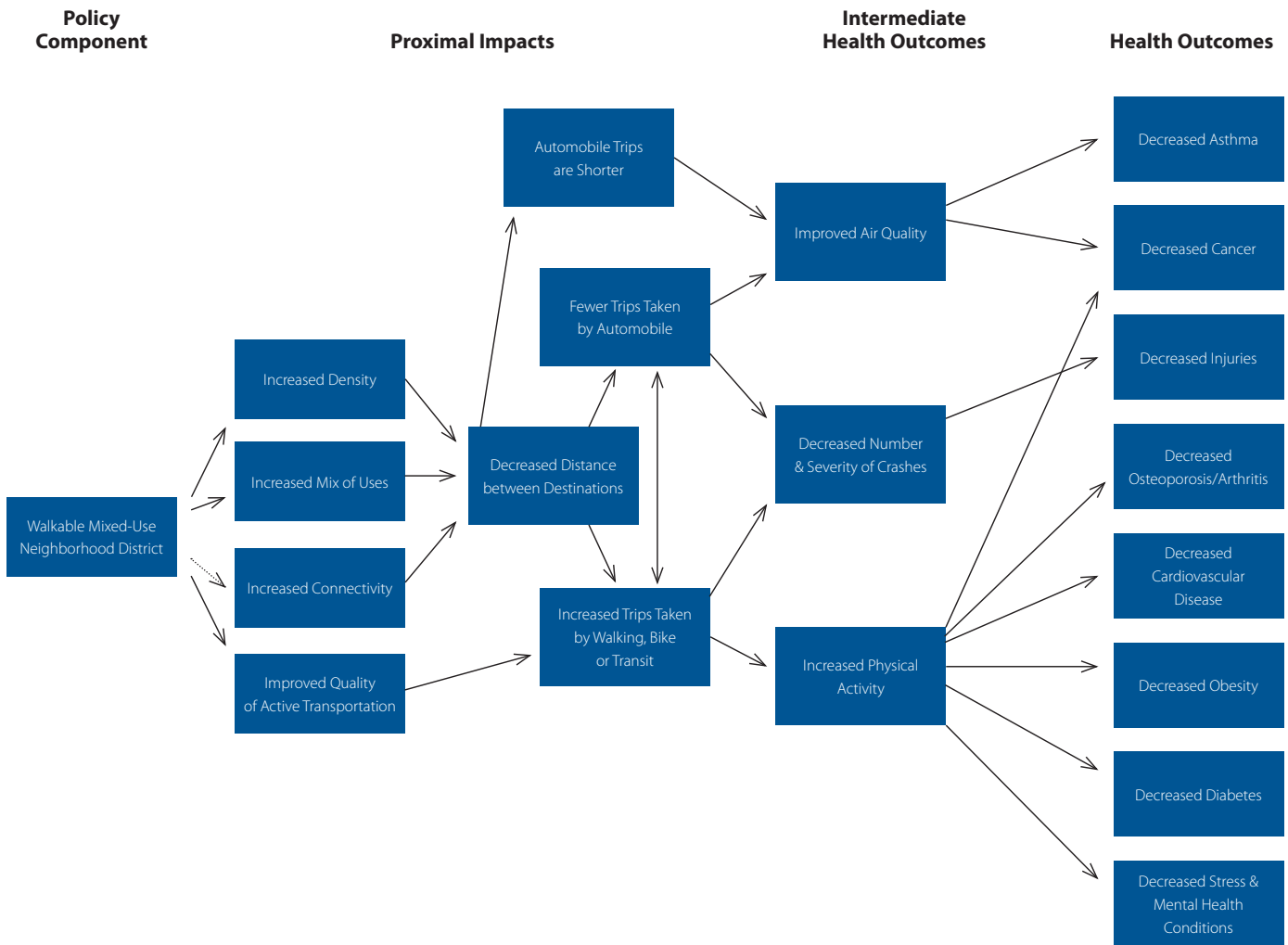


Figure 5. Example health pathway diagram (credit: Douglas County Health Department, *Zoning for Walkable Mixed-use Neighborhoods: A Desktop Health Impact Assessment*, 2011.)

regarding the potential impact of the plan, policy, or project in question. Typically, the assessment phase involves a mix of literature review, community engagement, and primary and/or secondary data collection. The activities during this phase vary by HIA type (desktop, rapid, intermediate, comprehensive) and by issue and community.

HIAs include a baseline assessment to provide context from which to predict potential changes and impacts as a result of the implementation of the plan, policy, or program. Baseline assessments came from existing data, field observations, and listening sessions. HIA practitioners conducted literature reviews to analyze issues and research potential mitigation strategies in all of the planning HIAs. Such reviews varied by number of resources assessed (as few as 11 and up to 288) and types of sources used.

Some HIAs relied on survey and scholarly data gathered from past comprehensive or master plans, which provided sufficient data for the purposes of the HIA. Most of the HIAs, however, required additional data collection.

Recommendations

In developing recommendations, HIA practitioners use results from the assessment to suggest changes to the proposed plan, policy, or project for the benefit of public health. Each of the HIAs offered multipronged recommendations to mitigate health concerns, and more than half of the reports identified actions that could be implemented from the HIA recommendations.

PCH categorized the recommendations using the 14 planning topics introduced in Figure 2. Recommendations related to Land Use and Community Services were the most common ones offered by the HIAs, with both occurring in 14 of the 27 HIAs reviewed in depth. Other common recommendations included Environmental (13), Transportation (12), Development Regulations (10), and Infrastructure (10). Fewer recommendations made were in the Housing, Alcohol and Food, Growth Management, Public Finance, Climate Change, Regional, and Mitigation categories.

Reporting

Reporting refers to the dissemination of HIA findings to decision makers, affected communities, and the general public. About a quarter of the HIA teams used dedicated websites and online materials as part of their reporting to the public. Roughly half of the HIA teams presented their draft reports and recommendations at public meetings to solicit resident and stakeholder feedback for final revisions.

Monitoring and evaluation

In the final step of HIA, practitioners and stakeholders evaluate the HIA according to accepted standards of practice. They also monitor and measure its impact on decision making and health. In more than half of the HIAs, project staff and stakeholders performed evaluations of the HIA process, giving consideration to successes, lessons learned, and stakeholder and community engagement.

However, only a third of the assessed HIAs included a detailed ongoing monitoring plan with roles and responsibilities tied to specific agencies and organizations. Communities struggle to adhere to HIA monitoring and evaluation plans due to insufficient dedicated resources; project turnover in planning departments may also play a role. Tracking HIA recommendation implementation and resulting health outcomes requires a long-term commitment from HIA stakeholders, such as budgeting staff time and resources for evaluation activities.

Types of HIAs

The HIAs analyzed can be divided into three categories: HIAs of plans, policies, and projects. This section examines these HIAs by their engagement methods, health determinants, and recommendations.

HIAs OF PLANS
<i>Expanding Urban Tree Canopy as a Community Health Climate Adaptation Strategy:</i>
A Health Impact Assessment of the <i>Ann Arbor Urban & Community Forest Management Plan</i>
Location: Ann Arbor, Michigan
Topic: Climate Change; Secondary Topic: Mitigation
Decision level: Local
Organization(s): Michigan Department of Community Health
Health conditions/outcomes addressed: Asthma, chronic obstructive pulmonary disease, diabetes, hypertension, mental health, obesity, air pollution, physical activity, crime exacerbated by heat
Recommendations: After two years of assessment and engagement with an advisory committee and citywide organizations, this HIA recommended that the <i>Ann Arbor Urban Canopy Forest Management Plan</i> consider the six residential areas assessed by the HIA research map as priority areas for targeted tree planting. Suggestions were made that the six tree planting areas be prioritized using population size, neighborhood receptiveness to tree planting and maintenance, and other factors.
<i>Hospitals and Community Health HIA: A Study of Localized Health Impacts of Hospitals</i>
Location: Atlanta
Topic: Land Use; Secondary Topic: Community Services
Decision level: Local
Organization(s): Georgia Tech Center for Quality Growth and Regional Development
Health conditions/outcomes addressed: Safety from crime and traffic congestion/accidents, noise, air quality, diabetes, obesity, cancer, heart disease, poor mental and social health, poor physical condition, accessibility to a hospital, and amenities such as stores, parks and trails

HIAs OF PLANS
<p>Recommendations: The Advisory Committee, local residents, and other organizations that contributed to this HIA focused on injury risk prevention, safety from crime and automobiles, improving perceptions of safety, improving access to surrounding facilities (including the hospital) and encouraging universal design, increasing physical activity, and increasing community opportunities and cohesion.</p>
<p><i>South Billings Master Plan Health Impact Assessment</i></p>
<p>Location: Billings, Montana</p>
<p>Topic: Land Use</p>
<p>Decision level: Local</p>
<p>Organization(s): RiverStone Health, City of Billings Planning Department</p>
<p>Health conditions/outcomes addressed: Obesity, chronic diseases from poor diet such as diabetes and stroke, nutrition, cancer, safety from crime, access to jobs/services/amenities, physical activity through walking and biking, safety from motor vehicle crashes</p>
<p>Recommendations: Key recommendations in this rapid HIA included the development of policies and programs that enhance health through mixed use development, affordable housing, active transportation, and street connectivity. Other priorities recommended increasing access to fresh food through community gardens, farmers markets, and supermarkets.</p>
<p><i>Minimizing the Health Effects of Climate Change in the South Florida Region: A Health Impact Assessment</i></p>
<p>Location: Broward County, Florida</p>
<p>Topic: Climate Change</p>
<p>Decision level: Regional</p>
<p>Organization(s): Florida Public Health Institute</p>
<p>Health conditions/outcomes addressed: Weather-related morbidity and mortality, vector-borne and zoonotic diseases, waterborne diseases, mental health and stress-related disorders, human developmental effects, neurological diseases and disorders, foodborne diseases and nutrition, cardiovascular disease and stroke, cancer, asthma, health-related morbidity and mortality, respiratory allergies, airway diseases</p>
<p>Recommendations: This HIA prioritized integrating health into the planning process along with educating the public and officials on health, its relation to climate change, and how to take action. One suggestion was to establish priority areas by mapping heat-vulnerable populations and creating an ongoing monitoring process to evaluate plans based on the heat map and shade from tree canopy. Finally, this HIA recommended that the public officials and organizations of the region support work that investigates the impacts and costs of climate change and use health metrics when planning for climate change.</p>
<p><i>Derby District Redevelopment in Commerce City, Colorado</i></p>
<p>Location: Commerce City, Colorado</p>
<p>Topic: Land Use; Secondary Topic: Redevelopment</p>
<p>Decision level: Local</p>
<p>Organization(s): Tri-County Health Department</p>
<p>Health conditions/outcomes addressed: Chronic diseases (diabetes, heart disease, and stroke), nutrition, physical activity through walking/biking, mental health, reduced injury and safety from traffic collisions and crime, increasing social capital and access to jobs, services, and amenities</p>
<p>Recommendations: Recommendations in this HIA include integrating green/open space, improving transit services/facilities, increasing affordable housing units, establishing a firm redevelopment plan, adopting Crime Prevention through Environmental Design techniques and traffic-calming solutions, and initiating a bicycle/pedestrian master plan.</p>

HIA _s OF PLANS
<i>Michigan Street Corridor Plan: A Health Impact Assessment</i>
Location: Grand Rapids, Michigan
Topic: Land Use; Secondary Topic: Alternatives Analysis
Decision level: Local
Organization(s): City of Grand Rapids, Public Sector Consultants, Kent County Health Department Community Research Institute
Health conditions/outcomes addressed: Obesity and related diseases, personal injury, heat-related illness, quality of life, mortality, mental health, asthma/respiratory conditions
Recommendations: Major recommendations in this HIA addressed access to fresh food, pedestrian-friendly design, bicycle-friendly design, and reducing vehicle emissions to protect air quality. An additional recommendation was to prioritize zoning and economic development incentives, along with development that enhances mobility and housing affordability.
<i>Humboldt County General Plan: Health Impact Assessment</i>
Location: Humboldt County, California
Topic: Comprehensive Plan
Decision level: County
Organization(s): County of Humboldt Department of Health and Human Services: Public Health Branch, Human Impact Partners, Humboldt Partnership for Active Living
Health conditions/outcomes addressed: Physical activity and injury, respiratory disease, mortality, weather-related disease and injury, obesity and nutrition, heart disease, cancer, mental health, crime, social cohesion, access to jobs/services/amenities
Recommendations: The depth of citizen engagement in this HIA resulted in recommendations to further community input, activities, and education, such as the creation of a Citizen's Advisory Committee. Other recommendations included preserving agricultural lands, timberlands, and existing parks; creating policies that train local workforce and employee opportunities; and increasing access to food and facilities through active modes of transportation.
<i>A Rapid Health Impact Assessment of the City of Los Angeles' Proposed University of Southern California Specific Plan</i>
Location: Los Angeles
Topic: Land Use
Decision level: Local
Organization(s): Human Impact Partners, Strategic Actions for a Just Economy, Esperanza Community Housing Corp.
Health conditions/outcomes addressed: Displacement, poor housing conditions and overcrowding, infectious diseases, air quality, employment, chronic diseases related to weight and obesity (such as diabetes and hypertension), nutrition, child development, social cohesion
Recommendations: Major recommendations in this rapid HIA included proposals to finance an affordable housing trust fund with community oversight, collaboration, and dissemination of information. Furthermore, the HIA practitioners recommended that the University of Southern California provide legal support and financial services to tenants, create a social investment fund to address poverty and education in the community, monitor conformity with job-related policies and changes, improve local hiring policies, institute a minimum living wage, and create local hiring and job training programs.
<i>Mid-South Regional Greenprint HIA</i>
Location: Memphis, Tennessee
Topic: Land Use; Secondary Topic: Sustainability
Decision level: Regional
Organization(s): Georgia Health Policy Center
Health conditions/outcomes addressed: Physical activity, quality of life, community health and wellness, social capital, chronic diseases, environmental health

HIAs OF PLANS
<p>Recommendations: The recommendations of this comprehensive HIA addressed building healthy communities, framing the discourse of existing parks and trails as current sources for positive health, and promoting healthy travel behaviors throughout the region.</p>
<p><i>City of Minneapolis Above the Falls Master Plan</i></p>
<p>Location: Minneapolis</p>
<p>Topic: Land Use; Secondary Topic: Waterfront Development</p>
<p>Decision level: Local</p>
<p>Organization(s): Minneapolis Department of Health and Family Support</p>
<p>Health conditions/outcomes addressed: Obesity, mental health, water quality of the river, air pollution and asthma, noise, neighborhood cohesion, safety/ security, employment, housing</p>
<p>Recommendations: This comprehensive HIA recommended working with existing businesses and industries to implement local hiring practices. Other recommendations for the master plan included: monitoring air quality and noise levels and working with industry to mitigate air and noise pollution; working with home owners and landlords to improve existing residential areas/housing; exploring safe alternatives for youth access to the Riverfront; and supporting efforts to engage underrepresented groups in designing, developing, and maintaining Upper Mississippi Riverfront improvements.</p>
<p><i>HIA of Transit-Oriented Development within Nashville's Northeast Corridor</i></p>
<p>Location: Nashville, Tennessee</p>
<p>Topic: Land Use; Secondary Topic: Public Finance</p>
<p>Decision level: Regional</p>
<p>Organization(s): Nashville Area Metropolitan Planning Organization</p>
<p>Health conditions/outcomes addressed: Transportation access, physical activity through walking/biking, nutrition and access to healthy foods, obesity and overweight illnesses such as diabetes and heart disease, air quality, green space, social cohesion, pedestrian and bicyclist safety, mental health, disabilities</p>
<p>Recommendations: The first phase of this HIA resulted in design recommendations that were incorporated into the site plans, including senior housing, community gardens, walking paths, a community gathering space, and public art. General recommendations included building connectivity between the three communities in the corridor and neighboring communities, building social capital and minimizing adverse negative social determinants of health, and preserving positive elements already present in the community. The MPO planned to use the pilot experience to conduct a more comprehensive HIA as part of the second phase of the planning process.</p>
<p><i>Healthy Vinton: A Health Impact Assessment Focused on Water and Sanitation in a Small Rural Town on the U.S.-Mexico Border</i></p>
<p>Location: Vinton, Texas</p>
<p>Topic: Infrastructure</p>
<p>Decision level: Local</p>
<p>Organization(s): University of Texas, El Paso</p>
<p>Health conditions/outcomes addressed: Exposure to arsenic, dissolved salts, bacteria (E. coli), water scarcity from drought, drinking water standards, and fire risk from low water pressure</p>
<p>Recommendations: The need for quality infrastructure and funding generated recommendations in this HIA that prioritized connecting the community to El Paso Water Utilities for water and sanitation and seeking financial assistance to support these projects. Other recommendations included the installation of fire hydrants and development of economic and community strategic plans and educational campaigns for water conservation and sanitation.</p>

HIAs OF POLICIES
<i>Fort McPherson Rapid Health Impact Assessment: Zoning for Health Benefit to Surrounding Communities during Interim Use</i>
Location: Atlanta
Topic: Development Regulations; Secondary Topic: Zoning
Decision level: Local
Organization(s): Georgia Health Policy Center, Georgia Tech Department of Planning and Community Development, Georgia Stand-Up
Health conditions/outcomes addressed: Nutrition, physical activity, alcohol and tobacco use, social connections, chronic diseases (e.g., cardiovascular disease and diabetes), obesity, mental health, cancer, safety from crime
Recommendations: This rapid HIA recommended enhancing the zoning blueprint to provide access to fresh food retail outlets, permitting gardening and small-scale farming, limiting fast-food restaurants, providing effective advertising, allowing for community meeting space, and increasing connectivity to green spaces. One specific recommendation was to “include a statement of overall intent to maximize benefits and minimize or mitigate harms to the health of surrounding populations.”
<i>Zoning for Healthy Baltimore: A Health Impact Assessment of the Transform Baltimore Comprehensive Zoning Code Rewrite</i>
Location: Baltimore
Topic: Development Regulations; Secondary Topic: Zoning
Decision level: Local
Organization(s): Johns Hopkins Bloomberg School of Public Health
Health conditions/outcomes addressed: Violent crime, obesity, obesity-related illness, physical activity, pedestrian safety/injury, nutrition
Recommendations: This HIA recommended creating walkable environments to increase access to healthy food, along with expanding mixed use areas, pedestrian corridors, and transit-oriented development. The HIA also recommended revising the zoning code and updating definitions.
<i>Universal Design in Single-Family Housing in Davidson, North Carolina</i>
Location: Davidson, North Carolina
Topic: Development Regulations; Secondary Topic: Universal Design
Decision level: Local
Organization(s): Davidson Public Health Department
Health conditions/outcomes addressed: Mental health and depression, isolation/segregation of residents, risk of injury, stress, strain, and chronic disease
Recommendations: This desktop HIA recommended adopting universal design standards to facilitate aging in place and allow persons with mobility limitations to feel comfortable in their own homes and throughout the community. An educational campaign was conducted to bring awareness to the needs of universal design in the community.
<i>Zoning for Walkable Mixed-use Neighborhoods: A Desktop Health Impact Assessment</i>
Location: Omaha, Nebraska
Topic: Development Regulations; Secondary Topic: Zoning
Decision level: Local
Organization(s): Douglas County, Nebraska, Public Health Department; Clarion Associates
Health conditions/outcomes addressed: Physical activity through walking, chronic diseases, mental health, premature death, air quality from exposures to pests and allergens, stress, access to healthy food/services/amenities, housing affordability
Recommendations: This desktop HIA made recommendations to enact regulations to promote walkable mixed use neighborhoods, highlighting market-based justifications for walkable development, and developing language (such as 20-minute neighborhoods) around the “walkable” concept that could be easily understood by average citizens.

HIAs OF POLICIES
<i>Potential Health Effects of Expanding Liquor Licenses to Grocery and Convenience Stores</i>
Location: Topeka, Kansas
Topic: Food Systems
Decision level: State
Organization(s): Kansas Health Institute
Health conditions/outcomes addressed: Alcohol consumption among adults and youth and related deaths/illnesses, alcohol abuse, "Driving Under the Influence" arrests, alcohol-related traffic incidents and mortality among adults and youth, crime, sexually transmitted diseases, domestic violence, child abuse and neglect, health care costs of alcohol-related injuries
Recommendations: Most of the recommendations in this HIA offered solutions through policy development and included alcohol sale limitations, tracking alcohol sales and locations of sale, monitoring youth specifically when tracking alcohol use throughout the state, increasing sobriety checkpoints and public awareness, and offering language and survey additions to the State Added Module of the Behavioral Risk Factor Surveillance System (BRFSS) to include alcohol as health scope.
<i>Assessing the Impact of a Transportation Utility Fee in Columbia, Missouri</i>
Location: Columbia, Missouri
Topic: Public Finance; Secondary Topic: Transportation
Decision level: Local
Organization(s): Columbia/Boone County Department of Public Health and Human Services, The PedNet Coalition, Central Missouri Community Action
Health conditions/outcomes addressed: Hunger and malnutrition, stunted physical development, lowered immunity, reduced productivity at school or work, decreased quality of life, health care affordability, chronic illness and diseases, unsafe housing conditions, housing security, mental health, child development, safety from crime, social support
Recommendations: This rapid HIA recommended that the county create consistent bus routes and schedules, post them at all bus stops, and make the transit website more navigable. Other recommendations include increasing public outreach for the bus system, gathering community input for funding options for public transit, adjusting schedules to accommodate lower-income workers, and considering utility fee waivers for low- and fixed-income households and other at-risk populations. It also recommended providing flexible hours to accommodate service industry workers and locate bus stops near key access points, especially food stores.
<i>Hardest Hit Fund Demolition and Housing Stability Project: Health Impact Assessment</i>
Location: Detroit
Topic: Public Finance; Secondary Topic: Infrastructure Investment
Decision level: Local
Organization(s): Institute for Population Health
Health conditions/outcomes addressed: Lead and heavy metal exposure, respiratory health and air quality, property values/socioeconomic mobility, safety from crime, physical activity, risk of fire, mental health, neighborhood perception, social cohesion
Recommendations: This HIA recommended further community engagement and advocacy in future demolition projects, controlled methods of demolition that prioritize community health such as use of the wet-wet demolition method, monitoring the use of these methods, and further analysis of impacted communities.

HIAs OF PROJECTS
<i>North Aurora Regional Recreation Center HIA</i>
Location: Aurora, Colorado
Topic: Community Services; Secondary Topic: Siting
Decision level: Regional
Organization(s): Stapleton Foundation’s “be well initiative,” Northwest Aurora Partners
Health conditions/outcomes addressed: Obesity and weight-related diseases, safety from crime, timely and safe access to recreation center by walking/biking/bus/car, economic and service inequities, physical activity, social connections
Recommendations: Increasing both physical activity and access to the proposed recreation center through biking and walking were key recommendations. This rapid HIA prioritized the need to reduce crime and fear of crime, reduce negative health outcomes, create job opportunities, implement plans and policies that support biking and walking as modes of transportation, and improve neighborhood cohesion, aesthetics, and safety.
<i>Health Impact Assessment: Fort DuPont Master Planning and Feasibility Analysis</i>
Location: Delaware City, Delaware
Topic: Land Use; Secondary Topic: Mixed Use Development
Decision level: Local
Organization(s): Environment and Policy Committee of Delaware’s Coalition for Healthy Eating and Active Living
Health conditions/outcomes addressed: Recreation and physical activity, safety from crime and motor vehicle crashes, nutrition, public transit to access jobs/services/amenities, chronic diseases, aging, primary care and child care, wellness, preventative care
Recommendations: Recommendations in this rapid HIA included ensuring mixed use development is promoted by local policies and plans, creating a walking/bicycling streetscape design, increasing pedestrian safety and recreational facilities, ensuring access to healthy food through grocery stores and local food options, extending bus service for access, increasing availability of health care practitioners in surrounding areas, establishing sites for walk-in health care with transit to the facilities, and promoting wellness opportunities.
<i>Strategic Health Impact Assessment on Wind Energy Development in Oregon</i>
Location: Oregon (state)
Topic: Environmental; Secondary Topic: Alternative Energy
Decision level: State
Organization(s): Oregon Health Authority Public Health Division
Health conditions/outcomes addressed: Noise issues (sleep disturbance, annoyance, decreased cognitive performance, mental health, physical health), air pollution and quality, disease and premature death, socioeconomic effects, community conflict
Recommendations: This comprehensive HIA recommended that Oregon evaluate noise and visual effects of wind turbines and implement strategies that limit these effects. Further recommendations included consulting with local neighborhoods and communities surrounding wind turbine sites to educate the public on potential risks and benefits. The report also emphasized addressing resident concerns and advocating for changes to minimize acute and chronic stress experienced by community members as a result of wind turbines.

Takeaways from the review of 27 HIAs

The synthesized findings and recommendations from the 27 HIAs reveal commonalities in types of data used, indicators, and the substance of HIA report content.

1. HIAs employ publicly available data, as well as specialized, local data, in a variety of combinations. Generally, HIAs use the following sources:
 - Peer-reviewed journal articles
 - Government reports
 - Nongovernmental organization research and publications
 - Data clearinghouses
2. The indicators used in the 27 HIAs included some readily available metrics for health and planning, along with tailored, context-specific indicators.
 - Population indicator examples:
 - **Demographic:** race and ethnicity, age, educational attainment
 - **Economic:** income, unemployment, proportion of jobs paying a livable wage
 - Health indicator examples:
 - **Health behaviors:** alcohol consumption, physical activity
 - **Health status:** food insecurity, obesity rate, asthma, low birth weight, mental health status
 - Planning indicator examples:
 - **Housing:** housing tenure, housing cost burden, length of residency
 - **Environmental:** Tree canopy, total impervious surface area
 - **Access and equity:** proximity of parks, proximity to goods and services, fast food establishments within one-half mile of schools
 - **Transportation:** average vehicle miles traveled, transportation mode split, crash rates
 - **Water:** reliance on bottled water, septic tank management
3. The HIA recommendations frequently included suggestions for planning and public health departments, as well as other organizations and community partners, indicating the importance of multipronged, multisectoral solutions for health improvements.
 - The recommendation strategies in the HIAs reflect the 14 primary planning topics identified in Appendix 1. Accordingly, the greatest number of recommendations addressed land use, development regulations, transportation, infrastructure, community services, and the environment.
 - HIA reports are static documents that do not reflect updates since publication. Future research could evaluate the extent to which communities adopted and implemented HIA recommendations.

4: ANALYSIS AND CONCLUSIONS

The increase in completed planning HIAs from 2004 to 2014 demonstrates the interest in bringing health considerations into the field of planning. The wide range of HIAs shows how many ways health intersects with planning. The result has been a series of collaborations involving planners, health professionals, community members, and a host of other representatives and experts coming together on a set of HIAs as varied as the planning profession. Key findings from the research on HIA and planning demonstrate that HIA has helped prepare practitioners to more systematically include health in plan, policy, and project development. Here are some key takeaways:

HIA and planning share best practices and core values

HIA offers a systematic approach to understand the health impacts of proposed policies, programs, and projects, and approximately one-third of the HIAs in the United States have been conducted on planning questions. Like planning, HIA uses a variety of methods to iteratively assess existing conditions, envision possible future scenarios, and develop recommendations that correspond with the data and needs and desires of a community.

Process and methods

HIA's dedication to process as well as outcomes reflects best practices in planning: Scoping flows into assessment, the development of recommendations begins in assessment and continues to be refined, and reporting is ongoing throughout the HIA process. The result is a cohesive report laying out key issues, potential impacts, and straightforward recommendations for action—whether they are amended plans or policies or changes to a project. HIA and planning both value the use of data from a variety of sources to inform decision making and to establish priorities. Quantitative data, as well as data derived from community engagement and other qualitative methods, are integral to both fields.

Quantitative data

Both planning and HIA employ publicly available sources of data, and they can incorporate primary data collection to integrate context-specific data. However, HIA and planning do more than present descriptive statistics; often, HIAs use data in novel ways to answer complex research questions. For example, the Baltimore rezoning HIA parsed data to better understand how many residents would be exposed to active living zoning features—such as mixed use development, pedestrian-oriented facilities, and lighting, as well as negative features like liquor stores—and how those features and exposures would be distributed among high- and low-poverty neighborhoods.

Community engagement and qualitative data

Community engagement is an active process to build permanent relationships with residents and diverse stakeholders, and in the process, listen to their experiences and perspectives. Such efforts are led with a focus on equity and the potential impacts on vulnerable populations. As with planning processes, it is important to schedule these events to ensure that there is adequate time to incorporate residents' input into final recommendations that can be implemented.

In Minneapolis, the city performed an HIA of the Above the Falls Master Plan, which was drafted to guide redevelopment in an industrial area. The HIA team assembled a representative advisory council, participated in dozens of community events and gave presentations, and facilitated culturally specific events for youth, African Americans, and Latino and Lao communities. Additionally, using surveys and comment cards (available in English and Spanish), the HIA team collected input from almost 1,000 people through the various venues. Using this robust stakeholder input in combination with findings from a literature review, the HIA presented tailored recommendations to strengthen the master plan's implementation, such as programming and activities in the redeveloped riverfront area that engage key groups including youth, people of color, and people with limited English proficiency. As demonstrated in the Above the Falls HIA, community engagement that is dynamic, respectful, and trust-building results in valid qualitative data that enhances HIA recommendations and leads to healthier communities.

HIA illustrates connections between health and planning

The HIA process relies on integrating transdisciplinary data, such as socioeconomic data from the U.S. Census and health data from BRFSS, and using technologies like GIS to analyze and communicate the data. Across the 134 HIAs analyzed here, HIA served as a mechanism for connecting and translating built environment data with health data. For example, the HIA of the Michigan Street Corridor Plan in Grand Rapids, Michigan, established connections between corridor redevelopment and three priority health indicators. The plan elements of pedestrian- and bike-friendly design, tree canopy, and vehicle pollutants were linked with three priority health indicators: overweight and obesity, personal injury, and asthma and heat-related illnesses. The HIA uncovered multiple health benefits of a single plan element. For example, pedestrian- and bicycle-friendly streets have co-benefits, such as facilitating greater physical activity, which can reduce the risk of obesity. Having more pedestrians and cyclists on the road can shift norms and attitudes, which in turn improves safety and reduces the risk of crashes with motorists.

In addition, HIA links planning and health through other related issues such as economic development and anchor institutions, as addressed in several HIAs reviewed. Specifically, the Kane County HIA (see Appendix 3: Case Studies) analyzed the economic

impact of improving access to healthy food and preserving county farmland. In another case study, the Healthy Neighborhoods Equity Fund in Boston integrated health and planning into their large-scale financial investments in projects like transit-oriented development. As large land developers, anchor institutions such as hospitals and universities are often major employment and innovation centers in communities. The University of Southern California and Piedmont Hospital are two examples of anchor institutions that conducted HIAs, recognizing the far-reaching impact of land-use decisions and bidding policies. Other HIAs focused on jobs, as employment and poverty are directly related to health.

HIA catalyzes and fosters cross-sector collaboration

The research shows that the HIA process includes multiple sectors and collaborators, and yet the steps of the HIA take different forms depending on local context. Like any other area in which HIA has been used, a context-sensitive approach is critical for planning HIAs—and perhaps more so, given the inherent place-based nature of planning initiatives. Whether it is the nature of planning HIAs or all HIAs in any sector, the research indicates that HIAs catalyze cross-sector collaboration, sometimes even increasing intergovernmental coordination. In Oklahoma City, performing the planOKC HIA of the draft comprehensive plan formalized a collaborative structure between city agencies (see Appendix 3: Case Studies). As illustrated, the initial collaboration that arises from conducting the HIA can build capacity for future partnership and lead to sustained synergistic efforts between planning and public health.

Each HIA, particularly those highlighted in the case studies, has implications for understanding how health is improved or harmed by a particular planning decision. These HIAs show that health is a composite product of multiple, compounding factors, such as income, transportation access, and health insurance status. Accordingly, many elements of planning have the potential to impact health. As evidence, all of the HIAs reviewed feature recommendations about transportation and/or land use, regardless of whether the plan or policy examined these planning topics. Such recommendations highlight the importance of land-use patterns and mobility as key social determinants of health.

Finally, HIA applies systems thinking, and uncovers the interdependencies between sectors. In Columbia, Missouri, an HIA assessed the potential impact of a utility fee that would fund the transit service to expand operations and redesign routes. This HIA examined the dilemma of assessing a fee from essentially all community members (e.g., those who pay for utilities)—which places an inequitable burden on the lowest-income workers—while also designing a public transportation system that better supports the community. It considered housing, transportation, food security, mental health, health care access, and safety, which all have implications for health outcomes. Addressing these system interactions requires a new level of strategic, interdisciplinary collaboration and coordination.

HIA is evolving

As the base of generalizable HIA evidence grows, there are new opportunities for HIA practitioners to dedicate resources to engaging with communities and assessing particular facets of planning issues. Recommendations for plans, policies, and projects that support walking and biking, promote access to healthy foods and beverages, increase access to health care and social services, and address safety and quality of life concerns for disadvantaged populations constitute a majority of recommendations in the HIAs reviewed here. By making such recommendations again and again, the field of HIA has developed a set of guidelines for healthy communities supported by data and scientific evidence.

While the 134 planning HIAs establish a considerable foundation of knowledge, the field of HIA is also developing in new directions. Many HIAs are structured with a “twin approach” lens to consider health impacts on a whole community, while also prioritizing social equity considerations for the most vulnerable populations. HIAs on regional plans, financial investing platforms, and other nontraditional topics represent innovative ways to assess the health impacts of complex plans, policies, and projects. As technology advances and laws change, there will be new opportunities to use HIA to assess the health and equity implications. For example, the decriminalization and legalization of marijuana might present opportunities for researchers to build on existing HIAs of liquor stores and tailor the research to the health impacts of marijuana dispensaries. Recent HIAs are addressing topics such as criminal justice and gentrification. Planners can also reference completed HIAs in their work, using the content and HIA recommendations to incorporate health into the planning process. The availability of HIA reports allows for the systematic consideration of health from the beginning of the planning process, even in communities that are unable to conduct HIAs. Thus, a Health in All Policies approach is a direct outgrowth of the application, success, and consistency of HIA, and represents a systems approach for including health in plan, policy, and project development. As communities adopt Health in All Policies, HIA might take a more prominent role as a tool to support this approach, and in other places, planners might continue to adapt HIA to suit the needs of their communities.

CONCLUSION

HIAs have enabled planners to connect with the public health field and better leverage their profession's impact on community health, and also helped health professionals understand the potential for planning to serve as an upstream health intervention. As communities complete HIAs, some are also adopting other approaches, such as Health in All Policies, to integrate health, planning, and other fields. Other communities are adapting HIA and using checklists or other alternative models to assess health impacts of plans, policies, and projects.

As the use of HIA spreads, practitioners in the field are generating useful content in the recommendations, monitoring, and evaluation results. Future researchers should consider reviewing process evaluations of HIAs and analyzing data captured through monitoring and surveillance programs to find out, for example, to what extent communities adopted and implemented HIA recommendations. In this relatively new field, it is also important to conduct outcome evaluations to measure the effectiveness of HIA in improving community health outcomes. While it is difficult to infer causation, there might be common health trends in communities that have used HIA, or other correlations that could help refine the evolving field.

Yet not all communities or regions have conducted HIAs due to funding and resource constraints, as well as differences in community readiness. Most communities that have conducted HIAs have been supported by grant funding from the Health Impact Project, the Robert Wood Johnson Foundation, the California Endowment, and the Centers for Disease Control and Prevention's (CDC) Healthy Community Design Initiative. The CDC's program is no longer offering funding for HIAs, which demonstrates another barrier for those communities still seeking funding. Just as evaluating the effects of HIA is important for the field, creating sustainable funding streams will be vital for expanding and diversifying the map of completed HIAs. In addition to dedicated funding, enabling policies and regulatory mechanisms might influence the number and location of completed HIAs.

As the U.S. faces increasingly complex and interrelated chronic and infectious health conditions, HIA is a tool to instigate interdisciplinary conversations leading to solutions that improve health. Planners are in a unique position to facilitate this critical systems change, and have the opportunity to bring HIA into any part of the planning process, from visioning and goal setting to implementation through projects and regulations.

As both plan makers and community development leaders, the role of planners to bring health to the forefront of community planning includes the following strategies:

- Bring new stakeholders into the planning process and incorporate health and equity into community visioning.
- Engage community members in prioritization of health objectives.
- Integrate health data into scenario development.
- Leverage a systems perspective to determine overlapping health and equity goals across systems and agencies.
- Share resources and staff time to develop and implement plans, policies, and projects.

These action steps are not exhaustive, and themselves include a number of necessary tasks. Still, through its methodology and inclusion, HIA has set the stage for a more complete integration of health into planning that make such steps possible, and with it, lasting community change.



Appendices

APPENDIX 1. METHODOLOGY

This section describes the process APA used to conduct the research for The State of Health Impact Assessment in Planning, and the methodology APA followed in each of the following five steps:

1. Establishing a Definition of Planning
2. Identifying Health Impact Assessments
3. Summarizing the “Big Picture”
4. Conducting the Literature Review
5. Conducting the Case Study Analysis

Step 1: Establishing a definition of planning

First, PCH needed to develop a concise definition of planning for the purposes of this project. After consultations with the Health Impact Project and APA’s Research Department, the team defined planning in the following terms:

Planning is the plans, policies, and actions that govern how the built environment impacts an entire population in a specified geographic area.

To expand upon this definition, plans, policies, and actions are defined as follows:

- **Plan:** an official document that sets goals, identifies objectives, and establishes policies that guide future development in a specified geographic area.
- **Policy:** an operational process or rule necessary for achieving the goals and objectives set forth in the governing plan.
- **Project:** an action undertaken to implement a plan or policy.

Step 2: Identifying planning HIAs

With a definition of planning established, PCH began the process of identifying the set of HIAs conducted on a planning issue. In order to narrow the scope of HIAs to be reviewed, the team purposely omitted HIAs that examined transportation infrastructure—such as road design—and housing-specific plans, policies, or actions. The Health Impact Project recently collaborated with the National Center for Healthy Housing and National Housing Conference on a project examining HIAs on housing decisions (National Center for Healthy Housing and National Housing Conference 2016). Additionally, a review of transportation-related HIAs was recently published in Transportation Research Record (Dannenberg et al. 2014).

The project team identified the planning HIAs through a thorough search of two databases of HIAs conducted in the United States:

- The Health Impact Project: <http://www.pewtrusts.org/en/multimedia/data-visualizations/2015/hia-map>
- UCLA HIA Clearinghouse: <http://www.hiaguide.org>

Additionally, the team asked those within APA and the Health Impact Project’s networks to identify any HIAs missing from the initial database search. The final list included a total of 134 planning HIAs.

Step 3: Summarizing the big picture

PCH analyzed the master list of 134 planning HIAs by the following attributes:

- Location: specific geographic area of the proposed plan, policy, or action
- Decision type: plan, policy, and/or action
- Planning topic:
 - Land Use

- Comprehensive Plan
- Development Regulations
- Transportation
- Alcohol and Food
- Public Finance
- Environment
- Regional
- Mitigation
- Housing
- Growth Management
- Community Services
- Climate Change
- Infrastructure
- Secondary planning topic (if applicable)
- Decision level: city, county, regional, state, federal
- Source: how the team identified the HIA
- Year completed

This information was identified by reading the executive summaries or short descriptions of each HIA and drove the summary analysis in Section 2.

Step 4: Conducting the literature review

PCH selected a subset of the 134 planning HIAs for further study in order to learn more about the HIAs' process, evidence base, findings, and recommendations. The team chose this subset through the following procedures:

1. The team selected one HIA for each planning topic, except housing, transportation, and growth management.
 - a. HIAs in housing, transportation, and growth management were omitted due their inclusion in existing or forthcoming reports.
 - b. The team deliberately chose to oversample HIAs conducted on planning topics APA sees as increasing in importance, such as Development Regulations, Infrastructure, Public Finance, Regional Planning, and Climate Change.
2. To narrow the scope, the team included only HIAs completed 2004–2014.
3. The team selected HIAs with a diverse geographic spread.
 - a. While the West Coast of the United States is disproportionately represented in the master list, the team chose a subset that is more evenly spread geographically.
4. The team selected HIAs with complete and available information.
 - a. The team chose HIAs where the report and any necessary information were accessible and identifiable.
 - b. Additionally, the team deliberately excluded HIAs, such as the Atlanta Beltline HIA, that have been analyzed in other reports.

With these procedures in place, the team narrowed the master list from 134 to 27 for further analysis. In this review, the team examined the following data fields:

- Health issues addressed
- Number of health indicators
- Stakeholders
- Partners and collaborators
- Cost of the HIA (if available)
- Number of data sources
- Length of time to complete (if available)

- Stakeholder engagement methods
- Recommendations (*Note: Recommendations were collected both in the form of the original language provided in the HIA's Recommendations section, and categorized according to a set of synthesized recommendations across each of the 28 HIAs reviewed.*)

The information yielded from these data fields allowed the team to identify areas of commonality and areas of difference in methodology, topics, and outcomes across a subset of planning HIAs.

Step 5: Conducting the case study analysis

From the subset of 27, the project team chose five for case study research. This step of the research process allowed APA to learn the ins and outs of the HIA process and draw conclusions for conducting planning HIAs. Case studies were chosen that represented diverse regions of the United States, decision levels, and planning topics. Table 1 on page 8 identifies the HIAs chosen for case study research.

The team interviewed an author of each HIA and asked a series of questions in these areas:

- Decision to conduct the HIA
- Stakeholders
- Funding
- Authors (e.g., their educational and professional background)
- Data sources and methods
- Lessons learned

The team shared the questions with the interviewees prior to the phone interviews and followed up on an as-needed basis. Taken all together, this methodology allowed APA to assess the current state of HIAs in planning and develop the findings presented in this report.

APPENDIX 2. INTRODUCTION TO IN-DEPTH CASE STUDIES

To supplement the summary analysis and literature review and delve deeper into understanding planning HIAs, APA chose five HIAs for case study analysis. These case studies examine how planning HIAs differ and the approaches taken by practitioners, and highlight lessons learned that can be applied in future planning HIAs. Each HIA represents a different planning topic, decision level, and region of the country. Together, these case studies show how each planning HIA is unique and how the field of planning HIAs has evolved over time.

The case studies, their decision level, and planning topic are:

Growing for Kane Health Impact Assessment

- Year Conducted: 2013
- Decision Level: County
- Planning Topic: Alcohol and Food

Health Impact Assessment of Atlanta Regional Plan 2040

- Year Conducted: 2012
- Decision Level: Regional
- Planning Topic: Regional Planning

planokc Comprehensive Plan Health Impact Assessment

- Year Conducted: 2014
- Decision Level: Local
- Planning Topic: Comprehensive Plan

Los Angeles and Long Beach Maritime Port HIA Scope

- Year Conducted: 2010
- Decision Level: Federal
- Planning Topic: Land Use and Transportation

Transit-Oriented Development and Health: A Health Impact Assessment to Inform the Healthy Neighborhood Equity Fund

- Year Conducted: 2013
- Decision Level: Regional
- Planning Topic: Land Use and Public Finance

APPENDIX 3. CASE STUDIES

GROWING FOR KANE HEALTH IMPACT ASSESSMENT

Value of HIA to planning: Key takeaways from Growing for Kane

HIA can strengthen existing collaborative networks.

HIA analysis can uncover strategies for engaging decision makers.

HIA can spark innovation and advance healthier public policies.

Background

Kane County, Illinois, a large county that borders Chicago and its suburbs, has a mix of urban and rural environments within its borders. In the years leading up to 2001, growth trends and population growth amplified development pressure on the county's rural areas. Recognizing the need to permanently protect its rich farmland, in 2001 Kane County became the first county in Illinois to adopt a farmland protection ordinance, the Kane County Agricultural Conservation and Easement Farmland Protection Program. With financial support from the U.S. Department of Agriculture and local sources, Kane County has actively preserved farmland using purchase of development rights, fee-simple purchases, and a donated easement program. As of April 2016, there were 30 participating farms.

In 2011, the county considered revising the ordinance in light of the past decade of continued development pressure and the 2008 recession. As of the 2007 Agricultural Census, Kane County had 192,372 acres of farmland, and only 1,180 acres in vegetable production. The proposed amendment was designed to appeal to smaller farms that produce fruits, vegetables, and meats and typically sell locally in the program. This would thereby increase total Kane County acres dedicated to food production, diversify food crop acres, and increase access to fresh produce locally.

The timing of this proposed amendment coincided with a countywide "Quality of Kane" initiative to become the healthiest county in Illinois by 2030. This presented an opportune time to conduct an HIA on how a new or amended ordinance could best improve the health of Kane County residents. The Kane County Development and Community Services Department (KDCSD), in collaboration with the Kane County Health Department (KCHD), obtained a \$125,000 grant from the Health Impact Project to conduct a comprehensive HIA. Co-led by the executive planner responsible for the farmland preservation program and the health planner at KCHD, this HIA analyzed how local government policy could improve access to healthy, affordable food, and offered recommendations for protecting and promoting public health through the amendment.

Table 1. List of HIA Stakeholders

Stakeholder	Sector Represented
City of Elgin	Municipal Planning
Chicago Metropolitan Agency for Planning	Regional Planning
Commodity and Small Specialty Growers	Local Farms
Kane County Division of Transportation	Transportation
Kane County Development and Community Services Department	Land Use
Northern Illinois University Nutrition Professor	Higher Education
Kane County Farm Bureau	Agriculture
Kane County Office of Community Reinvestment	Housing
Kane County Health Department	Public Health

Scoping

The HIA team used the grant to conduct a comprehensive HIA. The initial scoping phase began with an HIA training session for key stakeholders (see Table 1 for a list of stakeholders). Then, the HIA team gathered and analyzed economic data, which framed access to healthy, affordable food as an economic issue. The HIA team then solicited feedback on the draft research scope through in-depth interviews and a survey.

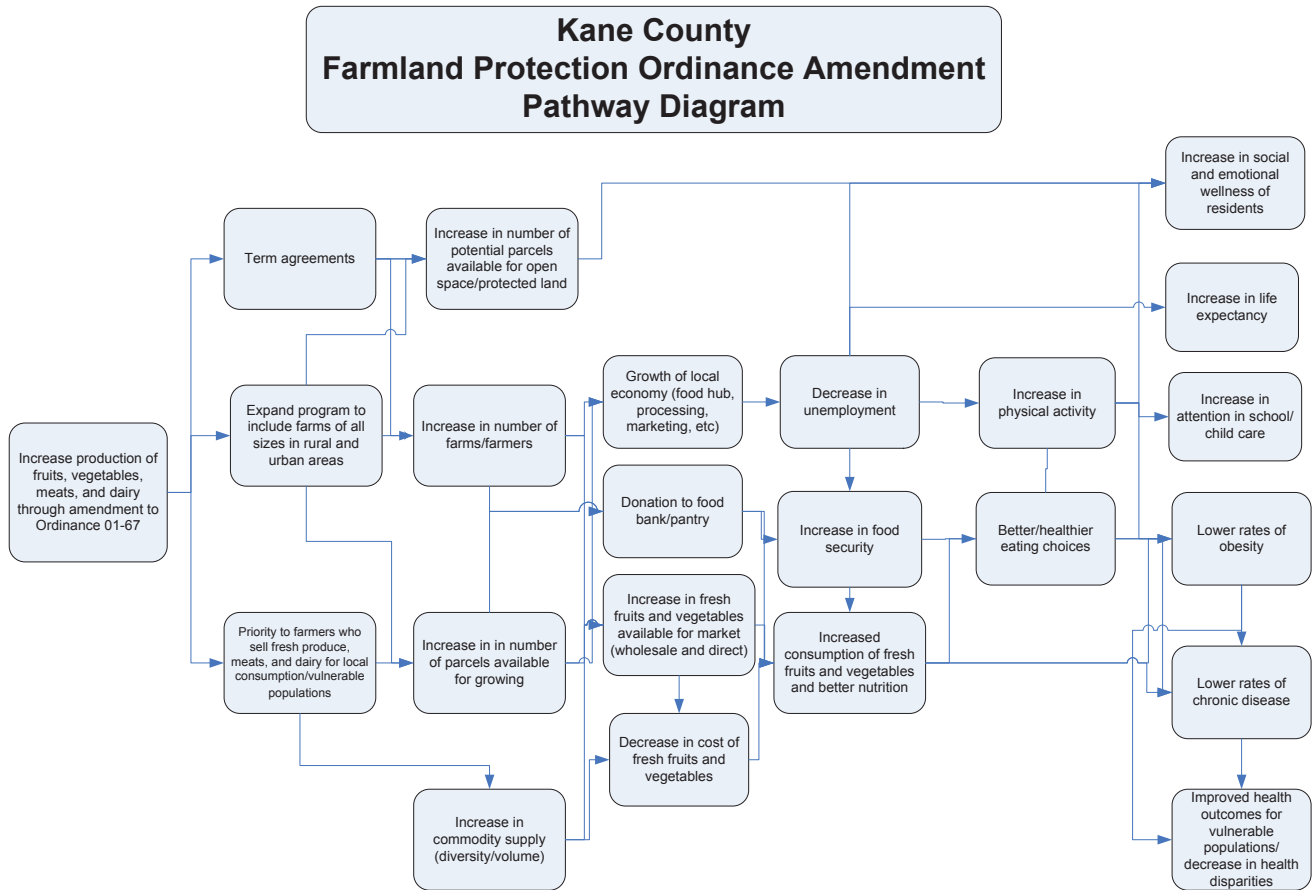


Figure 1: Kane County Farmland Protection Ordinance Pathway Diagram. (Credit: Growing for Kane HIA.)

The HIA team began with a research scope that would broadly assess the impacts of the proposed amendment, and the scoping phase refined the research focus to four aspects of the amended farmland protection ordinance:

1. Economic impacts
2. Production of local foods for human consumption
3. Use of term agreements, or specific time frames, for agricultural conservation easements
4. Inclusion of farms of all sizes in all areas of the county

To logically represent the potential connections between the proposed amendment and health that would be addressed through the research questions, the HIA team produced a pathway diagram connecting fruit, vegetable, meat, and dairy production to social well-being, life expectancy, children’s attentiveness in school, obesity, chronic disease, and health disparities (see Figure 1).

Assessment

The HIA's assessment leveraged KCHD's 2011–2012 Community Health Assessment, a collaborative project of KCHD, five hospitals, United Way, and a mental health board. The HIA team used the health assessment's demographic information and other baseline data to identify the county's most vulnerable populations. The HIA team also gathered additional data through surveys and a literature review, and organized the findings by the four research categories.

Production of local foods for human consumption

At the time of the HIA, the Farmland Protection program only protected land used to grow commodity crops. However, commodity crop producers sell most of their crops outside of the county, and a large portion is not grown for human consumption. The Kane County producer survey found that most local producers sell their crops within the county through on-site sales, markets, and business-to-business transactions.

Accordingly, the HIA identified an opportunity to support the local economy and community health by using the farmland protection program to support local food producers (in addition to commodity growers), which would in turn increase the amount of locally grown, nutritious food available to residents. Residents then purchase local produce, and the money returns to local farmers, keeping more dollars in the local economy.

Inclusion of farms of all sizes in all areas

The HIA's literature review revealed that small- and medium-sized farms mostly serve local and regional consumers. These farms create local jobs, attract new businesses through an economic multiplier, and increase nearby property values. A change in the ordinance to protect farms of all sizes could improve local food production.

Use of term agreements

At the time of the HIA, Kane County used perpetual easements as a method for conserving farmland, but did not include short-term, flexible easement options for farmers. An easement is a voluntary, legal agreement between a landowner and a land trust or government agency (like Kane County) that removes development rights in exchange for tax benefits. Perpetual easements run with the land, meaning that the easement is permanent, and remains binding even with new ownership. The HIA team examined barriers to local farmer participation in the farmland preservation program, and concluded that short-term easement options could increase participation. As more farmers participate, there will be greater assurance that ample farmland will be available to meet the produce needs of the local population.

Economic analysis

The HIA team's economic analysis started with a basic supply and demand equation, supported by stakeholder input. The majority of crops grown in the region are shipped out of the state. As such, food consumed within the region is imported from other regions and states. The lack of local food supply in Illinois drives up food prices, exacerbating food insecurity. If the county's farmers make slight shifts to increase local food production and distribute much of it for local consumption, more dollars would circulate locally. The result could have a multiplier effect, increasing overall consumer spending, benefiting jobs, the economy, and quality of life. T

The HIA team hired the American Farmland Trust to assess the impact of an increase in local food production. The analysis found that the county's demand for fruits and vegetables could be met by growing fruits and vegetables on 2,496 acres, which would induce economic activity through retail sales of the agricultural products, as well as indirectly through creating jobs and labor income. The analysis also included a "real-world" scenario that assumes Kane County producers would sell regionally (e.g., throughout the populous Chicago metropolitan area).

Recommendations

The HIA's overarching recommendation was to create a new complementary ordinance to the Farmland Protection Ordinance, rather than amending it. This decision responds to the community's worry that expanding and changing the program's scope might endanger the Farmland Protection Program's dedicated funding streams. So the HIA team recommended developing a distinct local food and farm ordinance. As a "sister" to the Farmland Protection Ordinance, the new "Growing for Kane" Ordinance could support innovative local agriculture, economic, health, and food security initiatives to achieve the county's health goals.

Additional recommendations included:

- **Production of local foods for human consumption.** In addition to providing details for the new Food and Farm Ordinance, the HIA recommended additional policies, such as procurement procedures incentivizing local food production. For example, the HIA recommended establishing a farm-to-school program.
- **Inclusion of farms of all sizes in all areas.** The HIA suggested provisions for technical assistance, financial incentives related to fresh produce, meat, and dairy production, and outreach to vulnerable and underserved communities in the county. The proposed new ordinance would apply to all farms of all sizes, including urban farms. Lastly, the HIA recommended further study of a Food Hub, a place to aggregate, package, certify, and distribute local food products.
- **Use of term agreements.** The HIA's recommendations included several changes to the implementation of the existing ordinance, including: a county land leasing program, an incubator program for beginning farmers, and the creation of an inventory of public land available for local food production. Additionally, the HIA recommended further exploration of term easements in the Farmland Preservation program.
- **Economic analysis.** The HIA recommended that the county create an agricultural economic development authority or hire a specialist to connect farmers with necessary financing or business infrastructure. As a less-preferred alternative, the HIA report suggested that the existing programs place additional focus on financial and technical assistance.

Reporting

Because the primary authors of the Growing for Kane HIA were city employees, they rolled HIA reporting into formal meeting procedures for the Farmland Preservation program, KCDCSD, and KCHD. This included updating the Agriculture Committee (a committee of the Kane County Board), the Kane County Board of Health, and other associated committees on HIA progress and final recommendations. Additionally, the HIA team presented at a Farm Bureau meeting and a Northern Illinois Food Bank convening to reach other stakeholders.

Monitoring and evaluation

The HIA included a list of indicators for use in ongoing monitoring and evaluation efforts. This list also identifies data sources, the party responsible for monitoring, how frequently the data should be updated, and the length of the monitoring period. The Agriculture Committee of the county board and staff from KCHD and KCDCSD are key collaborators in the monitoring plan.

Kane County contracted with Northern Illinois University to conduct both a process evaluation and an impact evaluation of the HIA. The evaluator used a variety of methods: content analysis of written program documents, testimonials of program effects from key participants and stakeholders, focus groups, key informant interviews, direct observation of project activities and events, and questionnaire-based surveys. The HIA evaluation concluded that Kane County conducted a high-quality HIA, and met its goals of assessing various health aspects of agricultural policy. The completion of the HIA directly facilitated the adoption of a new Farm and Food Ordinance.

Updates since completion

In August 2013, the Kane County Board adopted Resolution #13-240, officially establishing the recommended "sister" ordinance to the Farmland Protection Program. The new ordinance is called the Growing for Kane program. The HIA's findings informed the ordinance, resolution, and program development.

The Growing for Kane HIA catalyzed other healthy planning projects. In 2015, Kane County received a Plan4Health grant from the American Planning Association to implement long-range plans that address physical inactivity and unhealthy diets. One of the key Plan4Health-funded activities is Phase Two of a Food Hub Feasibility Study, which was a recommendation in the HIA. Additional grant funds are designated for implementing other improvements to the farmland preservation program. These grant funds have created new jobs within the county, including planning staff) working on food systems issues.

Value added to planning

HIA can strengthen existing collaborative networks

The Growing for Kane HIA exemplifies how conducting an HIA provides a mechanism for enhancing existing cross-sector collaborations, as demonstrated by the county's strengthened network of coalitions and initiatives. The HIA amplified the existing relationship between the HIA's authors, leading to an increase in staffing and securing additional grant funding.

According to the interviewees, the HIA process allowed for extensive interdepartmental coordination on an unprecedented level. This strong interdisciplinary connection occurred with the support of the county government. The administrators of the planning and health departments allowed the HIA authors significant flexibility to pursue and develop the HIA. The authors identified this as a lesson—organizations need to be flexible and nimble to enable a comprehensive HIA process—and reinforced that communication is the other necessary component for cross-sector collaboration.

HIA can uncover strategies for engaging decision makers

Kane County's HIA team discovered that framing the HIA messaging around the economic benefits and the financial impact of local food production secured buy-in from decision makers. The stakeholder meetings, research, and subsequent economic analysis established the economic case for a strong local food system. This message resonated with decision makers and paved the way for Kane County to establish a new Farm and Food Ordinance. Healthy communities are important for many reasons, and framing the issue in a way that resonates with key stakeholder groups can activate new partners and ensure greater buy-in from the community.

HIA can spark innovation and advance healthier public policies

As demonstrated by Kane County's implementation of the HIA recommendation to establish a new food system ordinance, the community was prepared to comprehensively address the complex local food system. Rather than recommending improvements to the farmland preservation program, the HIA recommended a new program to serve as a companion to the county's agricultural land protection. The research and community engagement undertaken as part of the HIA indicated that there are many ways to boost local food production, and Kane County was ready and eager to incorporate innovative measures. The Growing for Kane Ordinance can be a model for other communities interested in innovating on food systems policy, urban agriculture ordinances, and urban forest ordinances.

Resources

Kane County HIA: <http://kanehealth.com/hia.htm>

Growing for Kane Ordinance: http://www.foodandfarmaskc.org/?page_id=118

Thank you to Janice Hill, AICP, of Kane County Development and Community Services Department, and Jackie Forbes, of Kane County Division of Transportation (formerly with the Kane County Health Department during the HIA), for participating in interviews for this case study.

ATLANTA REGIONAL PLAN 2040 HIA

Value of HIA to planning: Key takeaways from the HIA of Atlanta Regional Plan 2040

HIA can facilitate the coordination of projects and plans across agencies and jurisdictional scales.

HIA provides a “check” or mechanism for achieving consistency between plans.

HIA can strengthen communication between government agencies and nongovernmental organizations, which is critical to building sustainable coalitions.

Background

The Atlanta metropolitan region is a growing megaregion in the southeastern United States, comprised of a 10-county region and the city of Atlanta. The Atlanta Regional Commission (ARC) serves as the regional planning agency and the metropolitan planning organization (MPO) for Atlanta area counties.

At the start of 2010, ARC began the planning process for the *Atlanta Regional Plan 2040 (Plan 2040)* that would serve as a regional land-use plan and as the MPO’s Long-Range Transportation Plan (LRTP). The LRTP is required for all agencies that receive federal transportation dollars. Georgia Tech’s Center for Quality Growth and Regional Development (CQGRD) conducted an HIA on *Plan2040*, the first HIA in the United States to analyze a regional plan and one of the few regional plan HIAs in the country. The HIA was funded by the Health Impact Project, a collaboration of the Robert Wood Johnson Foundation and The Pew Charitable Trusts. The HIA catalyzed formal relationships between ARC and CQGRD, as demonstrated by HIA team members from CQGRD joining ARC committees and work groups. The *Plan2040* HIA helped planners in the region increase cross-communication, enhance consistency in planning, and coordinate across agencies and jurisdictional scales. The HIA advanced discussion of how the Atlanta region can be a more viable, healthy, and productive place throughout the 21st century.

About the Atlanta Regional Plan 2040

With a long planning horizon and a wide geographic area, *Plan 2040* contains several parts—a framework; regional assessment; regional resource plan; unified growth policy map; implementation standards, partners, and program; and a regional transportation plan. It was the first regional plan for Atlanta in nearly 30 years and the first time the federally-mandated LRTP and the unmandated regional land-use plan were integrated. As the LRTP, the regional plan had to meet certain federal requirements, such as an assessment of existing conditions, a traffic forecast, a financing element, and a six-year priority Transportation Improvement Plan. In addition to transportation, the regional plan also includes a comprehensive Regional Development Plan to guide coordinated regional growth. *Plan 2040* also serves as a blueprint for community development, economic development, and environmental planning in the region.

Screening

After the plan’s draft release, *Plan 2040* stakeholders—including the ARC, CQGRD, and the general public—expressed an interest in conducting an HIA to better understand how regional planning and health intersect. Stakeholders saw this as an opportunity to conduct the first HIA on a regional plan, build on the Beltline HIA conducted by CQGRD,¹ and provide guidance for making the Atlanta region a healthier place.

Scoping

The team began by identifying the region’s demographic and health characteristics. The HIA team expanded upon the health profiles in the Beltline HIA by including the whole region and updating with current demographic and health data.

By 2040, the Atlanta region’s population will be significantly older—those over 65 will have doubled in number. Most people with disabilities will live in exurban areas. These two statistics are key considerations for a regional plan that seeks to improve individual and

¹ In 2007, CQGRD released the Atlanta Beltline HIA (Ross 2007). This report analyzed the potential health impacts of the proposed Beltline project. At build-out, the Beltline will include 33 miles of new multiuse trails connecting 40 parks, as well as 22 miles of transit service with an anticipated daily ridership of more than 73,000 people.

Table 1. HIA Topics in Analysis

Healthy Planning Concepts		
Transportation	Mode Share	Share of travel made by car, transit, walking, bicycling, carpooling, and other methods of travel
	Safety and Design	Roadway design features include speed limit and design speed for motor vehicles, number and width of general purpose lanes, presence of medians, intersection design, corner radii, signal phasing, and more
	Transit	Access to public transportation varies based on frequency, directness of trips, reliability, connectivity
	Multimodal Level of Service (LOS)	Vehicular LOS grades roadway facilities based on an ideal free-flow speed for vehicles at 45 mph. Multimodal LOS takes into account conditions for bicyclists, pedestrians, and transit movement.
	Congestion	The conditions in which traffic density causes travel speeds to decrease and result in significant delays
	Freight	The goods movement is a heavy user of roadways and other transportation facilities, including railways, maritime routes, and airways
Land Use	Centers	Clusters of mixed use and higher density development
	Mix	Mix refers to a mix of land uses and occupancy
	Parking	Parking policies and ordinances, such as minimum parking requirements
	Conservation	Unimproved land can serve as recreational space, places to preserve natural habitat, or farmland
Transportation and Land-Use Interactions	Connectivity	Density of connections (e.g., intersections) in path or road networks, and the directness of links
	Access Management	The regulation of interchanges, intersections, driveways, and median openings on a roadway
Healthy Planning Methods		
Plans	<i>Plan 2040</i> Framework	Align the plan's vision, goals, objectives, and principles to support healthy planning
	Development and Land-Use Planning	The Regional Development Guide incorporates land use and future land-use plans into a cohesive regional scheme
	Transportation Program and Project Selection	<i>Plan 2040</i> Regional Transportation Plan Performance Framework (a tool to organize and guide steps of the plan development process), and the decision-making process (funding priorities)
Programs	Livable Communities Initiative	Provides funding for investment studies and transportation projects located in activity and town centers in the regions
	Lifelong Communities Strategies and Solutions	Promotes housing and transportation options, encourages healthy lifestyles, and provides access to services and resources to accommodate the region's aging residents
	Bicycle and Pedestrian Planning	Creates safe and appealing options to walk or bicycle
	Travel Demand Management	Initiatives that shift trips away from overutilized transportation resources
	Reducing Regional Health Disparities	Ensure that benefits and risks from development, zoning, special uses, and transportation projects are distributed equitably

community health. In addition to other characteristics, the HIA team identified areas of the region with high concentrations of poverty. The analysis identified South Atlanta, Clayton County, and neighborhoods along highway corridors as the areas with the highest poverty density. Determining existing conditions and the spatial distribution of priority populations assisted the HIA team with scoping *Plan 2040's* potential health impacts.

The HIA team engaged a stakeholder advisory group, reviewed comments from the general public, and analyzed information from Plan 2040's public outreach process during the scoping phase. The group included many of the Beltline HIA stakeholders and those with expertise in Atlanta's politics, statistics, and policy issues. The HIA team analyzed the comments received through *Plan 2040*'s public meetings—more than 100 conducted during the plan's development. Additionally, the ARC formally responded to questions from the public about the plan's content, which the HIA team used to assess the health concerns of the region's residents. Using input from stakeholders, existing conditions profiles, and the extensive literature review on the science of healthy places, the HIA team decided to focus on land use and transportation, which coincide with two key elements in *Plan 2040*.

Assessment

The HIA's community engagement and stakeholder involvement processes resulted in five prioritized areas in which regional planning is likely to have a significant impact on health: 1) Safety and Security; 2) Access, Equity, and Economy; 3) Ecology and Environmental Quality; 4) Active Living; and 5) Civic Life, Social Concepts. The literature review further explored specific topics embedded in these five themes, including death and disability caused by traffic crashes and violent crime; equitable access to jobs, housing, services, and goods; and exposure to nature.

The HIA report combines the assessment findings and recommendations in two sections—Healthy Planning Concepts and Healthy Planning Methods—analyzing and offering improvements for both the content and implementation of *Plan 2040*. See Table 1 for the specific topics analyzed under both the sections.

Healthy planning concepts

Transportation

The HIA team determined that Atlanta's transportation system is dominated by vehicle thoroughfares; the current mode share is dominated by those who commute by driving alone, with far fewer people in the region carpooling, riding transit, walking, or biking to work. To reduce automobile dependency, *Plan 2040* would need to increase the region's capacity for multimodal transportation options such as in transit, bicycle, and pedestrian infrastructure. Implementation of the ARC's Complete Streets policy can assist with increasing bike and pedestrian investments. The HIA notes that planning for transit infrastructure is determined by federal and state funding and their priorities, which limits ARC's ability to plan autonomously. *Plan 2040* allocates 16 percent of its transportation dollars to transit, which further designates less than half of that funding to the transit expansion needed to meet the region's expected population. The HIA deemed this too low and suggested that coordinating projects with ARC's Livable Communities Initiative and Metropolitan Atlanta Rapid Transportation Authority presents an opportunity for leveraging funds to increase capacity.

The HIA team also assessed *Plan 2040*'s impact of congestion on the environment. The HIA found that *Plan 2040* would not reduce existing congestion and might even increase Vehicles Miles Traveled, which the HIA found would negatively impact air quality, safety, and physical activity. The HIA also identified *Plan 2040*'s freight routes as including environmentally sensitive areas or locations marked for future development and found that this has the potential to do environmental harm and increase human exposure to pollutants.

Land use

The HIA team divided the land use assessment into four areas: Centers, Mix, Parking, and Conservation. *Plan 2040* uses ARC's Livable Communities Initiative to identify these centers, but their physical development occurs outside the ARC's authority. Despite this, the HIA team concluded that these centers will likely create healthier places in the Atlanta region. Currently, the Atlanta region separates different land uses, as a result of traditional zoning, and *Plan 2040* calls for more connectivity and mix of land uses. The HIA notes this improvement but acknowledges that further efforts are needed to ensure more affordable housing and greater variety of housing opportunities.

The *Plan 2040* HIA team incorporated parking into its land-use analysis. The HIA's literature review and rationale state that no published research existed (in 2012) directly linking parking regulations to health but several studies connect parking to land-use interventions that do impact health, such as density. The HIA team found minimal attention to parking in *Plan 2040*. Lastly, the HIA analysis found that land conservation is important for health and well-being, and that while *Plan 2040* identifies rural areas and green space, it lacks sufficient detail on land conservation efforts.

Land use-transportation interaction

Improving the connectivity of the street network to facilitate mobility requires strategic transportation and land-use decision making. The HIA assessed the plan for two integrated transportation and land-use topics: connectivity and access management. The HIA notes that *Plan 2040* emphasizes street connectivity. Access management is the package of regulations that focuses on the location, spacing, and design of traffic interchanges, intersections, driveways, and median openings on a roadway. It is a critical component of enhancing safety, traffic flow, and connectivity. As highlighted in the HIA, *Plan 2040* briefly mentions access management, but achieving connectivity goals requires greater coordination with access management plans and other transportation and land use decisions.

Healthy planning methods

As part of its assessment phase, the HIA team analyzed *Plan 2040's* Planning Framework—this is the “how” of *Plan 2040*. The Planning Framework consists of a regional assessment, peer cities assessment, implementation program, and regional resource plan. The HIA team concluded that the regional assessment phase did not adequately consider health data and suggested several additions to the regional assessment, such as considering how chronic disease and injury could endanger the region’s productivity and how limited multimodal capacity could impact the success of road and transit investments. The HIA highlights the five-year Implementation Plan for *Plan 2040* as a critical place to promote healthier strategies. For land-use implementation, the HIA recommends strategies to improve the connection between housing and regional employment corridors to equitably develop communities of opportunities.

Recommendations

The HIA included over 200 recommendations, many of which were included in the transportation, land use, and healthy planning methods sections. Because of the breadth of the recommendations, CQGRD and ARC worked closely to prioritize and refine recommendations after the publication of the HIA report.

The 33 transportation recommendations were broad reaching. The HIA team identified evidence-based recommendations connecting improved transit, bicycle, and pedestrian options to better individual and community health as the highest priority. The team recommended promoting multimodal transportation, designing streets for all users, and implementing programs that improve mobility.

The HIA team offered 25 land-use recommendations. Because *Plan 2040* is a regional land-use plan and localities control land-use regulation, the HIA recommends strategies for how ARC can influence cities’ and counties’ land-use decisions. For example, the HIA recommends that *Plan 2040* add guidance for implementing zoning ordinances that reduce parking demands and promote mixed uses and housing supply diversity.

The HIA’s land use-transportation interaction recommendations are to promote connectivity and build capacity of the existing street and transit networks throughout the region. *Plan 2040* complements local plans, where much of the transportation/land-use planning and multimodal planning is implemented. Accordingly, ARC encourages local jurisdictions to coordinate regional planning with local jurisdictions by offering the comprehensive transportation planning program. The program is voluntary for local jurisdictions, and provides federal funds, technical assistance, and facilitation support to jurisdictions to jointly develop comprehensive transportation plans with the other cities and counties in the region.

The HIA offers 62 recommendations for the Healthy Planning Methods section in addition to a Healthy Planning Framework guide. These recommendations for incorporating health into the planning process are generalizable and appropriate for all planners, particularly regional planners. Additionally, many of these recommendations relate to the performance measures in *Plan 2040*. The Moving Ahead for Progress in the 21st Century Act mandates performance measures in all federally funded transportation projects. The *Plan 2040* HIA cross-referenced the transportation performance measures with the plan’s vision and goals, concluding that the existing performance measures do not completely capture the them. The HIA provides suggested supplemental measurements that better align with the plan’s vision and goals.

Reporting

CQGRD presented its findings and recommendations to ARC and proposed continuing their partnership to implement the HIA’s recommendations. ARC’s active participation in the HIA process created new habits of communication that integrated the HIA’s reporting into their existing communication procedures.

Monitoring and evaluation

The *Plan 2040* HIA is comprehensive, but it lacks a robust monitoring and evaluation section. The HIA team said that monitoring and evaluation would be challenging, given the team's long-term staff capacity to monitor the 200 HIA recommendations. Monitoring the implementation of recommendations requires a commitment to tracking progress over time. In our interview with the HIA team, we determined that a formal evaluation did not occur, but the continued relationship between the CQGRD and the ARC has facilitated ongoing monitoring through regular communication.

Updates since completion

Following the completion of the HIA, CQGRD recognized the need to condense the 200 recommendations into a manageable subset with specific action steps. CQGRD received additional support from the Health Impact Project to prioritize the recommendations and create an action plan for ARC to implement the HIA's recommendations. Another result of the HIA follow-up project was guidance on delegating responsibility for promoting public health throughout ARC's organizational structure. The follow-up report determined several intervention opportunities, along with roles and responsibilities, prioritized HIA recommendations, and implementation steps. The resulting matrix matched recommendations with the corresponding ARC center and other relevant agencies, potential sources of funding, data sources, and data needs.

During the HIA follow-up period, ARC underwent a significant organizational restructuring. ARC is now composed of three "Centers" (Community Services, Livable Communities, and Strategic Relationships), replacing the prior structure of four divisions. Staff roles and responsibilities have also changed. According to the interviewees, this reorganization affected implementation of the HIA's recommendations, as some recommendations tasked specific ARC divisions (Aging Services, Environmental Planning, Land Use) with implementation actions. Each of the three new centers now has a role in supporting healthy regional planning, but the change meant that the HIA recommendations could not be adopted in their original form because they were not aligned with the current structure of ARC.

In February 2016, the ARC board approved the *Regions Plan*, which replaces *Plan 2040*, and "healthy livable communities" is a guiding vision for many supporting goals and objectives. This new regional plan integrates the strategic priorities of all the legal designations of the ARC—the MPO, the Area Agency on Aging, the Atlanta Regional Workforce Development board, the Metropolitan Area Planning and Development Commission, and the Metropolitan North Georgia Water Planning District.

Value added to planning

The complexity of regional planning is highlighted in the lessons and implications of the HIA. One interviewee stated that throughout the HIA process, the team constantly had to "connect all the dots." The intricacy of the interactions between land use, transportation, and public health highlights the importance of removing barriers to sharing data and responsibility for making health-related decisions at all levels of government.

HIA catalyzes cross-agency coordination

Plan 2040 is an integrated transportation and land-use plan and the HIA's findings add to our understanding of how these two planning topics separately and together impact our ability to live a healthy lifestyle. The HIA indirectly highlights the difficulty of making integrated transportation and land-use decisions. Many transportation decisions occur at the regional level, bringing together many county and municipal jurisdictions, which have land-use authority.

The HIA team faced significant challenges in completing the HIA. The team had to learn how to integrate planning frameworks with and without mandates for an agency that had some decision-making authority (especially for transportation), but covers a multijurisdictional area. Many of the land-use decisions that create more compact, walkable places are not made at the regional level. Most of the HIA's recommendations fall outside of the ARC's mandate. Additionally, HIAs are not mandated but the LRTP of *Plan 2040* had federal mandates to consider. With this idea of mandates in mind, the HIA team knew the final product had to show the ARC, stakeholders, and the general public an impactful and relevant document for all involved. Lastly, the HIA process reinforced the degree to which HIAs must be context-specific; what worked for the Beltline HIA did not always work for the *Plan 2040* HIA.

HIA promotes plan consistency

The HIA revealed discrepancies between *Plan 2040*'s purported vision and goals, and the actionable steps and strategies for regional growth. While the HIA focused on health impacts of land-use and transportation planning, careful research indicated that the implementation plan and performance measures would not facilitate a healthier Atlanta region and would not facilitate monitoring changes in the health status of the region. Creating the first integrated land-use and transportation plan for the Atlanta region is ambitious. The HIA served as a consistency check, and led to a more cohesive and viable plan.

HIA can foster cross-sector communication

The *Plan 2040* HIA communicated the importance of health as a key outcome of planning decisions. Accordingly, health is a primary consideration in the ARC's new plan, the *Regions Plan*, which connects aging, transportation, land-use planning, and workforce development. The *Plan 2040* HIA was a factor in shaping the early, predevelopment discussion of how the *Regions Plan* can improve community health.

Resources

HIA: http://www.cqgrd.gatech.edu/sites/files/cqgrd/files/FINAL_SUBMITTAL_PEW_Plan2040_HIA_12132012.pdf

Plan 2040: <http://www.atlantaregional.com/plan2040>

Atlanta Regional Commission: <http://www.atlantaregional.com>

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PLANOKC COMPREHENSIVE PLAN HEALTH IMPACT ASSESSMENT

Value of HIA to planning: Key takeaways from *planokc*

HIA can foster effective, sustainable cross-sector collaboration to promote more integrated decision making across professional fields.

HIA can enable planners to communicate with the public about comprehensive planning in a new way, with multiple audiences.

Background

Comprehensive plans formally establish the goals, policies, and strategies necessary for achieving a community's vision. Oklahoma City's planning commission and the city council adopted *planokc*, its new comprehensive plan, in July 2015. The *planokc* HIA analyzed how individual and community health would be affected by each of three growth scenarios in the plan. The HIA process began three years into the comprehensive planning process, and was an outgrowth of growing interest in improving public health in Oklahoma City.

Mayor Mick Cornett, has been a champion for health since 2008, when he challenged city residents to collectively lose one million pounds. As part of the mayor's "This City is Going on a Diet" campaign, the city also made investments in sidewalks, trails, parks, and recreational facilities (Urban Land Institute 2013). In 2011, the Oklahoma City County Health Department (OCCHD) received funding from the Centers for Disease Control and Prevention (CDC)'s Community Transformation Grant (CTG) program to improve active living and healthy eating opportunities. The OCCHD allocated \$30,000 of the CTG funds to the Oklahoma City Planning Department to hire a trained planner specializing in health issues. This staff member became the lead on the *planokc* HIA. After the CTG funding ended in 2014, the city has continued to support the position through the general fund. The success of the partnership between planning and public health in Oklahoma City created the foundation for the *planokc* HIA.

About *planokc*

The first plan since 2000, *planokc* provides policy makers, business leaders, developers, and residents with the strategies and tools necessary for making Oklahoma City a "dynamic community in modern America" (*planokc* 2015). The plan development process began in 2010, and through significant community engagement and federal funding, multiple studies were conducted to inform *planokc*'s content. In total, seven studies assisted with *planokc*'s development: a community appearance survey, a retail plan, an employment land needs assessment and action plan, a parks master plan, a housing market study, a growth scenario analysis, and an HIA. The complementary studies led to an implementable plan for Oklahoma City to achieve its vision. The comprehensive plan features eight elements: *sustainokc* (land use), *connectokc* (transportation), *greenokc* (environment and natural resources), *liveokc* (communities), *enrichokc* (preservation, appearance, culture), *playokc* (parks and recreation), *strengthenokc* (economic development), and *serveokc* (public services).

Table 1. *planokc* Scenarios

Scenario ID	Scenario Name	Scenario Description
Scenario A	Trends	Assumes continuation of current development trends
Scenario B	Trends + Market + Efficiency	Focuses growth in new, continuous developments around nodes and corridors, with moderate transit improvements and little infill development
Scenario C	Market + Efficiency + Revitalization	Focuses on its efficient distribution of public services and the land patterns encouraging infill development and transit-oriented development

Screening and scoping

The *planokc* team formed a Healthy Communities Oversight Group as part of the community engagement process. Many of the stakeholders in the group had previously worked together in the Oklahoma Health Equity Campaign and are involved in the city's Wellness Now coalition.

Table 2. HIA Indicators and Potential Health Impacts of Growth Scenarios

Indicator Description	Scenario A Impact	Scenario B Impact	Scenario C Impact
sustainokc - Land Use			
Land use mix	↓	↑	↑↑
Regularity impacts to walkability	↓	—	↑
connectokc - Transportation			
Reduction in Annual Vehicle Miles traveled (VMT)	Total	↓↓↓	↓↓↓
	per capita	↓	↑
Time available for non-commute activities	—	↑	↑
Usage of transit, cycling, and walking for routine trips	↓	↑	↑
Streets access to transit, bike, and pedestrian facilities	↓	↓	—
Cyclist and pedestrian safety	↓	—	↑
Income available for non-transportation expenditures	↓	↑	↑↑
greenokc - Environment & Natural Resources			
Proportion of land with potential for farming use	↓↓↓	↓↓	↓
Proportion of land converted from pervious to impervious surface	↓↓	↓	↓
Air quality	↓↓↓	↓↓	↓
Surface and groundwater quality	↓↓	↓	—
Average residential energy efficiency	↓	—	↑
Preservation of dark skies (light pollution)	↓	↓	↓
Quiet environment (noise pollution)	↓	—	↑
Residential uses buffered from oil or gas wells and/or industrial uses	↓	↓	↓
liveokc - Communities			
Proportion of population with easy access to schools	↓	↓	↓
Residential density (net-residential parcels only)	↓↓	↓	↑
Proportion of population with easy access to healthy groceries	↓	—	↑
Social inclusion of vulnerable populations	↓↓	↓	↑
Proportion of population with easy access to healthcare facilities	↓	↓	↑
enrichokc - Preservation, Appearance, & Culture			
Redevelopment potential for abandoned buildings	↓↓	↓	↑
Proportion of population with easy access to cultural elements	↓↓	↓	—
playokc - Parks & Recreation			
Proportion of population with easy access to public parks	↓↓	↓	—
Proportion of population with easy access to private parks	↓	—	↑
Proportion of population with easy access to the trails network	↓	—	↑
strengthenokc - Economic Development			
Proportion of jobs paying a living wage	↓	↓	↑
Housing affordability by household income bracket	↓	↓	↓
Homelessness	↓	—	↑
serveokc- Public Services			
Police and fire service efficiency by zip code	—	↑	↑
Safety from DUI incidents	↓↓	↓	—
Public utility efficiency (water, sewer, solid waste)	↓	↑	↑↑

The planning department engaged in a scenario planning process to assist the city and its residents with identifying which growth strategy best fits the community's vision (see Table 1). This process yielded three growth strategies, each assuming the same population and job growth. These scenarios visually depicted the development patterns necessary for accommodating Oklahoma City's expected increase in residents. The HIA analyzed the impacts that these differing development patterns would have on individual and community health.

The HIA team generated an initial list of 57 metrics that could serve as appropriate, representative measurements of planning-related outcomes in Oklahoma City. The stakeholder group narrowed the list to 35 indicators, and assessed how much and in what direction each indicator would change in each of the three growth scenarios. The HIA team excluded indicators related to lighting due to insufficient quantitative data and domestic violence indicators because there was a lack of a clear correlation with development patterns. The final list of 35 indicators are grouped by *planokc* element in the report (see Table 2).

Assessment

The HIA team conducted a literature review to identify the linkages between each indicator and health-related behaviors or outcomes. With the rationale established for analyzing each indicator, the HIA team gathered quantitative data to assess how each scenario could affect the indicator in question. The HIA team also established the baseline conditions for each indicator in Oklahoma City. For example, Indicator C.6 (Proportion of Average Income Spent on Transportation) showed that the average household in the city spends nearly 30 percent of its income on transportation. An analysis of all of the transportation-related indicators demonstrated that Scenario C is most likely to lead to the greatest reduction in per-capita Vehicle Miles Traveled and decreased general reliance on motor vehicles. Scenario C promotes more compact land patterns through mixed use development; infrastructure connectivity; and improved pedestrian, bicycle, and transit infrastructure. In addition to creating efficiencies for city services, Scenario C would lead to better health outcomes for residents (see Table 2).

Recommendations

In total, the HIA contains 38 policy recommendations organized by the eight *planokc* elements, along with detailed implementation strategies (refer to the *planokc* HIA for more detail). Recommendations include creating more opportunities for walking and biking, increasing connectivity of parks and trails, reducing gang violence, and increasing level of service to the homeless. For each recommendation, the HIA lists strategies for accomplishing these goals. For example, the HIA identifies nine specific recommendations for the *planokc* element *greenokc* to do more to improve health. Of the nine *greenokc* recommendations, one is to improve air quality. To achieve this goal in the plan, the HIA follows with specific strategies. For improving air quality, these include establishing special development and building standards for projects built close to highways, limiting heavy duty trucks during rush hour, and creating a tree planting program that establishes barriers between industry, transportation corridors, and residential uses.

Reporting

Because the planning department conducted the HIA, it was able to integrate updates on the HIA process, findings, and recommendations into its regular communication procedures. For example, the HIA team presented to the planning commission and city council as part of the *planokc* development process, which included workshops, open houses, focus groups, presentations, and many other activities to reach 20,000 people in the city. This period of interactive, innovative outreach presented opportunities for the HIA team to reach the public, and provided ample regularly scheduled meeting times with advisory group and oversight groups to connect with specific stakeholders. According to our interviewee, the continual involvement cultivated buy-in from *planokc* officials and also ensured that the *planokc* writers were not surprised by the HIA findings and recommendations. Finally, the HIA and other studies were included as an appendix item in the plan, demonstrating Oklahoma City's commitment to community health and to transparency.

Monitoring and evaluation

planokc's goals, strategies, and policies are closely aligned with Scenario C, which the HIA identified as the best option for improving community health. The planning department is monitoring the comprehensive plan implementation. The *planokc* website includes a section with information about "Implementation Progress," which includes quantitative indicators, the relevant *planokc* goals the indicator addresses, current conditions, five-year targets, and 10-year targets. Several of the indicators are similar to the indicators used in the HIA, such as easy access to parks and access to cultural elements. The "Policies & Implementation" page includes all plan elements, policies, and indicates whether the policy is "in progress" or has already been implemented.

Updates since completion

The planning department continues to integrate health into its planning work. The author of the HIA transitioned from a grant-funded position to a general fund position, focusing on active transportation. Partners continue to work together as part of the city's Wellness Now coalition.

In direct response to two HIA recommendations— to conduct annual assessments of the quality of all public parks and ensure parks are multiuse destinations by collectively deciding what will make the space a destination —the planning department and the parks and recreation department created a Park Assessment Tool. The city uses the tool to assess and evaluate existing parks for insights into potential infrastructure investments.

At the time of the interview, the planning department, the Association of Central Oklahoma Governments, and the University of Oklahoma's College of Public Health were also assessing how traffic conditions and freight movements affect the region's air quality.

Value added to planning

HIA fosters and strengthens collaboration

The *planokc* HIA demonstrates how an HIA can foster cross-sector collaboration and catalyze integrating health into planning. While many of the HIA stakeholders had a previous history of working together (recently with the CTG project in 2011) the HIA funder and authors did not.

The *planokc* HIA was the first planning HIA conducted in Oklahoma and the first one done by the HIA team at the planning department. In an interview with the lead author, he explained that conducting an HIA is a fairly intuitive process. At the same time, the process provided an opportunity for public health professionals to learn more about the impacts of planning decisions and enabled the planning department to build relationships with other health-focused institutions and organizations in addition to the OCCHD. The planning department engaged the University of Oklahoma's College of Public Health and one of its graduate students contributed to the HIA as part of her practicum. The *planokc* HIA strengthened emerging relationships between the planning and health sectors, helping to build a collaborative that continues to develop and expand to include other partners, such as the metropolitan planning organization and the university.

HIA can provide fresh approach to communication and public engagement

The planning department used the HIA process and findings as one of many techniques to engage the public in the comprehensive planning process. Comprehensive plans establish long-range policy direction for land use, transportation, economic development, housing, public services, and natural and cultural resources that align with the community's vision and priorities for development. These exhaustive, inclusive documents are challenging to summarize quickly. According to the interviewee, the *planokc* HIA enabled the planning department to explain comprehensive and scenario planning in plain language to multiple audiences. The HIA identified how each scenario would specifically impact health, according to the eight *planokc* elements. The HIA provided a fresh perspective for understanding the impacts of comprehensive planning, as well as a systematic way for explaining comprehensive planning.

Resources

planokc 2015: <https://www.okc.gov/AgendaPub/cache/2/ww0loh45oby3hvzr0nlkqmqj/302597803012016122704961.PDF>

planokc HIA: http://planokc.org/wp-content/uploads/2015/07/HIA_OklahomaCity_planokc.pdf

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Urban Land Institute. 2013. *Intersections: health and the built environment*. Available at <http://uli.org/wp-content/uploads/ULI-Documents/Intersections-Health-and-the-Built-Environment.pdf>

Thank you to John Tankard of the Oklahoma City Planning Department for participating in an interview for this case study.

LOS ANGELES AND LONG BEACH MARITIME PORT HIA SCOPE

Key takeaways

HIA can help clarify the connections between health and economic growth.

Establishing and using clear, agreed-upon definitions is critical.

HIA's use of data-driven and community-engaged practices can push controversial conversations forward

Background

Safe and efficient infrastructure is critical for transporting the large items and consumer goods we use every day in the United States. The country's seaports serve as a gateway for freight and are often economic drivers in their metropolitan regions. Freight refers to the movement of goods—the act of transporting a consumer product from its manufacturing location to final destination. For this case study, the terms freight and goods movement are used interchangeably. The growing demand for consumer goods is a result of a strengthening economy, new global markets, and changing trends in goods production and trade, such as the increasing demand for rapid delivery of goods (USDOT 2016). The goods movement as an industry is adapting to accommodate the growth. The Panama Canal Expansion Project is a milestone that will have major implications for ports in the United States, as supertankers and extra-large container ships that travel through the Panama Canal require deeper harbors, higher bridges, and other renovated infrastructure at the ports (Rosen 2015).

As the nation's freight network responds to the growing global trade volumes, the U.S. Environmental Protection Agency (EPA) decided that it would be important to better understand the health impacts of freight transportation. In 2010, EPA hired Human Impact Partners (HIP) to develop an HIA Model Scope that could be adapted to any port expansion projects, using the Ports of Los Angeles and Long Beach as the prototypes.

These separate but adjacent seaport facilities comprise the country's largest port complex; ranking first in the United States in both cargo tonnage and containers transported through the complex. The ports and their associated industries represent a significant sector of the Los Angeles region's economy. Trade accounts for more than a quarter million jobs in Los Angeles County. Accordingly, the anticipated environmental, economic, and societal impacts of these transportation facilities are significant.

The ports' infrastructure includes warehouse facilities, roads, bridges, and railways. These spaces host port activities, such as transporting containers from ships to the trucks and railcars that depart for destinations across the country. As a result, neighborhoods immediately surrounding the ports are affected by the ports' operations, due to the proximity to the freeways and railway lines that serve them. However, it can be challenging to establish an agreed-upon definition of the geographic boundaries of the extent of the ports' impact. Because of the global nature of trade and goods movement, the full extent of the impact of ports' decisions might also be deemed regional, national, or global.

In 2010, the EPA's Region 9 Office, which oversees the Pacific Southwest, including the ports, suggested that the ports consider including an HIA as part of an Environmental Impact Assessment (EIA) process for a particular expansion project. Although the National Environmental Policy Act (NEPA) and the California State Environmental Quality Act call for consideration of human health effects as part of EIAs, HIAs are not routinely practiced.

Using the HIA process to inform hypothetical projects

Typically, HIAs are conducted on a proposed plan, policy, or project action. In this case, the Ports HIA Model Scope reviewed the health concerns associated with general port activities and operations, rather than a specific project or policy change. HIP developed the model HIA scope that the ports (and other ports around the country) could tailor to specific plans or projects for completing comprehensive HIAs. The hypothetical approach reduced the number of HIA steps the team followed, culminating in a model HIA scope. The "scope" is typically the second of six steps of an HIA and involves identifying the research questions that the study will seek to answer.

Screening

The ports and the multiple agencies that coordinate port activities have a complicated history that has resulted in tenuous relationships. Issues related to air quality and environmental justice have contributed to some friction between the ports and the EPA, which oversees the environmental review process for all port projects and operations. In the past, project proponents have expressed concern about the additional time and expense that result from completing the required environmental review.

The EPA hoped to incorporate new health considerations into the environmental process for the ports, but the key stakeholders did not agree on the need for an HIA. As an alternative, the best nonregulatory approach appeared to be the development of a scope or guide for future projects, policies, or actions that could build shared understanding. The ports agreed to participate, which enabled all key parties involved to engage in the HIA process.

Scoping

The HIA team conducted a literature review and stakeholder outreach to inform the model scope. The HIA team developed a set of parameters, research questions and guidance, and pathways for eight health determinants (see Table 1). The result is a model scope that HIA practitioners can use when developing an actual scope for an HIA of a specific freight decision.

Table 1. Eight Health Determinants	
Environmental	
Air quality	How will the proposed project’s construction, operations, and related activities change air pollution? How will the resulting air quality affect asthma and respiratory diseases, cardiovascular diseases, lung cancer, pre-term and low-birthweight births, and premature deaths?
Noise levels	How will the proposed project’s construction, operations, and related activities (such as trucks and trains) change levels of noise pollution? How will the resulting noise exposure affect stress, hypertension, blood pressure, heart disease? How will the noise affect children’s learning ability due to sleep disturbance and related consequences?
Water quality	How will the proposed project and associated stormwater runoff change levels of water pollution? How will the project impact exposure to polluted water?
Social	
Neighborhood livability	How will the proposed project impact the availability of goods and services, such as health clinics, child care, schools, and parks? How will the project impact environmental hazards, the local economy, property values, social networks, and crime rates? How will these changes impact health outcomes?
Displacement	How will port projects and activities affect the displacement of residents, businesses, and community resources? How will the projected displacement affect physical and mental health, and other determinants of health?
Traffic and rail	How will the proposed project impact traffic safety for pedestrians, bicyclists, and drivers, and how will the project change expected travel times? How will the predicted changes affect levels of stress, physical activity, traffic collisions, and emergency response times?
Economic	
Economic effects	How will the proposed project impact the number and type of jobs (and job-training activities) offered by the ports, and how will unemployment levels change? How will the proposed project impact goods and services available? How will these changes impact lifespan and chronic and communicable disease prevalence?
Port revenue and port funding	How will the proposed project impact tax revenues and port-related fees, and how will this money impact neighborhood infrastructure, projects, and programs? How will this spending affect health outcomes?

Through the literature review, the HIA team found that changes in each of these health determinants can directly and indirectly lead to changes in health outcomes. The research showed that the facilities could worsen certain health outcomes (through exposure to air pollution, for example), and could improve health for example by increasing economic opportunity, which could in turn improve educational outcomes and reduce stress. The research also found that not all neighborhoods or communities will experience the same mix of positive and negative health impacts. As a model scope, the Ports HIA did not use local data to measure and project impacts in the ports’ vicinity. However, the HIA team identified possible data sources that practitioners can use in future HIAs. See Table 2 for a list of recommended data sources, tailored for HIAs focused on freight.

Environmental Impact Statements	Departments of city planning
Environmental Impact Reports	Office of Economic Development
State and local health agencies	Tax parcel records
California Air Resources Board	City, county, state comptroller's offices
CalTrans and other transportation agencies, organizations, or groups	City government
Land-use agencies	Bureau of Labor Statistics
State highway patrol	Hospital data and records
Local fire departments	Toxic Release Inventory data
Chambers of Commerce	U.S. Census
Department of Education	

Stakeholder review

With such pathways illustrated, the EPA and HIP organized a stakeholder meeting in February 2010 to share and gather feedback on the literature review and pathway diagrams, which are visual depictions of the relationships between a particular health determinant (e.g., economic security) and potential health outcomes. These meetings built on the EPA's and the ports' prior experience working with many of the over 50 participants who represented community groups, industry groups, and other agencies. Based on the written feedback gathered during this session and follow-up conference calls, HIP revised the scope and released the document for public comment.

A sampling of the comments received (paraphrased) include:

- The research and recommendations in the HIA could conflict with guidance from other federal agencies.
- A project-based HIA should consider regional contributors to air pollution, in addition to pollution generated by port activities.
- Light pollution, impacts from natural disasters, non-port communities, education, equity, and mobility impacts should be added to the HIA scope.

Updates since completion

In March 2016, a California Superior Court judge ruled that the environmental impact report on the intermodal rail yard was inadequate, requiring the ports to conduct a "more robust and accurate analysis" of the impacts. The legal challenges include underestimating air pollution, noise impacts, and the impact of the project on further growth in the area (Mongelluzzo 2016). As of publication time of this case study, the ports and BNSF Railway are studying the decision and discussing next steps.

Though the ports did not decide to complete the six steps of the HIA, HIP and other organizations have conducted additional work to better understand how freight impacts health. For example, HIP completed an HIA on the I-710 Expansion HIA in Los Angeles, and also evaluated the health impacts of the Port Container Fee policy in Oakland.

Value to planning HIA field and beyond

HIA can help clarify the connections between health and economic growth

By creating the HIA Model Scope, the HIA team conducted research on the freight-health connection. This research systematically and succinctly illustrates the system of factors originating from the ports that influence health. The HIA found that increased port capacity will add jobs, though this community benefit would occur in conjunction with consequences of economic growth such as increased emissions.

Establishing and using clear, agreed-upon definitions is critical

The interviewees stated that stakeholders disagreed on the geographic boundaries of the ports' area of impact. Clearly establishing the geographic boundaries of the ports, and connecting them to existing jurisdictions or to data availability—while acknowledging the limitations of those definitions—might result in more effective HIAs. The neighborhoods immediately surrounding the ports (and those areas identified through the Clean Air Action Plan) are part of the geographic area of impact. The ports' size and trade volume have a

regional and potentially global impact. Conducting the HIA and completing the pathways led stakeholders to ask a new set of questions about the boundaries of the HIA—which populations and places should be included in an HIA of the ports?

HIA can move controversial conversations forward

The Ports HIA Model Scope gives planners, HIA practitioners, advocates, and others a roadmap for understanding how freight affects the health of area residents and the community as a whole. There is still significant work to be done to bring stakeholders together to reach consensus about how to create thriving seaports that not only serve as a vital economic link, but also minimize human health impacts. HIP and the EPA have given the planning and policy fields a place to start, which is crucial for engaging in challenging conversations. An HIA or mini-HIA can catalyze conversations and move controversial discussions forward. The HIA Model Scope responded to common questions and concerns from businesses and developers about HIAs, and specifically addressed how to integrate HIA into the parallel, federally mandated EIA process. Analyzing human health impacts is required through NEPA and other regulations, so using HIA is a method to comprehensively assess significant direct and indirect public health impacts.

Despite the success in raising awareness about HIA and health, and the freight-health connection, the Ports HIA Model Scope did not persuade the ports to conduct a HIA. The interviewees believe that developing the model scope made HIA more tangible for key stakeholders. The model scope increased awareness of the various health impacts associated with goods movement in the Los Angeles metropolitan region. However, to date, the ports have not expressed plans for completing an HIA. Many of the lessons of the Ports HIA are related to limitations created by developing an HIA scope on a hypothetical project instead of an actual plan, policy, or project action. The interviewees believe that the development of the model scope made HIA more tangible. Furthermore, completing an HIA might have led to a more robust environmental impact report that would not have led to the court ruling that halted the project in March 2016.

Resources

HIA Report: <http://www.pewtrusts.org/en/~media/assets/external-sites/health-impact-project/portoflaandlongbeach.pdf>

Port of Los Angeles: <https://www.portoflosangeles.org>

Port of Long Beach: <http://www.polb.com>

Human Impact Partners: <http://www.humanimpact.org>

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Available at <http://www.joc.com/rail-intermodal/class-i-railroads/bnsf-railway/judge-orders-review-bnsfs-social-intermodal-transfer-yard-20160330.html>.

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Thank you to Marnie Purciel-Hill and Jonathan Heller of Human Impact Partners for participating in interviews for this case study.

TRANSIT-ORIENTED DEVELOPMENT AND HEALTH: A HEALTH IMPACT ASSESSMENT TO INFORM THE HEALTHY NEIGHBORHOOD EQUITY FUND

Value of HIA to planning: Key takeaways from Healthy Neighborhood Equity Fund

HIA brings a data lens to understanding the equity considerations of planning and development decisions.

HIA can shape institutional processes such as community engagement, providing unintended benefits.

HIA can influence future projects to use data-driven, health-focused decision making.

Background

In 2013, the Metropolitan Area Planning Council (MAPC) in Boston conducted a rapid HIA to assess the health impacts of a new private equity fund called the Healthy Neighborhood Equity Fund (HNEF). At the time of the HIA, the HNEF was not yet capitalized and still developing a strategy for evaluating potential investment opportunities. The HIA directly informed the HNEF's scoring criteria for projects.

Today, the HNEF is a \$30 million private equity fund with a mission to invest in the building blocks of healthy communities in Massachusetts. Managed by the Conservation Law Foundation (CLF) and the Massachusetts Housing Investment Corporation (MHIC), it prioritizes projects that bring lasting benefits to communities, such as real estate development projects that increase walkability. The HIA identified the health impacts of three proposed transit-oriented development (TOD) projects. TOD projects are high-density and mixed use developments clustered within a half-mile of a transit stop that facilitate multimodal mobility. This HIA also provided credible data to inform the scoring criteria for the community, environmental, and economic impacts of the HNEF's investment decision making.

The HNEF managers describe the fund as a provider of "patient capital for catalytic residential, commercial, and mixed-use projects and helping to leverage other sources of private and public financing." The HNEF provides seed funding for TOD projects, enabling developers to secure additional financing. Impact investing is an emerging sector that uses patient, or long-term, capital investments, leveraging a blend of funds from the private sector, foundations, and the government. Impact investors base their investment decisions on the financial returns of projects, but also factor community, environmental, and health impacts into the decision.

In 2011, Massachusetts Department of Public Health (MDPH) received a grant from the Centers for Disease Control and Prevention's (CDC) Healthy Community Design Initiative to conduct nine HIAs over the course of three years. MDPH had working relationships with several regional planning agencies and expressed interest in distributing funds to these agencies. MAPC, the regional planning agency for 101 cities and towns within the Boston metropolitan area, approached MDPH about conducting the HNEF HIA to better understand the health impacts of TOD projects and how the innovative financing program could improve its scoring criteria to reflect health impacts.

This rapid HIA had two goals—to understand the health impacts of TOD and then use that research to create a decision-making guide for a healthy neighborhood investment fund. CLF and MHIC used the HIA as a tool for informed decision making, focused on 12 TOD-specific determinants that affect health. The HNEF HIA provides a framework for making decisions that facilitate the creation of walkable places with access to jobs, transportation, and community services.

Scoping

To begin the scoping process, MAPC identified three TOD projects in Boston that were aligned with the types of projects that CLF and MHIC would likely fund through the HNEF. The selected TOD projects—Bartlett Place, Madison Tropical Parcel 10, and Parcel 25—had already been proposed and were in varying stages of the project development process. They served as relevant case studies. Using current proposed local projects allowed MAPC to develop and test health metrics for TOD that the HNEF managers could use for making investment decisions.

- **Bartlett Place:** This proposed mixed use development in the Roxbury area comprises 54,000 square feet of commercial and retail space, 323 residential units (with designated affordable, senior, and market rate units), and a 15,000-plus square feet of community gathering public space. It aims to earn the U.S. Green Building Council's Leadership in Energy and Environmental Design-Neighborhood Development (LEED-ND) certification.

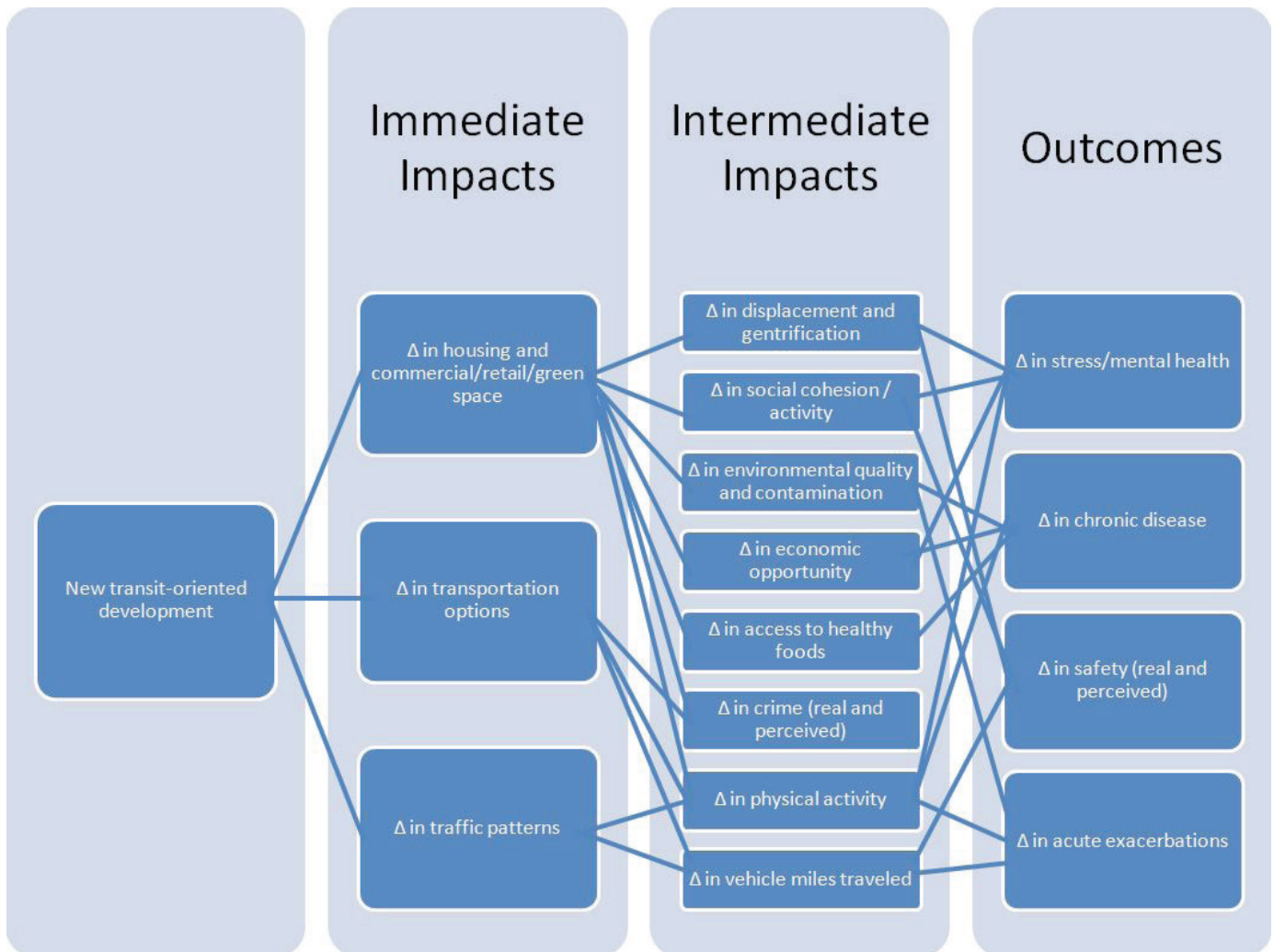


Figure 1. TOD and Health Pathway Diagram (Δ = change) (Source: MAPC, *Transit-Oriented Development and Health: A Health Impact Assessment to Inform the Healthy Neighborhood Equity Fund*)

- **The Madison Tropical Parcel 10:** This mixed use development includes three buildings, featuring a full-service grocery store as an anchor institution, along with office, retail, and residential space. It is located three blocks from a major bus station in Roxbury.
- **Parcel 25:** Located across from the Roxbury Crossing Orange Line MBTA station, this proposed development includes 200,000 square feet of office, retail, and multipurpose space and 104 affordable housing units.

The HIA team defined the study area using a half-mile buffer around the three selected sites, and used Project Notification Forms and summary sheets to glean details about the project specifications.

Stakeholders

The HIA stakeholders included real estate developers, community development corporations, community development financial institutions, elected officials, area businesses, local residents, and representatives from the city of Boston. After an initial HIA scoping session in February 2013, the Boston Public Health Commission (BPHC) Health in all Policies (HiAP) taskforce provided additional assistance and feedback on the scope, as the BPHC had recently completed an HIA in 2012. The BPHC established the HiAP taskforce in 2012 to address health inequities through decision making across agencies and organizations and through engaging residents.

Table 1. Quantitative Data Sources	
Quantitative	Universe
Project Notification Forms	Subsidized Housing Inventory
2010 U.S. Census	HUD's Comprehensive Housing Affordability Strategy
State of Place Walkability Assessments	PadMapper
City of Boston Crime Reports	Boston Indicators Project
American Community Survey	Statewide GIS database
Boston Redevelopment Authority	InfoUSA
Boston Behavioral Risk Factor Surveillance System	Boston Regional MPO crash data
MDPH: Hospitalization and Emergency Department Data	Massachusetts Department of Environmental Protection
Environmental Public Health Tracking Network	

The scoping session and background research into the study area gave the HIA team direction to develop a pathway diagram. As illustrated in Figure 1, the stakeholders prioritized 12 determinants of health likely to be affected by the three TOD projects: Walkability/Active Transport, Safety from Crime, Economic Opportunity, Displacement/Gentrification, Affordable Housing, Green Housing, Social Cohesion, Green Space, Access to Healthy Affordable Food, Safety from Traffic, Air Quality, and Environmental Contamination.

The team expected TOD projects to lead to changes in stress and mental health, chronic disease prevalence, real and perceived safety, and chronic obstructive pulmonary disease triggers among the study area's residents.

Assessment

The HIA team used qualitative and quantitative data to examine the 12 prioritized determinants' potential impact on health. Nearly 150 sources from peer-reviewed and gray literature, including journal articles, best practices, and reports, were used to provide context linking the health determinants to TOD. Table 1 identifies the quantitative data sources used in the HIA. For each determinant, the HIA team conducted a literature review, created an existing conditions profile of the study area for that particular determinant, and analyzed and made projections using TOD project specifications along with baseline health, sociodemographic, and environmental data. The profiles of each determinant fed into a summary for how the TOD projects could affect the particular determinant. For example, the HIA team found that areas with higher population densities, access to bicycle, pedestrian, and transit infrastructure and mixed use development improve physical activity rates.

The HIA team summarized its findings in a matrix (see Table 2) listing each health determinant, the anticipated direction of the health impact (positive or negative), and the likelihood of the impact occurring. The "magnitude of impact" combines the next two columns: severity of the potential health impacts to an individual and the distribution of those impacts across a population. The last column displays the strength of evidence in the literature that links the determinant to a health impact—more plus signs denote stronger evidence.

The HIA established that, along with many positive community health benefits of TOD, gentrification is a possible negative consequence of TOD due to higher property values. The HIA used the term gentrification to describe the process of increased property values that create a financial burden on low-income households that leads to their displacement. The HIA found that the TOD study area was susceptible to displacement due to the high percentage of renters (84 per cent) and low housing values that encouraged investment by real estate developers. The HIA found that the TOD projects would increase gentrification, possibly harming low-income residents' access to necessary health and social services, but also causing appreciation of property values and increasing the financial return for those who own property within the study area. The HIA recommended promoting antidisplacement strategies, such as Community Benefits Agreements, and promoting affordable housing ordinances and policies such as inclusionary zoning.

Table 2. Summary of HIA Findings						
Health Determinant	Direction of Impact	Likelihood of Impact	Magnitude of Impact	Severity of Impact	Distribution	Strength of Evidence
Walkability/Active Transport	+	Likely	Medium	Medium	Wide	++++
Safety from Crime	+	Likely	Medium	High	Wide	++++
Economic Opportunity	+	Likely	Medium	High	Narrow (Those gaining employment)	++++
Food Access	+	Likely	High	Medium	Wide	+++
Traffic Safety	-	Likely	Medium	High	Wide	++++
Affordable Housing	+	Likely	Medium	High	Narrow (Residents of affordable housing)	++++
Green Housing	+	Likely	Low	Medium	Narrow (Residents of green housing)	+++
Green Space	+	Likely	Low	Low	Narrow (Those accessing new green space)	++
Social Cohesion	+	Likely	Low	Low	Wide	++++
Air Quality	-	Likely	Low	Low	Wide	++++
Gentrification/Displacement	-	Possible	Medium	High	Narrow (Cost burdened)	+++
Environmental Contamination	+/-	Possible	Medium	High	Narrow (Those living and working on site of remediation)	++++

Recommendations

The HIA recommended health domains, indicators, and relevant data sources for the HNEF to continue to use in evaluating potential TOD investments. The HIA also provided recommended development strategies for improving individual and community health, and mitigating adverse health consequences of new TOD development.

The HNEF’s process for evaluating projects for investment consists of a two-part neighborhood screening and project impact review process. The HIA recommended incorporating indicators for the 12 health determinants into this established screening and review process.

Lastly, the HIA recommended mitigating negative health impacts and enhancing positive health impacts, organized by determinant that could be implemented in TOD projects. For example, walkability and active transport is improved with higher density; shorter distances to transit, bicycle, and pedestrian infrastructure; and increased access to destinations and amenities. These planning techniques become public health interventions that affect physical activity, mental health, obesity rates, and chronic disease prevalence.

Reporting

The HIA report clarifies the connections between TOD and the health of the individuals living in the surrounding area, and includes a series of easy-to-interpret tables detailing the HIA’s findings and recommendations. Boston’s HiAP task force was exploring guidelines, initiatives, and tools including HIA, so MAPC shared an update on the HNEF HIA during a February 2013 task force meeting.

Monitoring

The HNEF HIA contains significant research, yielding insights into the potential health impacts of TOD and identifying metrics for guiding the HNEF’s financial investments. The CLF and MHIC developed a monitoring plan that includes economic, social, environmental, and health indicators for the funded projects and their neighborhoods. The monitoring plan uses the recommended health metrics from the HIA, which connects data from multiple sources.

Updates since completion

CLF and MHIC officially established the HNEF in early 2015. Capitalized with an initial \$30 million of private, foundation, and public-sector funds, the HNEF managers incorporated the HIA's findings into its HealthScore rating system. HealthScore assigns projects a rating from 0–100 based on neighborhood screening criteria (25 percent of the total HealthScore) and project screening criteria (75 percent of the total HealthScore). The neighborhood criteria measure the need and opportunity for healthy development and the project criteria measure how well the specific project meets the need and captures the opportunity. For example, “access to multimodal transportation” is a neighborhood-level need, and “neighborhood walkability” is a project-level contribution to meeting the need.

CLF, MAPC, and MDPH have continued their collaborative efforts, particularly around data collection for scoring and screening potential investments. MAPC is using its experience on this HIA to inform potential zoning changes around a proposed transit line extension in the Chelsea neighborhood. The 12 pathways in the HNEF HIA provided MAPC with a framework for incorporating health considerations into the zoning policy change process required for the transit expansion.

Value added to planning

Regional planning organizations well-equipped to conduct HIAs

Regional planning organizations, with comprehensive data tracking systems, are poised to conduct HIAs successfully. As the regional planning agency, MAPC has a robust internal data collection system. This strategic advantage allows the organization to efficiently produce high quality HIAs. This evidence gathering ability can inform and improve the decisions made by those at the city, county, and regional level. At the same time, the interviewee from MAPC indicated that the decision to assess 12 pathways in the HIA was ambitious, in hindsight. The HNEF HIA's 12 pathways were created through extensive use of qualitative and quantitative data. This created a larger workload than typically designated for rapid HIAs. MAPC would consider consolidating to fewer pathways in future work. Overall, regional planning organizations are well-suited to conduct HIAs.

HIA benefits future plans, policies, and projects

HIA can influence future projects to use data-driven, health-focused decision making, as demonstrated by HNEF's adoption of HIA recommendations into their scoring criteria.

Other cities, transit agencies, and developers across the country can use the evidence, findings, and recommendations in the HNEF HIA to plan equitable TOD projects. This broad look at the potential health impacts of TOD has implications for developers and investors considering how to incorporate health metrics into TOD projects. Data collection, especially at the local and micro levels, is time-consuming and expensive, and this HIA provides clear data and analysis that is transferable and generalizable.

in future research can be compared. Consistent with the desire for data-informed decision making, CLF wants to evaluate the impact of HNEF's investments on neighborhood conditions and health outcomes. As of spring 2016, a case-control research study, supported through the Robert Wood Johnson Foundation, was under way to identify directions for subsequent longitudinal research. These research efforts can lead to rigorous evidence evaluating the effectiveness of place-based strategies to increase economic opportunity and improve health outcomes.

Additional benefits to HIA teams

HIA can lead to improved institutional processes such as community engagement. MAPC incorporated lessons from its HIA into its ongoing work. MAPC determined that the scoping session in 2013 was too lengthy and that they could have spent less time on HIA training and focused more on interacting and engaging with participants. MAPC has used this lesson to refine its community engagement process for its HIA work, other regional planning projects, and community engagement consulting. Their community engagement processes prioritize strategic engagement from the very beginning of a project, and includes detailed plans to determine who is important to reach (and why) and how the team will reach them. MAPC's *Community Engagement Guide*, a publicly available document, includes suggestions for interactive ways to engage members of the public to hear their experience.

Resources

HIA: <http://www.mapc.org/hnef>

Metropolitan Area Planning Council: <http://www.mapc.org>

MAPC Community Engagement Guide: <http://www.mapc.org/clean-energy-toolkit-topic/community-engagement-guide>
Healthy Neighborhoods Equity Fund: <http://www.hnefund.org>

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