# A Health Impact Assessment Toolkit

HUMAN IMPACT PARTNERS

## A Handbook to Conducting HIA, 3rd Edition

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## Human Impact Partners

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Users are invited to send comments or suggestions on the Toolkit to info@humanimpact.org.

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This *Toolkit* is designed as a hands-on teaching guide for how to conduct health impact assessment. We hope readers will obtain an understanding of the HIA process and undertake their own HIAs. Human Impact Partners is available for and enthusiastically provides HIA training, technical assistance and mentoring to organizations interested in implementing a HIA practice. For additional training materials and information about the services we offer, please see our website – www.humanimpact.org, or contact us at info@humanimpact.org with any questions.

*A Guide for Health Impact Assessment,* authored by Rajiv Bhatia of the San Francisco Department of Public Health, provides further guidance on how to conduct HIA. For a copy of the Guide, please contact rajiv.bhatia@sfdph.org.

*Practice Standards for Health Impact Assessment (HIA),* authored by the North American HIA Practice Standards Working Group, provide practitioners with a set of benchmarks to guide HIA practice. The standards are available at http://www.humanimpact.org/capacity-building/hia-tools-and-resources/.

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# Chapter 1. Introduction to HIA

**In this chapter, you will learn:**

- The definition of "Health Impact Assessment"
- Why a HIA might be conducted
- How health is defined in HIA
- The spectrum of HIA practice in the U.S.
- The HIA process in brief
- About three HIA case studies

## 1.1 What is Health Impact Assessment?

The International Association of Impact Assessment defines Health Impact Assessment (HIA) as "a combination of procedures, methods and tools that systematically judges the potential, and sometimes unintended, effects of a policy, plan, program or project on the health of a population and the distribution of those effects within the population. HIA identifies appropriate actions to manage those effects." (Quigley, 2006).

HIA aims to make the health impacts of public decisions explicit. To do this HIA uses diverse methods and tools and engages health experts, decision-makers, and stakeholders including those with local knowledge to identify and characterize health effects resulting from a proposal and its alternatives (Quigley, 2006). HIA is concerned with harmful effects and also with the ways public decisions can be shaped to promote and improve a population's health. HIA is also explicitly concerned with vulnerable populations and includes analysis of a proposal's impacts on health inequities.

*Living a healthy life requires having adequate housing; secure and meaningful livelihood; access to schools, parks and public spaces; safety and freedom from violence; unpolluted air, soil, and water; and a society which promotes not only opportunity and innovation but also cooperation, trust, and equity.*

HIA draws upon diverse sources of knowledge including lay and professional expertise and experience. HIA also offers recommendations to decision-makers for alternatives or improvements that enhance the positive health impacts and eliminate, reduce, or mitigate the potential negative impacts of a proposed policy, project or plan.

## 1.2 Why conduct a Health Impact Assessment?

Our health depends on the quality of our physical and social environments. In 1986, the Ottawa Charter on Health Promotion identified the fundamental resources for health; it urged policy-makers in all sectors to "be aware of the health consequences of their decisions and to accept their responsibilities for health" and called for policy-makers to conduct health impact assessments of actions that influenced environmental conditions (WHO, 1986). This simple and common sense notion -- that all public decisions should consider and account for their consequences to human health -- is the fundamental premise of Health Impact Assessment (HIA). Overall, HIA can achieve the following goals in public decision-making:

**Identifying harms and benefits before decisions are made.** The primary task of a HIA is identifying and estimating the potential positive or negative health effects of a proposed policy, program, plan, or project. This includes Identifying short- and long-term effects and, in particular, effects on populations vulnerable to or experiencing health disparities.

**Identifying evidence-based strategies and recommendations to promote health and prevent disease**. The findings from a HIA can serve to motivate decision-makers to incorporate health-promoting changes to projects or policies. HIA can increase public understanding of the causes of illness and disease and can create new strategic opportunities for prevention.

**Increasing transparency in the policy decision-making process.** Good decisions require inclusive participation, consensus-building, and ample information. HIA can inform public dialogue, potentially foster collaboration and consensus-building, identify hidden assumptions, and bring new evidence into the decision-making process.

**Supporting inclusive and democratic decision-making.** HIA does not endorse or oppose a project or policy; rather, HIA's inform stakeholders and decision-makers about the health implications of a proposal. Democracy, participation, equity, and the ethical use of evidence are key values underlying HIA practice (Quigley, 2006). Using public health as a shared value, HIA can encourage cooperation among stakeholders with potentially divergent interests.

**Supporting community engagement in the decision-making processes.** HIA often provides evidence that speaks to community questions or issues. Thus, a HIA can play an important role in legitimizing community voices through the consideration and assessment of their concerns. HIA can also provide a forum for a variety of stakeholders to engage in a discussion about a project, plan, or policy, and thus be a vehicle for community empowerment.

**Advancing equity and justice.** Some policies and decisions may improve the health of a population subgroup but negatively affect the health of other subgroups. Good HIA practice

assesses the distribution of effects on vulnerable populations, and is particularly attentive to the requirements of federal and state environmental justice policies. Environmental justice is the "…fair treatment of people of all races, cultures, and incomes with respect to the development, adoption, implementation, and enforcement of environmental laws, regulations, and policies" (California Government Code §65040.12).

**Shifting decision-making from an *economic* to a *quality of life* framework.** Current decision-making frameworks are typically limited to economic costs-benefits and feasibility. Solely using an economic framework may lead to a decision made at the expense of quality of life, a lack of knowledge of externalities that may not be quantifiable economically, and an acceptance of negative effects on well-being.

**Informing a discussion of the trade-offs involved with a project or policy.** Because HIA provides a comprehensive lens to examine decisions affecting a wide range of social and environmental factors that influence health, HIA can be a useful tool to identify and examine trade-offs in decision-making, as well as identify opportunities for strategies that serve multiple aims.

**Facilitating decisions and their implementation.** Simply by informing the decision-making process and anticipating stakeholder concerns, HIA can prevent decision-making delays. Successfully negotiating a consensus can create buy-in for policy decisions and their implementation. By identifying common problems and strategies that apply to diverse interest groups, HIA can help catalyze new relationships and partnerships in order to help health-promoting policy decisions succeed.

## 1.3 Defining health in HIA

The definition of health within the context of HIA is holistic. The scope of a HIA assesses physical and mental health outcomes like mortality and disability, and also assesses behavioral, neighborhood, environmental, and economic and political factors as well. HIA takes the perspective that all of these factors collectively influence health. A broad definition of health is necessary for HIA because most social decisions affect health indirectly through effects on social or environmental conditions. Table 1 identifies examples of evidence-based factors linked to health, and underscores the breadth of factors responsible for human health.

> *Health is a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity.*
>
> *- World Health Organization*

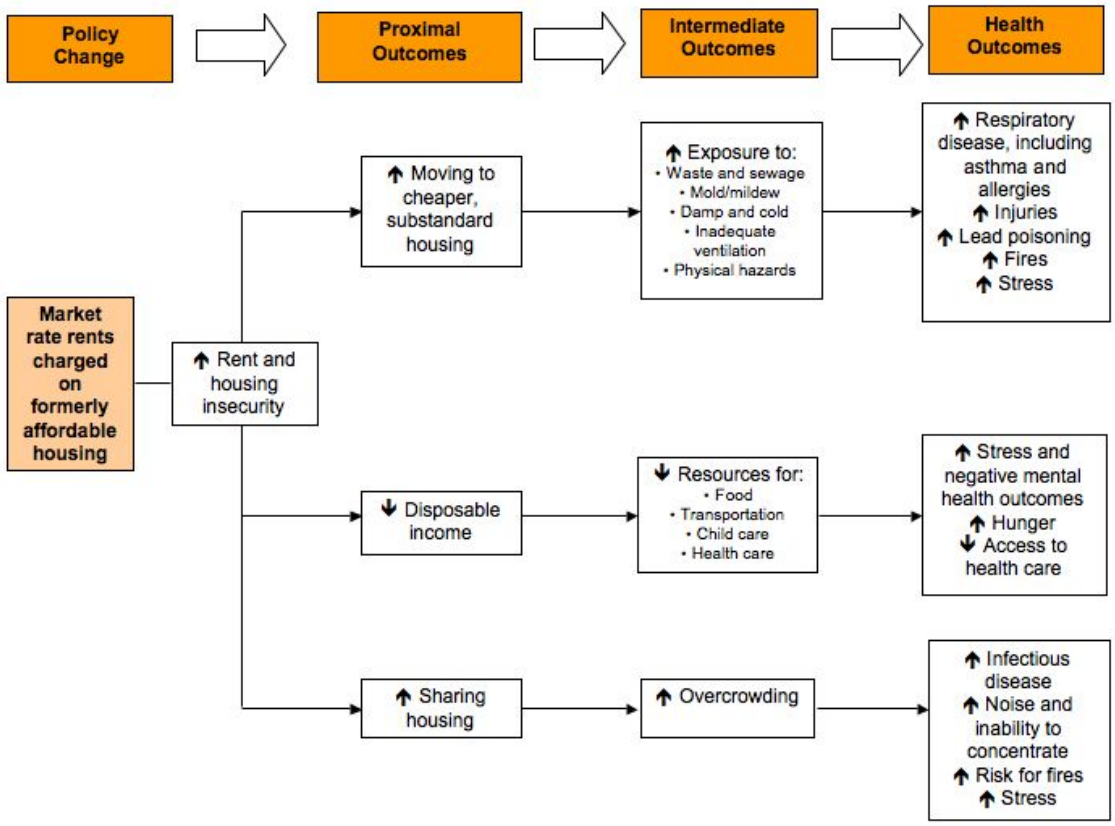
| Table 1. Population Health Determinants | | | | |
|---|---|---|---|---|
| **Fixed Individual** | **Individual Health Behaviors** | **Public Service and Infrastructures** | **Environmental Conditions** | **Social, Economic, and Political** |
| Genetic makeup<br>Gender<br>Age<br>Existing health conditions and disabilities | Diet<br>Physical activity<br>Addictions<br>Coping<br>Transportation | Education<br>Public transportation<br>Health care<br>Parks<br>Community centers<br>Economic development | Housing adequacy<br>Air, soil, and water quality<br>Community noise<br>Disease vectors | Poverty<br>Inequality<br>Social cohesion and inclusion<br>Political participation |

According to the WHO Commission on the Social Determinants of Health (2008), health status is determined by a range of factors, including, genetics (5%), health care (10%), behavior (30%), and social conditions (55%). The factors listed in the latter three columns of the table 1 are known as the "social and environmental determinants of health" and are generally considered to be the root causes of health and disease. The image below provides another depiction of these relationships.

**Causal pathways.** Causal pathways depict how a factor leads to or contributes to a health outcome. Traditional causal pathways in public health are often short and simple: exposure to the flu virus can lead to the flu. This short pathway ignores the role of environmental factors and social conditions in the production of illness and disease. For example, transmission of the flu from person to person requires social contact; households, workplaces and schools are all potential sites of social contact; environmental factors such as household crowding and economic factors such as the provision of paid sick days benefits to employees can affect social contact in households, places of work, and classrooms. Health Impact Assessment aims to make such connections between health and these social and environmental conditions more explicit.

Pathways linking public decisions, environmental conditions, and health can be complex and dynamic. For example, the quality, adequacy and affordability of housing are factors that can have wide-ranging impacts on human health (see figure 1 below).

**Figure 1. Pathways between a Housing Policy Change and Health**




The downstream effects of changes in the availability of affordable housing illustrate how social and physical environmental factors influence health. Housing that is unaffordable forces people to potentially live in crowded or substandard conditions and to work multiple jobs. This may lead to respiratory or infectious disease, increased stress, and compromised household budgets.

## 1.4 The Spectrum of HIA Practice in the United States

The majority of HIAs conducted in the United States have focused on the built environment. Public agencies, decision-makers, project or policy proponents, community and advocacy groups and other stakeholders are recognizing that land use planning and policy decisions have significant impacts on the physical and social environments that influence health.

Increasingly, HIA practice is beginning to focus on additional domains. The following is a partial list of topics HIAs have been on conducted in the United States: legislation to provide paid sick days to workers; naval weapons station reuse area plan; natural resource mining proposal; living wage policy proposal; general plan updates; transit-oriented development plans; and rental voucher assistance programs.

HIA is an emerging field and is diverse in terms of approach, methods, and public engagement (Dannenberg et al, 2008). There is no one, best approach to HIA. Each HIA process should reflect the needs of its particular context. Given that the purpose of HIA is to inform decision-makers before they make decisions, a HIA is most often carried out prospectively – i.e., before a decision to enact a proposal is made.

The scope and scale of HIA can vary. Approaches to HIA are diverse with regard to the: breadth of issues analyzed; research methods employed; relationship to regulatory impact assessment requirements; role of policy-makers, stakeholders and the public in the analysis; ways the assessment is used to influence policy; and time and resources required to complete a HIA. Overall, HIA can be described as a spectrum of practice along several key dimensions (table 2).

| Table 2. The Spectrum of HIA Practice | | |
|---|---|---|
| **Comprehensiveness** | | |
| Focused on one health determinant or health outcome (e.g., air quality / asthma) | ←→ | Considers all potential positive and negative effects on health determinants and outcomes |
| **Formal Procedures** | | |
| Public health official responds to public or decision maker requesting analysis on specific impacts | ←→ | Structured and transparent process for screening, scoping, assessment, and reporting integrated into regulatory procedures for environmental assessment or policy analysis |
| **Participation** | | |
| Analysis initiated, scoped, and conducted by public health experts | ←→ | Process includes involvement of community stakeholders |
| **Timing** | | |
| Used at early policy development stage; carried out quickly with minimal resources | ←→ | Occurs after policy options are well developed but before decision-making |
| **Methods** | | |
| Use of existing data and public research | ←→ | Collection and analysis of new data using quantitative and qualitative methods and expert and lay sources |

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## 1.5 The HIA Process – In Brief

HIA is typically carried out before a policy, plan or project is approved. This ensures that the HIA can impact the associated decision. A HIA that is completed earlier in the decision-making process has a greater likelihood of affecting the project or plan by providing information to decision-makers about consequences while there is still flexibility in the proposal specifications.

As described above, there are many ways to carry out a HIA, but a typical HIA is carried out using the steps detailed below. The focus of this toolkit is to guide you through the tasks required in each step. Chapters 3-8 goes into each of the steps in more detail, including by providing examples and worksheets for you to use in your HIA.

### Steps in a HIA

- **Screening** involves determining whether a HIA is feasible, timely, and would add value to the decision-making process.
- **Scoping** creates a plan and timeline for conducting a HIA that defines priority issues, research questions and methods, and participant roles.
- **Assessment** occurs in two steps:
    - *Creating an Existing Conditions Profile* for a geographic area and/or population in order to understand baseline conditions and to be able to predict change.
    - *Evaluating Potential Health Impacts,* including the magnitude and direction of impacts, using quantitative and qualitative research methods and data.
- **Recommendations** are then developed to improve the project, plan, or policy and/or to mitigate any negative health impacts.
- **Reporting** occurs in two steps:
    - *Creating written or visual presentation* of the HIA results can take many forms including written reports, power point presentations, and comment letters.
    - *Communicating the results* within the decision-making process. A communications plan can include media outreach and public testimony.
- **Monitoring** tracks the impacts of the HIA on the decision-making process and the decision, the implementation of the decision, and the impacts of the decision on health determinants.

**Figure 2. Guiding Values for Health Impact Assessment**

International Association of Impact Assessment

*Democracy* – People have the right to participate in the formulation and decisions of proposals that affect their life, both directly and through elected decision makers. In adhering to this value, the HIA method should involve and engage the public, and inform and influence decision makers. A distinction should be made between those who take risks voluntarily and those who are exposed to risks involuntarily (WHO, 2001).

*Equity* – The desire to reduce inequities that result from avoidable differences in health determinants and/or health status within and between different population groups. In adhering to this value, HIA should consider the distribution of health impacts across the population, paying specific attention to vulnerable groups and recommend ways to improve the proposed development for affected groups.

*Ethical use of evidence* – Transparent and rigorous processes are used to synthesize and interpret evidence, best available evidence from different disciplines and methodologies is utilized, all evidence is valued, and recommendations are developed impartially. In adhering to this value, the HIA method should use evidence to judge impacts and inform recommendations; should not set out to support or refute any proposal, and should be rigorous and transparent.

*Comprehensive approach to health* – Physical, mental and social well-being is determined by a broad range of factors from all sectors of society (known as the wider determinants of health). In adhering to this value, the HIA method should be guided by the wider determinants of health.

## 1.6 HIA Case Studies

Below we present three HIA case studies conducted by Human Impact Partners and other stakeholders. For more information on these examples, visit www.humanimpact.org.

**Case Study 1. Humboldt County, CA - General Plan Update Health Impact Assessment**

What was the project? All municipalities in California are required by State law to have General Plans (also called Comprehensive Plans) that set forth policies to guide growth over a 10 – 30 year time span. General Plans typically include the following elements: economic development, transportation, land use, housing, parks and open space, public safety, noise, and more. Humboldt County is a rural county in Northern California that decided to conduct a HIA on their General Plan Update to ensure that new policies included in the General Plan would be healthy for area residents.

Who was involved in the HIA? Humboldt County Public Health Branch, Humboldt Partnership for Active Living, Human Impact Partners, and Humboldt County Community Development Services.

How were health impacts assessed? The partners analyzed how 35 indicators, or measures, of healthy development would change based on three different proposed growth scenarios: 1) all future growth concentrated in existing urban areas, 2) allowing some expansion in and around the urban areas, and 3) unrestricted growth with development permitted throughout the County's urban and rural areas. Indicators such as how many vehicle miles individuals would travel per day were forecasted for all three scenarios based estimates of how many more miles rural vs. urban residents drive. For most of the 35 indicators, the HIA found that more dense, urban-oriented growth option was the healthiest growth scenario that could be adopted for the General Plan Update.

What happened? Partners publicized the HIA results in community meetings, via the media, and in one-on-one and community meetings with the elected officials charged with selecting the final growth scenario. Many of the HIA recommendations have affected subsequent revisions of the General Plan Update, and several HIA recommendations have been adopted into the General Plan Update. The County has yet to decide on the final growth scenario that will guide its General Plan.

## Case Study 2. California – Paid Sick Days Health Impact Assessment

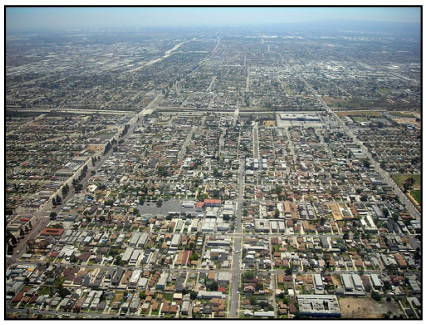
What was the project? The California Healthy Families, Healthy Workplaces Act (AB 2716), a proposed state law requiring that employees of a certain size provide their employees with a minimum number of paid sick days.

Who was involved? The Labor Project for Working Families, Human Impact Partners, San Francisco Department of Public Health, researchers at UC Berkeley, and the Communications Consortium Media Center.

How were health impacts assessed? Specific research goals for the HIA were to understand the prevalence of paid sick days by demographic and occupational factors, assessing the impact of paid sick days on physical and mental health outcomes, health care utilization, communicable disease transmission, care of family members, and employment retention. To answer these questions, the HIA employed a combination of qualitative and quantitative methods including in-depth literature review, a secondary analysis of California Work and Health Survey data, focus groups with California workers, a survey with a limited sample of California workers, and interviews with local, state and national public health officials responsible for communicable disease control. In sum, the HIA predicted significant, positive, and credible health impacts from the legislation. These included limiting the transmission of communicable disease in community settings (specifically influenza and gastrointestinal illness), enabling workers to care for sick dependents and to participate in preventative care, and reduced stress related to income loss and the threat of job loss.

What happened? While the bill id not pass in that legislative session, the HIA succeeded in changing the conversation among decision-makers about the benefits of paid sick days. Originally perceived as a labor issue benefiting only workers without paid sick days, legislators and stakeholders began to talk about paid sick days as a policy that protected and promoted health for all Californians. Resonance of findings with policy-makers, the enthusiastic use of the HIA by supporters of the legislation, extensive coverage by the media, endorsement of public health officials and organizations, and continuing collaboration with paid sick days efforts nationally all suggest that the paid sick days HIA successfully furthered the inclusion of health considerations in a broader policy dialogue. Today, stakeholders around the country have gone on to replicate the analysis for their locality, and a national paid sick days HIA helped shape discussion on a national paid sick days bill.

## Case Study 3. South Los Angeles, CA – Specific Plan Health Impact Assessment



What was the project? In a neighborhood in South Los Angeles, Los Angeles ACORN, a local community organization, won a long time battle to encourage the closure of a chromium plating facility operating in close proximity to homes and a elementary school. After a re-zoning of the site that allowed residential uses, LA Acorn engaged the interest of a housing developer who proposed to build an affordable housing development and community space on the site. ACORN decided to work with Human Impact Partners to conduct a HIA on the proposed project. The goal was to understand the potential health impacts of the project and propose recommendations to ensure that the new development would have beneficial health outcomes for community residents living close-by.

Who was involved? Los Angeles ACORN, Human Impact Partners, Urban Housing Communities (the housing developer), Los Angeles County Public Health Department, Los Angeles County Redevelopment Agency, and The California Endowment.

How were health impacts assessed? ACORN conducted a door-to-door survey of 300 local residents to identify their primary health concerns and better understand the challenges of living in the neighborhood. Survey results indicated that the community's priority concerns were a lack of affordable housing, access to healthy retail services, public transportation, and parks and recreational facilities, and opportunities for after-school programs and children's educational programming. Residents also indicated that pervasive crime and violence resulted in a lack of social cohesion within the community. HIA partners were also able to gather information about existing health conditions from the public health department and other sources. The HIA analysis predicted how the proposed project would impact health conditions in the community. Selected findings included: proposed rents for the affordable housing units were actually unaffordable to the majority of local residents; there were few grocery stores and other healthy food retail options within a two-mile radius of the site; and, that a higher than previously estimated proportion of the local population lacked health insurance coverage.

What happened? ACORN members used the HIA findings to advocate for changes to the housing development plan. Recommendations included adjusting rental rates to ensure that units would be affordable to local residents and specifying that healthy food retail would be encouraged to locate at the commercial space included in the development. Other recommendations targeted the City of Los Angeles, and specifically pressed for improvements to streets and sidewalks to enhance walkability and pedestrian safety.

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# Chapter 2. Collaboration in HIA

**In this chapter, you will learn:**

- The objective, key points and essential tasks of Collaboration in HIA
- The benefits of collaboration in HIA
- Who should be involved in a HIA and how to establish principles of collaboration
- How to assess an organization's readiness to conduct a HIA
- How to use several exercises to make the connections between health place

## Objective

To meaningfully involve stakeholders in the HIA process.

## Essential Tasks

- Recruit a diverse group of stakeholders to participate and provide input at each stage of the HIA process
- Ensure that stakeholders have the necessary resources and capacity to meaningfully participate in the HIA
- Establish shared goals and objectives among stakeholders early in the HIA process

## Key Points

**Stakeholders include** those who have an interest in the health impacts of the proposed project, plan or policy that is the focus of the HIA, and/or have influence in the decision-making process.

**Examples of stakeholders include:** community residents; community organizations; advocacy organizations; public agencies (e.g., public health, planning and economic development, transportation, etc); academics; elected officials; business, industry and developers; and service providers.

**Impacted populations,** particularly those that are most vulnerable, should have a role in shaping the HIA process.

**Stakeholder involvement at every stage of the HIA process** can enable stakeholders to better understand, contribute to and use HIA findings and recommendations.

**Collaboration amongst diverse stakeholders in the HIA process can help to foster new relationships and collaboration.**

**Engaging a variety of stakeholders** in the HIA process will help to ensure that HIA findings are as objective as possible, and recommendations are most useful and feasible.
**Community and advocacy groups** can play an important role in communicating HIA findings and recommendations, complementing the sometimes limited abilities of other stakeholders to engage in advocacy.

**Involvement of public agencies,** (e.g. public health, planning) can improve data collection and analysis, and foster communication between stakeholders and decision-makers.

**Participation of a project, plan or policy proponent** in the HIA process can help to establish buy-in and support for HIA recommendations.

**Elected officials or decision-makers** can weigh in on the scope of the HIA, and the feasibility of HIA recommendations.

**Health is a shared value.** HIA can serve to inform diverse stakeholders, including impacted communities and decision-makers, about how policies or projects impact health.

**HIA findings** can help to support the credibility of community and advocacy efforts. Communicating the findings of an HIA can help to build leadership and new collaborations.

**Community involvement in HIA can lead to empowerment.** The World Health Organization states, "Any serious effort to reduce health inequities will involve political empowerment." Communities should be able to play a role in shaping their living and working conditions, and ensure that the changes needed to improve well-being are implemented.

**Simply having public meetings to inform community members of policy, plan or project changes, or to gather input, does not lead to empowerment.**

## 2.1 Benefits of Collaboration

Why engage others in HIA? There is great value in partnerships with diverse stakeholders: understanding differing perspectives; building relationships with the community; identifying resources and expertise; establishing opportunities for future relationships; developing political connections; and learning to employ "inside/outside" strategies, where an official agency might bring facts to a decision-making process but be unable to apply political pressure where other partners can more effectively advocate.

A broad range of constituencies are affected by policy and planning decisions. HIA facilitates a democratic decision-making process by involving those most affected by a decision. It is not necessarily feasible or desirable for any one organization or entity to conduct a HIA alone. Collaboration brings together a diversity of resources. Some benefits of collaboration include:

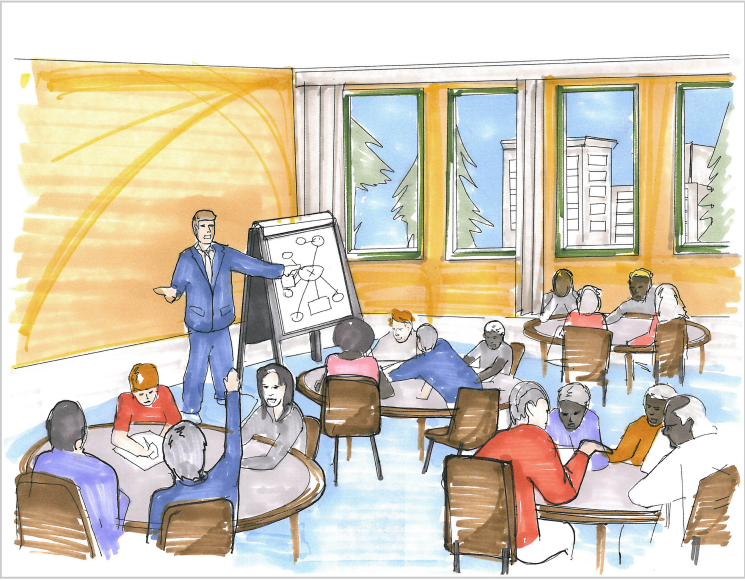
- Data and information is often housed by a variety of pubic agencies and community stakeholders. Working with others allows greater access to that knowledge base and allows for more accurate estimation of health impacts.

- Departments of Public Health may be able to do data analysis and mapping. Academic partners have access to research and state-of-the art methodologies for analysis. Partnering with these institutions frees up limited resources for other HIA-related tasks.
- Community organizations have relationships in their communities and may have the capacity to implement a survey or focus group to gather information about priority health issues and strategies for health promotion.
- Public agencies may be able to collaborate on an HIA, but might not able to advocate for a specific outcome. Advocacy organizations may be well-positioned to take the results and improve the design of the policy or plan, and also to lobby for one outcome or another.
- Other partners may bring financial resources, political connections, and historical knowledge of the plan or policy under review.

Partnerships created during HIA processes often continue in other ventures. Because HIA necessarily involves interdisciplinary collaborations, it can break down "silos" that have resulted in fragmented and incomplete information in decision-making and programming.

## 2.2 Who should be involved in HIA?

The HIA process should have oversight from a Steering Committee that includes stakeholders who are affected by a decision. Try to include as many stakeholders as possible in the scoping phase in particular, and if useful, on the HIA Steering Committee. These could include: community and advocacy organizations; agency officials (e.g., public health, planning, city administration, transportation, advocates); experts and consultants; elected officials; project or policy proponents; other stakeholders (e.g., unaffiliated residents or individuals, property owners).



**Roles and Responsibilities of HIA Steering Committee Members**

As shown in table 3, there are a variety of roles and tasks in HIA. Involving a variety of agencies and organizations enables the HIA team to draw on expertise in different areas. For example, a public health department has access to data and statistical methodologies, an advocacy organization can disseminate HIA results in a powerful way, and a community group has connections.

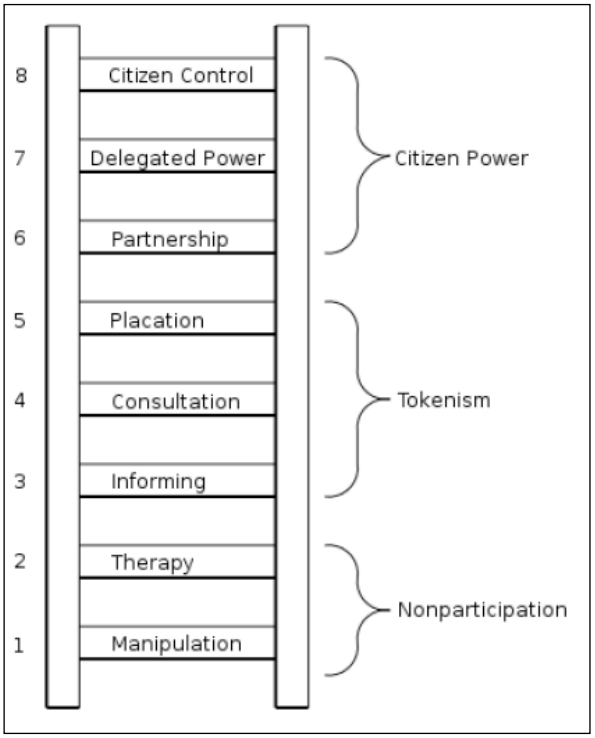
| Table 3. Roles and Responsibilities of HIA Steering Committee Members | | |
|---|---|---|
| **Stage** | **Roles and Tasks** | **Collaborators** |
| Process oversight | • Develop collaboration agreement for conduct and oversight of HIA process<br>• Oversee HIA process (coordinate partners and activities for each step of the HIA) | - Community organizations<br>- Advocacy organizations<br>- Coalitions<br>- Public and regulatory agencies e.g., Public Health, Planning, Transportation, Environmental Protection Agency, Housing Authority, School Districts<br>- Universities<br>- Elected officials<br>- Consultants |
| Screening | • Identify criteria for selection for HIA projects<br>• Understand decision and decision-making context<br>• Contact other stakeholders and decision-makers<br>• Research funding opportunities<br>• Prioritize health issues to be studied<br>• Judge strength of evidence<br>• Understand competing stakeholder positions | |
| Scoping | • Conduct issue identification<br>• Prioritize research questions for HIA<br>• Broaden spectrum of stakeholders involved<br>• Identify health pathways and equity effects<br>• Identify sources of information and data<br>• Establish timeline and boundaries<br>• Consider resources available<br>• Develop workplan | |
| Assessment and Recommendations | • Research baseline conditions<br>• Lead or participate in field observations and research<br>• Develop and conduct surveys, interviews, and focus groups<br>• Interpret results of local data collection<br>• Help connect variety of data sources to answer research questions<br>• Statistical analysis<br>• GIS mapping<br>• Document review<br>• Field visits and field measures<br>• Secondary data review<br>• Identify evidence-based mitigations and recommendations | |
| Reporting | • Write, review, and edit final HIA report and publications (e.g., letters, testimony)<br>• Prepare comments for regulatory process<br>• Interpret / prioritize HIA findings and recommendations<br>• Develop presentations of findings<br>• Communicate HIA findings to decision-makers | |

| | | |
|---|---|---|
| | • Advocate for inclusion of health in decision<br>• Create demand for public agencies to conduct HIA | |
| Monitoring | • Monitor decision outcomes and long term results<br>• Hold decision-makers accountable for agreements and mitigations | |

## 2.3 Levels of Engagement

There are many levels of stakeholder engagement. Sherry R. Arnstein's Ladder of Citizen Participation (Figure 3), a framework often utilized in studies of equity and civic engagement, was published in 1969 and remains a valid way to describe the spectrum of engagement, from input to empowerment, and how the position of one's approach on the ladder affects how engagement is planned and carried out. Although not explicitly used in HIA, it is presented here as a tool to help conceptualize the different levels of engagement. It is also suggested that it be incorporated into HIA practice as a way to gauge the desired level of engagement.

**Figure 3. Ladder of Citizen Participation**




If practitioners identify community empowerment as a stand-alone goal of their HIA, any victories or policy changes that result should also be judged by how those changes were achieved and where along the Ladder of Citizen Participation the engagement process occurred and concluded. Evaluating empowerment calls for collecting data on stakeholders' experience with the HIA process and their own level of personal power, accountability, connectedness, sense of vision, etc. This is just one example of how the goals of engagement can shape how practitioners plan for, implement, and evaluate engagement.

The rungs of Arnstein's ladder fit nicely into a framework for understanding best practices for stakeholder participation in HIA (table 4). As noted, there are varied ways to effectively engage stakeholders at different levels but, at a minimum, HIA practitioners should seek to achieve participation at the Informing and Consultation rungs or higher.

| Table 4. Ladder of Citizen Participation Applied to HIA Practice | | |
|---|---|---|
| **Rung** | **Arnstein's description** | **Applied to HIA practice** |
| **Citizen Control & Delegated Power** | Vulnerable populations most impacted obtain majority decision-making power | HIA stakeholders, including vulnerable populations, decide on scope, have final approval of HIA report, decide on communication strategy |
| **Partnership** | Vulnerable populations can negotiate and engage in trade-offs with power holders | Stakeholders impact the direction of HIA (scope) and reporting, but decisions are made equally with project team |
| **Placation** | Allows vulnerable populations to advise, but power holders have right to decide | Stakeholders offer input which may shape HIA, but project team makes all decisions |
| **Informing & Consultation** | Citizens can offer input and be heard, but no assurance their views will be heeded | Stakeholders offer input but it does not necessarily shape HIA |
| **Manipulation & Therapy** | Power holders "educate" or "cure" citizens – not encourage participation | Only telling stakeholders what is happening; not soliciting input; Saying stakeholder voices matter but then doing nothing to act on input; Not giving out all relevant information; Or, giving different information to different stakeholders |

**Agreeing to Work Together: Principles of Collaboration**

In any collaboration, it is vital that all partners understand up-front what to expect from each other. Appendix D provides an example of a formal agreement to ensure that all parties involved in a HIA understand each organization's relevant values, interest in the HIA, and roles and responsibilities as well as potential sources of conflict in the HIA process and how decisions will be made. Before a HIA is embarked upon, the organizations that are participating in it should explicitly state - and sign an agreement - what they are committing to. Such "Principles of Collaboration" are a useful facilitation tool to set stakeholder expectations, agree to roles and responsibilities, and to ensure accountability throughout the process.

## 2.4 Understanding a Stakeholder's Readiness to Engage in HIA

In deciding whether to conduct a HIA, it is essential to understand potential partners' readiness to participate in or conduct the HIA. The following questions offer a way for an agency, group, or organization to consider if they are ready to embark upon a health analysis of a development project or policy. These questions are meant to be answered as a step in the process of evaluating readiness to conduct a HIA and as part of the process to help them get ready. Conversations around these questions should be a dialogue, not a test.

**A. *What* is the decision target?**

1. What is the problem your organization is trying to address that involves the use of HIA?
2. Is there currently a defined project, plan, or policy proposal that is suitable for Health Impact Assessment? Or is one very likely to be proposed in the immediate future? Please describe the proposal.

***What* are the health issues?**

3. Have neighborhood health issues (defined broadly) been identified as high priorities for community residents or organizations potentially involved in the HIA? If so, which ones?
4. List the most important research questions about the health impacts of the decision that an HIA could answer.

**B. *Why* is an HIA warranted?**

5. Describe the goal that your organization would set for the Health Impact Assessment.
   a. Are there known or suspected health or environmental health impacts of the project, plan, or policy being proposed?
   b. What established community health needs could potentially be addressed by doing an HIA on the project, plan or policy?
   c. Could identification or quantification of health impacts affect public or political support for the plan, its alternatives, or the policy that is being proposed?

6. Will health questions be considered in other parts of the decision making process (e.g., through other regulatory processes such as Environmental Impact Assessment)?

**C. *Who* are decision-makers?**

7. Who are the decision-makers that you would want to influence with the HIA findings and recommendations?
8. Should public health agencies or other health constituencies be more engaged in the decision-making processes? If so, do you have contacts yet at your county public health department?

***Who* will be involved in the HIA?**

9. Which stakeholders are engaged in or expect to be engaged in the decision-making process? How many community members are likely to engage? How high a priority is this project for stakeholders or community members?
    a. What is most needed to achieve readiness to conduct the HIA?
        - Education about what HIA is?
        - Examples of past HIAs so we know what to expect?
        - Training about how to frame health issues when advocating for our project, plan or policy?
10. Do stakeholders or engaged community members currently have the capacity to participate in the HIA?
    a. Is your organization able to participate in scoping sessions (2 – 3 one to two-hour meetings) to better define research questions?
    b. Is your organization able to participate in a steering committee to provide oversight and direction for the HIA?
    c. Are community organizations able to organize and bring residents to a focus group or are they able to conduct a survey?
    d. Are community members or organizations able to use or communicate results of a HIA?
11. Who put forward the idea of considering a HIA for this project? How will they be involved in the process or communication of the HIA, if at all?
12. Who would be likely to use the results of the HIA?

**D. *When* will the decision be made?**

13. What is the timing of the decision you will use your HIA to influence? How much time would be available for conducting an HIA?

**E. *How* will the HIA be used?**

14. How might the results of the HIA be used to impact the decision-making process by any of the stakeholders involved?

***How* would your organization use the HIA, based on its specific strengths?**

15. On a day-to-day basis, how does your organization prioritize the issues that you work on and/or the strategies you use to work on them? (please select all that apply)
    a. We go to our membership for guidance
    b. Staff decides and gets input from committees/board
    c. We take direction from our national organization
    d. Other – please describe:
16. Would you describe your organization as primarily providing services, training others to advocate for themselves, or advocating for policy change? Or a combination of all three? Please elaborate.

## 2.5 Making the Connection between Health and Place

The following section offers two structured exercises to discuss about health and land use in your community. These exercises make health connections explicit, illustrate how the social determinants of health impact behaviors, and help prepare community members to engage in the Screening and Scoping phases of HIAs.

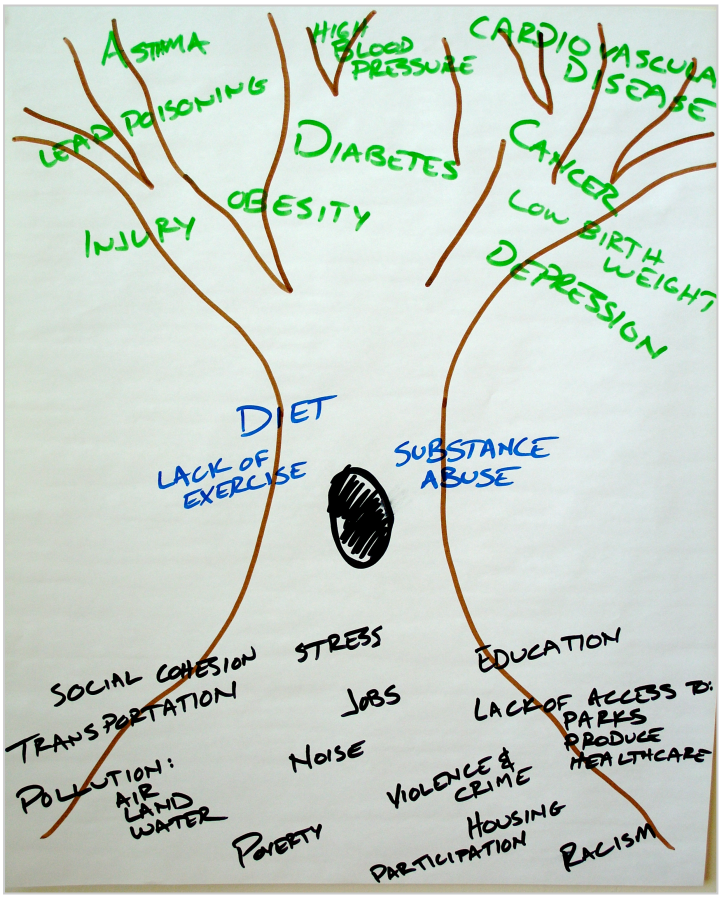
**Exercise 1. Talking about Health, Place, and Policy - Tree Exercise**

This exercise provides a useful framework to discuss how health outcomes are a product of social determinants.

**Directions:**

1. Draw a bare tree with roots, a trunk, and branches.
2. Ask participants to list several disease outcomes prevalent in their community. These may include asthma, diabetes, obesity, injury, heart attacks, and depression. List these diseases as the leaves on the tree.
3. Next, ask people to list behaviors that contribute to the disease outcomes they identified. These may include overeating, lack of physical activity, and substance abuse. List these on the trunk of the tree.
4. Finally, ask people to list social, economic, and political determinants that influence the behaviors they described. These may include poverty, racism, unaffordable housing, lack of public transportation and grocery stores, and air pollution. List these determinants at the roots of the tree.
5. These determinants represent the "root causes of disease." Describe how some of the root causes impact health outcomes through behaviors (e.g., lack of a grocery store impacts diet and therefore diabetes) and others impact health outcomes directly (e.g., air pollution leads to respiratory disease).

Very often, people begin by listing either behaviors or root causes when initially asked about disease outcomes. The facilitator must write these things in the correct part of the tree to clearly illustrate antecedents to poor health. At the end, state that HIA can be described as a process to assess how a project or plan impacts the roots of the tree, and through those determinants, the disease outcomes listed on the branches. See below for a sample tree.




**Exercise 2. Mapping Health Resources and Liabilities in a Community**

Another way to explicitly make the connection between health and place is to map the elements of a community that contribute to health and disease.

**Directions:**

1. Hand out maps of the community or neighborhood under discussion.
2. Ask participants to circle "good" and "bad" locations in the community that might contribute to healthy living.
3. Have participants work in small groups to discuss the reasons why those locations were deemed healthy or unhealthy. Some of the things that often come up include intersections that feel dangerous to pedestrians, community centers or coffee shops where friends gather, and a polluting industry.
4. This exercise can be a valuable data collection tool, so be sure to assign someone in each group to take notes. Or, record the full group discussion with an audio or video recorder.

# Chapter 3. Screening

**In this chapter, you will learn:**

- The objective, key points and essential tasks of Screening
- Examples of projects that were screened in and out of HIA
- The types of questions that should be asked in the Screening stage

## Objective

To decide whether a HIA is feasible, timely, and would add value to the decision-making process.

## Essential Tasks

- Define the decision and its alternatives
- Decide who will be involved in screening
- Determine if potential partners are ready to work on an HIA
- Evaluate the project, plan, or policy based on screening criteria
- Make a decision about whether to conduct an HIA
- Notify stakeholders of your decision

## Key Points

**HIA is used to assess a defined project, plan, or policy.** The purpose of HIA is to inform decision-makers before they make a decision. An HIA is most often carried out before a decision is made or the proposal is implemented.

**Have sufficient information about the decision.** Conducting an HIA requires sufficient information about the proposed policy or plan to evaluate health impacts. Vague plans or policy statements may provide too little substance for an HIA.

**Establish the value of HIA.** It is not possible or desirable to conduct an HIA on every public decision. Projects that benefit from HIA are those that have the potential to result in substantial effects on public health, where such an analysis might significantly protect or promote the health of a population and where partners are engaged in the HIA process and will use the results.

**Assess feasibility.** Feasibility involves being able to conduct an informative HIA within the decision-making time frame and with available resources.

**Understand timing.** Conducting an HIA early in the design and decision-making process offers the best opportunity for influencing the design of the project, plan, or policy. If the HIA occurs too late in the process, it risks confronting a fixed design or closed positions.

**Evaluate decision openness.** For HIA to be most valuable, the decision-making process should be open to receiving and acting on new information.

**Be inclusive.** Have community groups, public agencies and other potential HIA collaborators participate in the screening process. Participation of stakeholders in the HIA process at the earliest possible stage can help to ensure buy-in, constructive dialogue, and openness to HIA findings and recommendations.

**Avoid redundancy.** An HIA may be less useful if health effects related to the decision are already well established, or if another impact assessment or analysis will serve to comprehensively analyze health impacts.

## Tools

Screening Criteria from Human Impact Partners' Screening White Paper:

1. The project, plan or policy has been proposed, a final decision about whether to adopt the proposal has not been made, and there is sufficient time to conduct an analysis before the decision is made.
2. The decision has the potential to affect, positively or negatively, environmental or social determinants of health that impact health outcomes of a population - and those health impacts are not being or likely to be considered without the HIA.
3. Evidence, expertise, and/or research methods exist to analyze health impacts associated with the decision being considered.
4. The proposal being considered could potentially impact health inequities.
5. The proposal's impact on health outcomes is potentially significant. This can be measured in terms of the number of people impacted, the magnitude of impacts, and the breadth of the impacts.
6. The connections between the proposal and health outcomes are neither too obvious nor too indirect.
7. Decision-makers and/or those stakeholders who have the capacity to influence decision-makers are likely to use HIA findings and recommendations to inform or influence the decision-making process, whether through regulatory requirements or voluntarily.
8. The HIA could help lead to institutional and/or systemic changes that promote better health outcomes for all.
9. Partners are available to participate in the HIA process and use HIA findings and recommendations.

10. Resources (including funding, personnel, technical capacity, and leadership) are available to conduct the HIA.

## Resources


- Human Impact Partners. 2009. Considerations for the Selection of Appropriate Policies, Plans, or Projects for Analysis using Health Impact Assessment. Available at http://www.humanimpact.org/capacity-building/hia-tools-and-resources/.
- Human Impact Partners. 2009. HIA Readiness Questions. Available at http://www.humanimpact.org/capacity-building/hia-tools-and-resources/.
- Taylor L. et al. 2003. Deciding if a Health Impact Assessment Is Required (Screening for HIA). NHS Health Development Agency. Available at http://www.iaia.org/publicdocuments/pubs_ref_material/Screening%20for%20HIA%20pdf.pdf.
- Ison, E. 2001. Health Impact Assessment: A Screening Tool for the GLA, Strategic Level. Greater London Authority, London.
- Scott-Samuel A. et al. 2001. The Merseyside Guidelines for Health Impact Assessment. Second Edition. Published by the International Health Impact Assessment Consortium. Available at http://www.liv.ac.uk/ihia/IMPACT_HIA_Reports.htm.

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## HIA projects "screened in" and "screened out"

Some projects or policies are not good candidates for Health Impact Assessment. In the examples that follow, we discuss several scenarios and whether a HIA is called for based on the screening criteria listed above.

**Project #1, Screened Out: A plan to improve walkability, Chula Vista, CA**

This potential HIA would have examined a proposed area plan to improve walkability in Chula Vista, CA. The area plan was focused in the downtown area, and included traffic calming, intersection guidance, and bicycle lanes.

*Why not do an HIA?*

- The plan was already considering health.
- A HIA would have concluded that the plan would have a positive impact on health, and therefore lacked an opportunity to develop useful recommendations.
- Health advocates were already involved in the design of the plan.
- Time and resources would be better used to bring health into a decision-making process where it is not already being considered.

**Project #2, Screened Out: Proposed WalMart distribution center, Merced, CA**

This potential HIA looked at a proposal to locate a WalMart distribution center in a Central Valley town, near a school. Concerns included an increase in truck traffic near the school, air quality impacts, and traffic accidents.

*Why not do an HIA?*

- Consideration of HIA came after the draft environmental review was published, and just a month before the final draft was due.
- County Supervisors were not open to addressing health concerns.
- Health advocates had developed a list of suggested mitigations for the project that had been ignored.
- Time and resources would be better used to explore legal options, and to support the election of more health-focused Supervisors.

**Project #3, Screened In: General Plan Update (GPU), Humboldt County, CA**

This HIA examined alternatives for how Humboldt County would accommodate population growth over the next 25 years. The three alternatives were: focused growth in urban areas, some expansion to extra-urban areas, or unrestricted growth throughout the county.

*Why do an HIA?*

- Policies in the General Plan would impact the built environment policies, and thus health, for years to come.
- County Supervisors had required that the Public Health Department get involved in the GPU, thus health was going to be considered in the decision.
- There were resources available for data and research at the public health department, community involvement through an advocacy groups that helped to collect local data and disseminate findings, and funding.

**Project #4, Screened In: Paid Sick Days legislation, California**

This HIA would research the health impacts of legislation requiring employers to provide their employees with paid sick days.

*Why do an HIA?*

- There were considerable health impacts – 5.4 million workers in California did not have paid sick days and there were a variety of hypothesized health impacts from the legislation.
- The partners on the HIA steering committee had diverse skills, including advocacy, communications and research, and they were excited at the prospect of a HIA.
- Data and methods of analysis were readily available.
- Decision-makers were amenable to a new way of looking at this issue.

## Screening Exercise 1. Screening Worksheet

Complete the following worksheet using a policy or project you are considering doing a HIA on. If you do not have a project or policy in mind, feel free to choose one of the Screening Scenarios in Appendix A. Answer the Screening questions to determine if a HIA would have value for the scenario you chose. You may not have all of the information needed at your fingertips, so for the purpose of the exercise you are encouraged to make assumptions about facts that you might need in order to complete this exercise.

| Screening Questions | Response and Supporting Facts |
|---|---|
| **Project and Timing**<br>*Has a project, plan or policy been proposed?*<br>*Is there sufficient time to conduct an analysis before the final decision is made?* | |
| **Health Impacts**<br>*Does the decision have the potential to affect environmental or social determinants that impact health outcomes? If so, which determinants and which health outcomes?*<br>*Would health inequities be impacted? In what ways?*<br>*Are the proposal's impacts to health likely to be significant in terms of the number of people impacted, the magnitude, breadth and/or immediacy of impacts?*<br>*Do evidence, expertise, and/or research methods exist to analyze health impacts of the decision?* | |
| **Potential Impact of HIA Findings**<br>*Is health already being considered in the proposal or as part of the decision-making process?*<br>*Are the links between the proposal and health or health determinants clear?*<br>*Is the decision-making process open to the HIA and/or recommendations for changes to design, mitigations and/or alternatives?*<br>*If applied, would HIA findings and recommendations potentially improve the impact that the proposal has on health?* | |
| **Potential Impact of the HIA Process**<br>*What are the potential impacts of the HIA process? (e.g., building relationships, empowering community* | |

| | |
|---|---|
| *members, demonstrating how health can be used in decision making)* | |
| **Stakeholder Interest and Capacity**<br>*Have public concerns about the health impacts of the decision been voiced or documented?*<br>*Who are the stakeholders and interest groups involved in the decision-making process?*<br>*Do stakeholders have the interest to participate in the HIA?*<br>*Do stakeholders have the capacity (resources, skills, etc.) to participate in the HIA?*<br>*Would stakeholders use the HIA to inform or influence the decision-making process? How?* | |

For a more detailed explanation of these screening criteria with examples, see HIP's White Paper on Screening: Heller, J. 2009. Considerations for the Selection of Appropriate Policies, Plans, or Projects for Analysis using Health Impact Assessment. Human Impact Partners. Available at http://www.humanimpact.org/capacity-building/hia-tools-and-resources/.

# Chapter 4. Scoping

**In this chapter, you will learn:**

- The objective, essential tasks, and key points of Scoping
- About tools and resources available to support you in Scoping
- How to complete a pathway diagram and Scoping worksheet, and how to identify partners for Scoping

## Objective

To create a plan and timeline for conducting an HIA that defines priority issues, research questions and methods, and participant roles.

## Essential Tasks

- Determine the individual or team responsible for conducting the HIA and their roles
- Set ground rules or principles of collaboration for working together
- Establish goals for the HIA
- Develop a formal HIA scope and workplan

## Key Points

**To set the scope, determine:**

- Decision alternatives to be evaluated
- Potential health impacts of the decision to be considered in the HIA
- Populations to be evaluated, including vulnerable populations defined by place, income, race, gender, or age
- Demographic, geographical and temporal boundaries for impact analysis
- Research questions, data sources, and analytic methods for analysis (table 5 highlights resource requirements for HIA analysis methods)
- Timelines
- Draft plans for reporting and communications, monitoring, and evaluation
- Participant roles and responsibilities

**The scope should focus on impacts with the greatest potential significance,** with regard to factors including but not limited to magnitude, certainty, permanence, stakeholder priorities, and equity.

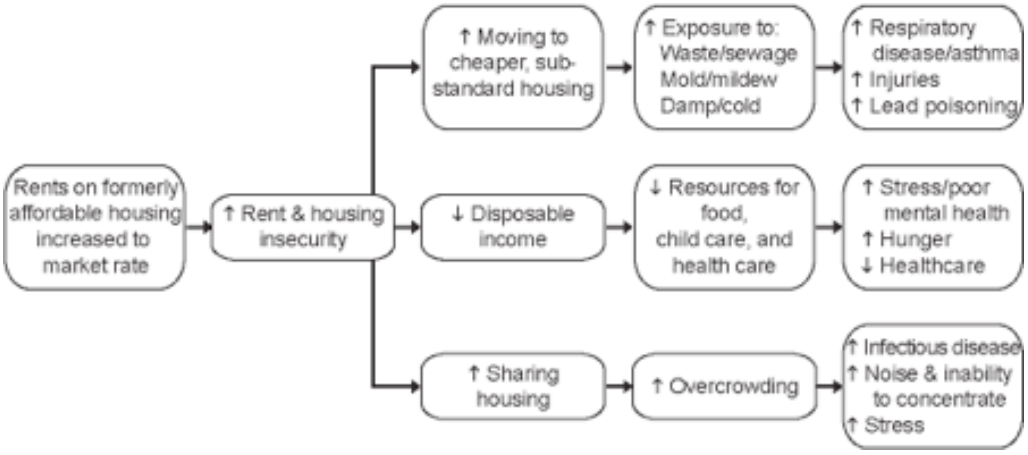
**Be inclusive.** Consideration of health impacts to be studied in the HIA should be informed by

stakeholders including community and advocacy groups, public health and other government agencies, project proponents, decision makers, and affected community members.

**Use diverse outreach methods** to solicit feedback and participation from a variety of stakeholders by hosting a public meeting, receiving public comments, interviewing stakeholders and experts, or inviting input from local health experts.

| **Table 5. Resource Requirements for HIA Analysis Methods** | |
|---|---|
| Least Resources<br>↓<br>Most Resources | • Literature review<br>• Analysis and mapping of existing data<br>• Expert opinion<br>• Application of quantitative forecasting methods<br>• Interviews or focus groups<br>• New quantitative data collection and analysis |

**Consider all pathways that link the proposed decision to health.** Use pathway diagrams as a way to demonstrate these links:



## Tools

For each health determinant that will be addressed in the HIA, consider the following questions:

- What are the existing/baseline conditions related to the health determinant?
- How will the project, plan, or policy impact baseline conditions?
- What indicators can be used to measure baseline conditions and impacts?
- Where will you find data for each indicator?
- What methods will be used to assess baseline conditions and predict impacts?
- How will you prioritize the research questions and/or indicators? How will you determine which ones will be included in the final Scope?

## Resources

HIP's website (http://www.humanimpact.org/capacity-building/hia-tools-and-resources/) has links to the following resources:

- Example of a land use development project scope: Concord, CA Naval Weapons Station HIA scope (see Appendix B)
- HIA Scoping Worksheet
- Principles of Collaboration

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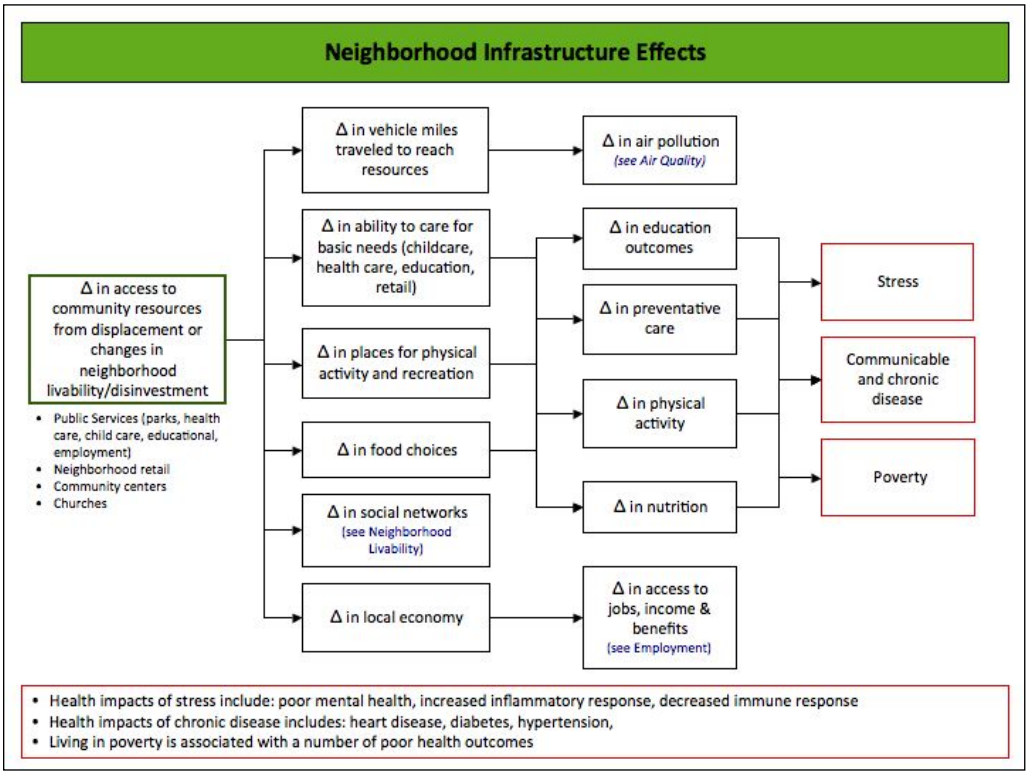
## Scoping Exercise 1. Pathway Diagrams

Scoping involves considering the pathways that lead from the project or policy to health, and these pathways can at times be complex. Unlike a traditional public health pathway such as exposure to pesticide leading to poisoning, pathways about projects or policies consider multiple physical and social exposures and lead to a wide range of health outcomes. In order to consider all the exposures as well as prioritize those that matter most for the HIA, drawing diagrams of various pathways can help.

**Directions:** Consider the sample pathway diagrams in Appendix C. For a policy or project, consider one of the pathways that you could begin with, and draw the connections out to health outcomes. For example, for a freeway widening project, this exercise might have you consider just how it could impact air quality, even though other potential impacts include noise, access to goods and services, social cohesion, access to parks and schools, and economic impacts. See below for an example of a pathway diagram.



## Scoping Exercise 2. Scoping Worksheet

**Directions:**

1. Review the Scoping worksheet and example below.
2. Within the context of your case study scenario, identify one health determinant that would be prioritized in a HIA for this proposed project, plan or policy.
3. Describe potential pathways from the proposed project, plan or policy to changes in social and environmental conditions that lead to the health determinant you've selected. Identify potential health outcomes resulting from your health determinant as well (draw a "pathway diagram").
4. Move onto the worksheet and write-in your health determinant. Identify the geographic scope for your analysis.
5. For the health determinant you identified, complete the following questions:
    - Identify an "existing conditions research question" to understand baseline conditions related to the health determinant.
    - Identify an "impact research question" that describes how the project, plan, or policy may impact baseline conditions related to the preceding question.
    - Identify the indicators that can be used to answer the preceding existing conditions and impact questions.
    - Identify the data sources for each indicator.
    - Identify the methods that will be used to assess baseline conditions and predict impacts.
    - List high-medium-low priority for the research questions and/or indicators.
    - List any special notes to keep in mind.

The following are common health determinants assessed in HIAs. Feel free to investigate other topics not listed here as well.

| | |
|---|---|
| Secure employment<br>Job quality & safety<br>Quality and accessibility of housing<br>Quality of nutrition<br>Access to goods & services<br>Education & child development | Air pollution<br>Environmental noise<br>Access to parks<br>Preservation of open space<br>Traffic safety<br>Community violence<br>Protection of community cohesion |

| | | | | |
|---|---|---|---|---|
| What are existing levels of air pollution? | Based on traffic model, how will the projected changes affect air quality? How would specific features of the proposal (e.g., carpool lanes) impact AQ? | Levels of some of the following: Carbon Black, NOx, SOx, DPM, PM2.5, PM10<br><br>Levels of above pollutants attributable to traffic on freeway<br><br>Level of emitted NO2<br><br>Level of emitted ultrafine particles | Environmental Impact Assessment; AQ modeling; emissions inventories; local studies | AQ modeling mapping lit re |
| What are current asthma rates compared to county and state? How many missed school days are currently attributable to asthma in the impacted areas? | How would changes in air quality resulting from the project be expected to impact asthma risk? How would changes in asthma rates be expected to impact missed school days? | Asthma prevalence, hospitalizations<br><br>Days of missed school due to asthma | Health survey; hospital admissions data<br><br>School district | Model using c ratios from m analyses (e.g., Weinmayr)<br><br>Qualitative de (lit review and of available st |
| How do demographics of populations living near air pollution sources compare to characteristics of people living elsewhere? | Will projected changes in air pollution exposure adversely impact people with social, economic, or education-related vulnerabilities? | Income, ethnicity/race, age data | Census | Qualitative de (lit review and of available st |

# HIA Scoping Worksheet

| | | | | | | |
|---|---|---|---|---|---|---|
| **Project:** | | | | | | |
| **Health Determinant:** | | | | | | |
| **Geographic Scope:** | | | | | | |
| Existing Conditions Research Questions | Impact Research Questions | Indicators | Data Sources | Methods | Priority | Notes |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |

## Scoping Exercise 3. Identifying HIA Partners

Use the worksheet below to explicitly identify HIA partners and the assets they bring to the HIA process. Consult table 3 (on page 23) about "Roles and Responsibilities of HIA Steering Committee Members."

| HIA Step | Examples of Roles | Potential Collaborators |
|---|---|---|
| **Process Oversight** | | |
| **Screening** | | |
| **Scoping** | | |
| **Assessment** | | |
| **Recommendations** | | |
| **Reporting and Communications** | | |
| **Monitoring** | | |

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# Chapter 5. Assessment

**In this chapter, you will learn:**

- The objective, essential tasks, and key points of Assessment
- The types of methods and tools that can be used in existing conditions analysis
- Approaches, issues and criteria to consider in impact analysis
- How to complete several Assessment exercises

## Objective

To provide a profile of existing conditions data and an evaluation of potential health impacts.

## Essential Tasks

- **Profile Existing Conditions:** Research baseline conditions, including health outcomes and determinants of health disaggregated by income, race, gender, age, and place when possible
- **Evaluate Potential Health Impacts:** Use theory, baseline conditions, and population concerns; consider evidence that supports and refutes health impacts; assess affects by income, race, gender, age, and place; include assessments of the certainty, significance, and equity of impacts; justify the selection or exclusion of data/methods; identify data gaps, uncertainties, and limitations; allow stakeholders to critique findings

## Key Points

**Gather existing data and collect primary data when necessary.** Data sources include:

- Empirical literature
- Community expertise
- Available social, economic, environmental, and health measures and surveys data
- Regulatory criteria, standards, checklists and benchmarks
- Focus groups and community surveys
- Neighborhood assessment tools

**It is necessary to profile baseline conditions in order to predict future conditions if a project, plan, or policy is enacted.**

**Conduct a literature review.** Clarify the question of interest and data needs, develop criteria for included studies, identify literature databases, identify studies and reviews, evaluate studies, and document your findings.

**Consider direction, magnitude, severity, likelihood, and distribution within the population in impact predictions.**

**Don't start from scratch.** Use tools and methods that already exist to assess health conditions and potential impacts.

**Predicting health impacts with absolute certainty is not possible.** Make informed judgments of effects based on available information, analysis, expertise, and experience. Be cautious with generalizations. Acknowledge assumptions and limitations.

**It is not always necessary to quantify health impacts.** Pathways between decisions and health effects are complex and quantification does not mean causal certainty. Assess a health impact by evaluating how a decision would affect environmental and social conditions known to be important to health.

**Use qualitative analysis for issues that don't lend themselves to quantitative forecasting.**

**Different approaches used together can support better judgments.** Use lay and expert knowledge and analysis using different methods (such as GIS mapping and surveys) to draw conclusions.

**Answer the following questions for quantitative forecasting:**

- Is there a causal relationship?
- Does data allow for quantitative predictions?
- Would prospective predictions be valid?
- Is there available time and resources?
- Would quantification support the needs of the decision-making process?

**Methods for collecting new data include:**

- Environmental measures (e.g., pedestrian quality, retail access)
- Modeling (e.g., air quality, noise)
- Surveys
- Forecasting tools (e.g., pedestrian injuries)
- Epidemiological studies

**Acknowledge assumptions as well as strengths and limitations of data and methods used.** Identify data gaps that prevent an adequate or complete assessment of potential impacts. Describe

the uncertainty in predictions. Explicitly state assumptions or inferences made in the context of modeling or predictions.

## Resources

- San Francisco Department of Public Health. Program on Health, Equity and Sustainability. Health Impact Assessment Tools. Available at http://www.sfphes.org/services.
- San Francisco Department of Public Health. Program on Health, Equity and Sustainability. Sustainable Communities Index. Available at http://www.sustainablecommunitiesindex.org/.
- Human Impact Partners. A list of commonly used HIA data sources for baseline profiles of health. Available at http://www.humanimpact.org/downloads/hip-hia-data-sources-nov-2012/.
- HIP's HIA report template, available on our Tools and Resources webpage, contains a framework for conducting and reporting on impact analysis. Available at http://www.humanimpact.org/capacity-building/hia-tools-and-resources/

## Steps of Assessment

There are two steps in the Assessment stage of HIA. First, a profile of existing health conditions, including health outcomes and determinants, is developed. Second, the impacts of the proposal on a set of prioritized health outcomes and determinants are predicted. HIA should always explore the distribution of health outcomes and determinants by various subpopulations, including by income, race/ethnicity, gender, age and place of residence. Additionally, diverse sources of evidence, and evidence both supporting and refuting particular health impacts should be considered in assessment.

## 5.1 Developing a Existing Conditions Profile

Existing conditions analysis relies on available data and, depending on resources and priorities, on the collection of new data. Many sources of data can be used to detail current conditions, including:

- Empirical literature, including peer-reviewed and grey literature
- Health, environmental and social indicators
- Regulatory criteria, standards, and benchmarks
- Community expertise, including through focus groups, surveys and interviews
- Specialized data collection tools

### 5.1.1 Empirical literature

Peer-reviewed research and systematic reviews often provide scientific evidence of the linkages

between health and a wide range of determinants. For example, the following data can be found in peer-reviewed literature:

- School children living within 225 feet of a major road have an increased risk of asthma.
- People who earn $15,000 annually are three times more likely to die prematurely than those earning $70,000.
- Moving 3 or more times by the age of 7 is associated with academic delay, school suspensions, emotional problems, and a 36% increased risk of depression.
- People who take public transportation get, on average, 19 minutes of exercise a day.

Searchable databases for epidemiological literature include:

- PUBMED (maintained by the National Institutes of Health): www.ncbi.nlm.nih.gov/pubmed.
- Guide to Community Preventive Services (maintained by the Centers for Disease Control and Prevention (CDC): www.thecommunityguide.org.
- Campbell Collaboration provides systematic reviews of social interventions in education, crime and justice and social welfare: www.campbellcollaboration.org.

"Grey literature" is also a valuable source of information for HIA assessment. The Grey Literature Network Service defines grey literature as "information produced on all levels of government, academics, business and industry in electronic and print formats not controlled by commercial publishing i.e. where publishing is not the primary activity of the producing body." Technical and scientific reports, data reports, working papers, white papers from government agencies, research organizations, and industry are all examples of grey literature. Examples of grey literature include:

- Paying With Our Health: The Real Cost of Freight Transport in California. The Pacific Institute.
- Land & People: Why Kids Need Outdoor Play. The Trust for Public Land.
- Life and Death from Unnatural Causes. Alameda County Public Health Department.

### 5.1.2 Community health, environmental and social indicators

Indicators can be used to detail existing health and social conditions in a community and provide a basis for impact analysis. An indicator is something measurable, and the collection of health, demographic, social, and environmental indicators is a key part of assessment. Understanding baseline conditions is instrumental for judging the potential impacts of a project, plan or policy on health. Good indicators accurately reflect conditions of interest,

are understandable, convey meaning, are measured over time, and motivate change. Spatial analysis (e.g., GIS mapping) can be valuable in illustrating existing health conditions and their distribution in communities – and often provide a mirror for users to understand their local context.

HIA uses community indicators of population health status to: prioritize issues for analysis in the scoping phase; describe existing health-related conditions in the assessment phase; and make predictions of the impacts of policies, plans, or projects in the assessment phase. If you have identified important community indicators for your community, you can gather the data about current conditions for each of the indicators, and then review a development plan or proposed policy to see how it will change the health conditions related to these indicators.

Examples of indicators include:

- Number of traffic injuries at an intersection
- Number of alcohol outlets in a neighborhood
- Amount of affordable housing units built
- Minimum wage in a municipality

Potential sources of indicator data include:

- United States Census Bureau, American Fact Finder: population data on demographics, social and economic characteristics, at state, county, city, zip code, census tract and block level
- Centers for Disease Control, Behavioral Risk Factor Surveillance System: the largest, on-going telephone health survey, tracking health conditions and risk behaviors in the U.S.; data are collected monthly
- Public Agencies: Public health, planning, environmental, and transportation agencies

The San Francisco Department of Public Health's Sustainable Communities Index includes over 120 indicators of healthy development. This type of comprehensive indicator tool that is regularly updated can be extremely useful in Health Impact Assessment. Available at: http://www.sustainablecommunitiesindex.org/.

Several cities and states have developed comprehensive indicator systems specifically for monitoring health conditions. These include:

- King County, WA: Communities Count, www.communitiescount.org.
- Connecticut: Healthy Equity Index, www.cadh.org.

Appendix E includes an extensive listing of potential HIA data and related sources. Appendix F includes health indicators in land use planning. Below are some exercises that involve indicators and demonstrate their use.

Indicator example 1: Number of pedestrian injuries

In 2007 in downtown Centerville, a fictional town in rural California, there were 39 pedestrian injuries due to collisions with cars or trucks. The Centerville City Council is considering two proposals to improve pedestrian safety:

6. To close downtown to motor vehicle traffic from 4 - 7 pm every day except Sunday; and
7. To widen the streets and make the most congested streets one-way.

How would either of these alternative proposals impact pedestrian injuries? Use information from health literature to inform your thinking.

Indicator example 2: Living wage

The current average wage in Mapleton, CA is $16.40 per hour. Studies show that with average housing and transportation costs it is necessary for one adult with one child living in Mapleton to make $21.20 per hour in order to afford their basic needs. The Mapleton Town Council is supporting policies that entice a big box retailer that typically pays under $10 per hour to locate in Mapleton. How will this impact the average wage? Through what pathways will this then impact health outcomes?

### 5.1.3 Regulatory criteria, standards, and benchmarks

Local data can often be compared to regulatory criteria, standards and benchmark to put those conditions in context. Some examples of standards include:

- Healthy People 2010: Reduce annual pedestrian deaths to < 1 per 100,000 population
- National Parks and Recreation Association: Recommends 10 acres of open space per 1,000 population in cities
- San Francisco Inclusionary Housing Ordinance: Requires 15% set aside for affordable housing
- LEED for Neighborhood development checklist

When available, these resources can be useful tools, as they often reflect health analysis and other policy considerations. However, certain criteria and standards may not necessarily be health protective, and there is not always agreement on the criteria that are used.

### 5.1.4 Community expertise

Profiles of existing conditions often involve some form of data coming from the community being most impacted by a project, plan or policy. Local expertise and experience is vital to the understanding of how proposed policies and plans can impact a community's health, and can be gathered in the form of surveys, focus groups, and interviews with key informants.

Focus groups with potentially impacted community members can be a source of information that may not available from other data sources. Qualitative commentary like those below can provide a

valuable local perspective that can be paired with quantitative data to complement it and give it more meaning. Examples of focus groups quotes that were used alongside paid sick days data include:

- "People get sick all the time. There's someone always sick out…..It gets passed from one person to the next."
- "I have to go to work, or I end up broke. Because I have….the rent, the rent has to be paid, the phone, money for the kids. No, I could be dying, but I have to work, I have to work."
- "Then you find yourself eating more cheaply…maybe not taking the time to nourish yourself the way you should because you're really strained on money. I go on the mac and cheese diet or the ramen noodle diet. You go into survival mode…because it's about making the money that you need at the end of the month."

Surveys with potentially impacted community members can also serve as a valuable data source. For example, surveys could provide information about:

- The health concerns of people in specific geographic areas, including areas that do not match the boundaries of specific census tracts
- Residents' perceptions of environmental conditions and community needs
- How communities have historically been and are currently included in planning processes
- Possible impacts that a proposed policy could have on people's daily lives

5.1.5 Specialized Assessment Tools

Specialized assessment tools are often used in HIA to collect targeted data and assess specific conditions that may be impacted by a project, plan or policy. For example, air quality, noise, pedestrian and bicycle environment, and food retail assessment tools have all been used in HIA. Public health department staff can be helpful sources of expertise for this type of data collection, and these tools can also be used to engage community members in the HIA and decision-making process.

The San Francisco Department of Public Health has created a number of these place-based assessment tools. Summaries of each tool are provided below. For more information, visit http://www.sfphes.org/services.

**Sustainable Communities Index (formerly the Healthy Development Measurement Tool, HDMT):** A comprehensive evaluation metric that supports the consideration of health needs in urban land use plans and projects. Comprised of three components: 1) "community health

indicator system" to evaluate community objectives and baseline neighborhood conditions, 2) "healthy development checklist" used to evaluate land use plans and projects, and 3) "menu of policy and design strategies" used to make recommendations on how to improve baseline conditions and/or meet checklist targets.

**Air Quality Measurement and Modeling:** SFDPH is attempting to assess the problem of traffic-related air pollution in a partnership with UC Berkeley School of Public Health. Using both modeling and monitoring to determine exposure to air pollutants at a local level, SFDPH is using the data to help planners and community groups understand potential exposures and craft solutions. SFDPH is interested in defining the distribution of diesel trucks and busses and their contribution to neighborhood diesel particulate exposures.

**The San Francisco Noise Model:** A set of tools including field measurements, evaluations and modeling which define current noise levels in SF communities with special emphasis on understanding the effects of traffic volumes on the acoustical environment. This information is used to assist in the implementation of State Building Code requirements associated with acoustical insulation of new residential construction.

**Pedestrian Environmental Quality Index (PEQI):** An observational survey that quantifies street and intersection environmental factors empirically known to affect people's travel behaviors. The PEQI includes five main pedestrian categories that embody important physical environmental factors: traffic, sidewalks, land use, intersections, and safety.

**Vehicle-Pedestrian Injury Collision Model:** A practical forecasting tool to predict changes in vehicle-pedestrian injury collisions associated with changes in traffic volume, land use, and additional environmental and demographic factors impacted by development. This multivariate, census tract-level model utilizes publicly available data, and variables for which data is routinely collected, analyzed and reported in local planning processes. This tool can be used in conjunction with safety countermeasures to plan to prevent future pedestrian deaths and injuries.

**Bicycle Environmental Quality Index (BEQI):** A quantitative observational survey to assess the bicycle environment on roadways and evaluate what streetscape improvements could be made to promote bicycling. The survey has 22 empirically-based indicators, each of which has been shown to promote or discourage bicycle riding and connectivity to other modes of transport.

**Retail Food Availability Survey:** A survey used to assess the availability of healthy and affordable foods within stores, and therefore within neighborhoods, to determine community food security. This survey aims to examine the availability of certain foods, all of which are components of the US Department of Agriculture's Thrifty Food Plan Market Basket, and other factors influencing food purchases within stores in low-income neighborhoods in San Francisco.

**Neighborhood Completeness Indicator (NCI):** Created as part of the HDMT, the NCI is a quantitative spatial assessment tool measuring the proximity of San Francisco residents to daily goods and services in their neighborhoods. Included in the NCI are 11 public and 12 retail services necessary to meet the daily needs of neighborhood residents and to promote increased social interaction and increased walking and biking, thereby reducing daily vehicle trips and miles traveled.

**Pedestrian Flow Model:** A practical forecasting tool which relates pedestrian activity at a street-level to modifiable environmental characteristics within developing and established mixed-use neighborhoods in San Francisco. The model is currently under development and will be used to estimate pedestrian counts on streets segments based on a set of built environment variables.

## 5.2 Conducting Impact Analysis

Described below are tools and methodologies available to analyze the health impacts of different planning and policy decisions. You will note that many of these tools and methods overlap with how you collect data for your baseline conditions assessment described above. The goal here is to use theory, baseline conditions, and population concerns to judge potential impacts resulting from the project, plan, or policy under review. In doing so, consider evidence that supports and refutes health impacts and assess affects by income, race, gender, age, and place.

Regardless of the tools and methods used, create a table (see table 6 for example) that clearly articulates impacts to various scoping categories, including direction of impact, magnitude of impact, severity of impact, likelihood of impact, and distribution of impact. See definitions for these variables below.

- If proposal impacts differ based on proposal phase (e.g., construction, production, decommissioning), create separate impacts table for each phase and label them with the appropriate proposal phase.
- If possible, in a narrative format, also speak to:
    - Nature of impacts (e.g., are impacts direct or indirect?)
    - Geographical variations in impacts (e.g., localized, community-wide)
    - Strength and quality of evidence (e.g., high quality quantitative and/or qualitative evidence, not very good quality evidence)
    - Duration of impact (e.g., permanent, temporary)

| Table 6. HIA Impact Analysis Summary of Findings | | | | | |
|---|---|---|---|---|---|
| **Health Outcome/ Determinant** | **Direction** | **Magnitude** | **Severity** | **Likelihood** | **Distribution** |
| | | | | | |
| | | | | | |
| | | | | | |

Responses to use in above table:

- Direction of Impact:
  - Positive = Changes that may improve health
  - Negative = Changes that may detract from health
  - Uncertain = Unknown how health will be impacted
  - No effect = No effect on health
- Magnitude of Impact:
  - Low = Causes impacts to no or very few people
  - Medium = Causes impacts to wider number of people
  - High = Causes impacts to many people
  - *Note that this is relative to population size*
- Severity of Impact:
  - Low = Causes impacts that can be quickly and easily managed or do not require treatment
  - Medium = Causes impacts that necessitate treatment or medical management and are reversible
  - High = Causes impacts that are chronic, irreversible or fatal
- Likelihood of Impact:
  - Likely = it is likely that impacts will occur as a result of the proposal
  - Possible = it is possible that impacts will occur as a result of the proposal
  - Unlikely = it is unlikely that impacts will occur as a result of the proposal
  - Uncertain = it is unclear if impacts will occur as a result of the proposal
- Distribution of Impact:
  - Name subpopulation impacted more (e.g., "low-income residents impacted more"; "Blacks impacted more") or "equal impacts"

## Impact Analysis Tools and Methods

**Empirical research**: Existing evidence from peer-reviewed research and other public health studies can provide the basis for predictive analysis used in HIA. For example, one study provided a statistic for how many vehicle miles are traveled in rural counties compared to urban counties in California. In a HIA conducted in Humboldt County, CA, researchers applied the statistic to compare future increases in vehicle miles traveled under various growth scenarios (e.g., compact urban growth vs. sprawling rural growth).

**Original epidemiological evidence**: While resource intensive, practitioners can conduct original research to predict health impacts. For example, the San Francisco Department of Public Health

and Human Impact Partners conducted an original analysis of National Health Interview Survey data to illustrate correlations between paid sick days and hospital Emergency Department use.

**Quantitative forecasting**: Quantitative forecasting can provide an estimate of risk or hazard from exposure based on available data. To develop a quantitative forecasting model and use it to predict impacts, one typically needs measures of baseline and future exposure and an exposure-response relationship (or "dose-response"). Dose-response relationships are typically derived from experimental or epidemiological studies. Table 7 includes examples of quantitative forecasting and modeling that has been used in HIA.

It is not always possible, feasible, or desirable to quantitatively predict health effects: methods and resources may not be available and the HIA leads should consider whether quantitative forecasting is aligned with the HIA goals.

**Table 7. Examples of Quantitative Forecast Modeling in HIA**

| Outputs | Inputs | HIA and Subject | Data and Tools Used |
|---|---|---|---|
| Changes in vehicle-pedestrian collision frequencies | Expected changes in land uses, transportation uses, and demographics | - Eastern Neighborhoods Community Health Impact Assessment.<br>- Conducted on a rezoning and area plan, San Francisco, CA | • San Francisco Vehicle-Pedestrian Injury Collision Model (Wier, 2009)<br>• San Francisco County Transportation Model (SFCTA, 2009)<br>• Estimated population and vehicle trip changes |
| - Ambient particulate matter concentrations<br>- Ambient sound levels<br>- Traffic attributable premature mortality rates<br>- Noise attributable sleep disturbance and annoyance | - Highway traffic volumes<br>- Train frequencies<br>- Air and noise emissions frequencies | - Railroad Ave. Station Area Specific Plan Health Impact Assessment.<br>- Conducted on a transit-oriented development plan, Pittsburg, CA | • Federal Highway Administration Traffic Noise Model<br>• CAL2HQHCR Air Quality Dispersion Models<br>• Highway traffic volumes<br>• Meteorological data<br>• Commuter train noise measurement |
| Wage-related changes in: | - Proposed wage increases | - Estimation of Health Benefits | • Epidemiologic studies on income and health and child development |

| | | | |
|---|---|---|---|
| - Adult longevity<br>- High school graduation rates<br>- Teenage pregnancy | - Baseline wage and household income | from a Local Living Wage Ordinance.<br>- Conducted on a proposed policy to pass a living wage, San Francisco, CA | outcomes<br>• Bureau of Labor Statistics on wages and income |
| - Changes in caloric value of meals<br>- Expected change in population weight gain | Number of chain fast food restaurant meals served | - Menu Labeling Ordinance HIA.<br>- Conducted on proponed menu labeling law, Los Angeles, CA | • National fast food restaurant meal consumption data<br>• Observations studies on impacts of calorie labeling on food purchasing behaviors<br>• Data relating meal calorie reduction to weight |
| Changes in:<br>- Greenhouse gas emissions<br>- Particulate matter emissions<br>- Fatal collisions<br>- Fuel consumption | - Baseline highway speed and traffic volume distribution<br>- Expected changes in highway speeds | - Maximum speed limit reduction HIA.<br>- HIA on reducing speed limits, State of California | • CA Department of Transportation highway traffic database<br>• Department of Energy fuel economy data<br>• CA Air Resources Board EMFAC 2007 Emissions model<br>• Empirical studies on changes in speed limits on injury highway speeds and injury rates |

**Spatial Analysis**: As stated above, spatial analysis can be very valuable in showing existing health conditions, such as the presence or absence of parks in a community, or the location of truck accidents. In the Humboldt County HIA, GIS was used to quantify how much of the county's population was close to a number of community resources. For example, the number of people within 2 miles of a public park was calculated. This calculation served as a baseline indicator for a quantification of how many more people would be within 2 miles of a public park if future growth was focused in urban areas versus rural areas.

Using different types of analysis together can support HIA findings. For example, survey results about diet and retail use can be combined with GIS maps of local food retail and literature about the links between nutrition and health outcomes to support predictions about how a policy or land use plan may impact a community's access to healthy food.

## Validity, significance and disproportionate impacts

A complete HIA should include exploration of unequal negative impacts and a discussion of the validity of judgments and significance of the impacts. Stakeholders should be offered an opportunity to critique the validity of HIA findings before a final report is produced and valid critique should be addressed in the final HIA.

**Validity.** Validity of judgment in HIA rests on whether the conclusion is credible, based on sound scientific evidence, acknowledges uncertainty, and is transparent. Validity does not require establishing a cause and effect relationship, but instead uses available knowledge and theory to make reasoned judgments about the future (Veerman et al, 2007).

Principles for ethical use of evidence are outlined in the International Association of Impact Assessors HIA Practice Principles (Quigley, 2006), and examples of how HIAs have acknowledged limitations are included in A Guide for Health Impact Assessment (Bhatia, 2009). The lack of robust formal scientific evidence or an established cause and effect relationship should not preclude reasoned, experience-based predictions. It is quite possible to make informed judgments of health effects based on available information while recognizing data and evidence limitations.

**Significance.** There are two areas of significance of health impacts: objective characteristics and social significance. Objective measures of significance might include certainty of whether the impact will occur, how large the impact is, if it's a negative or positive impact, the intensity of the impact over time and space, whether it's reversible or permanent, or can be mitigated; and whether the impact is cumulative or adds to other impacts on a population.

Judgments of social significance might include adversity to risks and relative value of individual or collective risks. These types of judgments may vary quite a bit between populations, and it is not typically the role of the HIA team to make these judgments. Participatory processes outside of the HIA assessment stage are a better avenue for discussions and judgment of social significance.

**Disproportionate impacts.** HIA is explicitly used to prevent public policies from creating or exacerbating health inequities, or systematic disparities in health status between groups with different social advantages (Braveman, 2003). There are four factors to analyze in determining whether a project or policy will cause adverse health effects disproportionately:

- Will the project or policy effect a vulnerable population (e.g., low income, elderly, population of color)?
- Will the effect of a project or policy on a specific population have a larger impact than it does on the general population?

- Will the effect contribute cumulatively to pre-existing adverse conditions or exposures?
- Does the population of concern have attributes that mediate or exacerbate the effect of the project or policy (e.g., does a community rely on subsistence fishing in a river where a coal plant is being located)?

Below are five exercises you can use to practice how to predict health impacts of projects and policies. Answers can be found in Appendix G. Exercises 1 and 5 came from an earlier version of this toolkit. Exercises 2 and 4 are from San Francisco Department of Public Health's training in Health Impact Assessment. Exercise 3 was derived from analysis done by Human Impact Partners in the Humboldt County General Plan Update HIA.

## Assessment Exercise 1. Estimating the Health Benefits of a New Park

Many studies make a compelling case about the health benefits of providing accessible public parks (see table below). For example, a Centers for Disease Control and Prevention (CDC) report found that enhanced access to spaces for physical activity resulted in 25% more people exercising 3+ days per week (CDC, 2001). Another recent study found that for each additional park space within a half mile of a young girl's home, physical activity increased 2.8% (Cohen et al, 2006). Park features, such as lighting and other amenities (e.g., track, basketball courts, playgrounds, etc.) are also associated with increased physical activity (Transportation Research Board Institute of Medicine of the National Academies, 2005). Increases in physical activity have been linked to numerous health benefits including reductions in premature mortality; the prevention of chronic diseases such as diabetes, obesity, and hypertension; and improvements in psychological well-being (Transportation Research Board Institute of Medicine of the National Academies, 2005).

Progressive city leaders in the City of Foresight, California proposed a bond measure to fund the acquisition of land and development of new parks, and voters overwhelmingly approved the measure. Neighborhood leaders representing residents of the central business district advocated that funds be prioritized for a new 10-acre park adjacent to their neighborhood. The district is home to diverse groups of people including families with children and seniors. The average incomes in the area are low and less than 25% of the current residents own cars. The district currently does not have a neighborhood park. They have recruited you to document the health impacts of their proposal in order to support their advocacy efforts.

**Questions:**

1. Identify findings from the literature below about the potential health impacts of increasing access to a public park.
2. What factors might modify these potential impacts, either positively or negatively?
3. Based on the studies listed below, is it possible or reasonable to quantify the benefits that the proposed park would have on rates of physical activity for the local population? If so, what other data would you need to estimate such benefits quantitatively?
4. What other conditions might need to be addressed in the area in order to create a successful neighborhood park?

| Research Associating Park Access with Physical Activity and Health Outcomes | | | | |
|---|---|---|---|---|
| **Study Population** | **Environmental Measure** | **Health Outcome** | **Authors** | **Year** |
| Adults aged 18 and over in Georgia | Park access in 10 minutes walking distance | 52% of adults within 10 minutes of park met physical activity standards vs. 37% who lived further away | Powell, et al | 2003 |
| Senior citizens in Tokyo | Access to green space and tree lined streets | Increased longevity | Takano, et al | 2002 |
| Review of research done on various study populations | Increased access to activity spaces (gyms, paths, etc) | 48% of people reported more frequent physical activity | Kahn, et al | 2002 |
| Boys & girls aged 4 - 7 years old in Erie County, NY | Park and recreational areas within ½-mile of home | For every 1% increase in park space, there was a 1.2% increase in physical activity | Roemmich, et al | 2006 |
| 6th grade girls from DC, MD, SC, MN, LA, AZ, CA | Parks within ½-mile of home, type, number, and specific park amenities | For each additional park, physical activity increased 2.8% | Cohen, et al | 2006 |

## Assessment Exercise 2. Judging the Impacts of Repealing Condo Conversion Protections

To protect rental housing affordability, many larger cities have passed laws limiting "condo-conversions", or the conversion of rental housing to condominiums for ownership. Typically under these laws, there is a limit to the number of condo-conversions that may occur in any one year and/or the property-owner must pay a fee that supports publicly financed affordable rental housing when a condo-conversion takes place.

You are a HIA practitioner in a place where there is a strong demand for all types of housing, a short supply of vacant housing, and escalating housing costs. To help meet the demand for ownership housing, a City Councilmember has proposed repealing your city's condo conversion law. The proposed policy change is supported by property-owners and real estate agents but opposed by tenant rights and affordable housing advocates. Another Councilmember, who was formerly a nurse, is concerned about the health impacts that the proposed policy would have on the availability of affordable rental housing, and how that would impact poor families and the elderly. This Councilmember estimated that repealing the condo-conversion law would result in 500 new condo-conversions per year, and that only 10% of current tenants would be able to purchase the units as condominiums. The Council would like you to conduct a study of the likely health impacts of the proposed repeal of the condo-conversion law. A hearing of the matter is scheduled in one month.

**Questions:**

1. What are the possible health impacts of the repeal of the condo-conversion law? Use Appendix C, the pathway diagram about a housing policy change, as a reference.
2. What populations might be most vulnerable to these impacts?
3. What are some of the potentially hidden costs to the City of the repeal?
4. What evidence might you obtain relatively quickly to inform your judgments?
5. If you had more time and resources, what else might you do to study this issue?

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## Assessment Exercise 3. Predicting Changes in Vehicle Miles Traveled

Variation in vehicle miles traveled (VMT) affects:

- Air quality: which impacts respiratory diseases and premature mortality;
- Physical activity: increases in time spent driving are associated with decreased rates of physical activity, and sedentary lifestyles have health implications such as obesity, diabetes, heart disease, and cancer;
- Automobile accidents: higher vehicle volumes on city streets can lead to more pedestrian injuries and fatalities;
- Resources available for basic needs: the high costs associated with owning a car can impact how much money people have available for other basic needs that are essential for health, such as nutritious food, high-quality housing, and health care. Monthly car payments, insurance, gas, maintenance and repair, parking, and other fees, make car ownership costs the second largest household expense in the US. The average household spends almost as much on their cars as they do on food and health care combined for their entire family.

The (fictional yet not atypical) state of Autovia is known for its car-loving culture and vast freeway systems. In light of increasing vehicle-generated air pollution throughout the state, as well as the growing prevalence of asthma among young children who live near highly trafficked roadways, Autovia lawmakers have just proposed legislation that would implement a substantial gas tax to discourage residents from driving. Revenue from this tax would be used to fund health care centers around the state that serve and treat children with asthma.

You have been hired to conduct a HIA on this proposed gas tax policy. Because you know that VMT is an important determinant of health, you would like to estimate the reduction in VMT that might result from this policy. Your research has found that the degree to which Autovia residents would change their driving behaviors in reaction to this policy depends on where in the state they live. You have the following information:

- Total driving population (excluding seniors and children who don't drive) of all rural counties in Autovia = 5 million
- Current average VMT per driver per year in rural counties = 40
- Total driving population of all urban counties in Autovia = 1 million
- Current average VMT per driver per year in urban counties = 25
- There are public transit options, bike lanes, and an adequate pedestrian infrastructure in urban areas of the state, but no public transit options or bike lanes in any of the rural counties.
- According to a limited (not necessarily statistically significant) survey of approximately 400 community members that you conducted as part of this HIA, if this policy were implemented, 35% of urban drivers would completely stop driving and instead use public

transit or a bicycle as modes of transportation. In contrast, only 5% of rural drivers reported that they would stop driving.

- There is one major city in the state and the rest of the state is rural. In general, average household incomes in rural counties are lower than those in urban counties.

**Questions:**

1. Approximately how much will total VMT in Autovia change per year, in response to this proposed gas tax policy?
2. What are possible sources of error in this estimation?
3. What are ways the estimation might be improved and what data might you need to do a better analysis?
4. What populations would the gas tax policy impact the most? In what ways?
5. Do you think it is appropriate for the gas tax revenue to fund treatment for asthmatic children or do you have alternative ideas about how the revenue should be spent?
6. What other policies might reduce VMT in order to improve health?
7. What other measures of driving might you look at, and what are benefits and drawbacks of each? (For example, total VMT in the state or VMT per capita? Number of vehicle trips? Vehicle volume? What scale?)
8. With more information, what are some other interesting measures of health outcomes you could consider assessing based on this proposed gas tax? For example, how much would reducing VMT alleviate some of the negative impacts discussed in the first paragraph?

## Assessment Exercise 4. Paid Sick Days and the Prevention of Influenza

A new influenza strain has been predicted to infect 34% of the US population, and ultimately affect the lives of 68% of the US population. Transmission of this flu occurs through air and direct contact with infected individuals. It is estimated that 30% of the transmission of the flu occurs in homes, 37% outside the home, including in schools and workplaces, and 33% in other community settings (Ferguson et al, 2006).

Minimizing social contacts between individuals can be highly effective in controlling the spread of flu. This can be achieved by measures such as having a sick person remain at home when symptomatic, quarantine of an infected person and his/her family members for a specified period, isolation of infected individuals, closing schools and workplaces, and limiting travel. Studies predict a reduction in incidence of flu infections with even modest measures to reduce contact, but the effectiveness of these interventions depends strongly on compliance.

| Modeled Effects of Social Distancing Measures on Attack Rates of Pandemic Influenza | | | | | | |
|---|---|---|---|---|---|---|
| **Study** | **Intervention Measure** | **Context** | **Reproductive Number*** | **Prevalence of Compliance** | **Base Attack Rate (cases / 100 people)** | **Intervention Attack Rate (cases / 100 people)** |
| Ferguson (2006) | Quarantine household contacts of symptomatic individuals | US pop. | 1.7 | 50% | 27 | 23 |
| Germann (2006) | Voluntary social distancing measures | US pop. | 1.6 | Not specified | 32.6 | 25.1 |

*Reproductive # is the mean number of secondary cases that would be infected by a single case.

A national piece of legislation guaranteeing all workers the ability to accrue a total of nine paid sick days annually would increase the likelihood of compliance with voluntary and mandatory social distancing strategies. The Senator introducing the legislation has asked the Director of the CDC to conduct a HIA to show the impacts of the legislation on flu morbidity and mortality. As the Surgeon General's influenza expert, you have been asked to make some predictions about the impacts of the proposed paid sick days policy.

**Questions:**

1. What can you say about the impacts of a guaranteed paid sick days policy based on the findings from the above two modeling exercises?
2. What are the main limitations of the studies for answering the Senator's questions?
3. What research or studies would you recommend to better study the effects of the proposed policy?

## Assessment Exercise 5. Forecasting Pedestrian Injuries based on Vehicle Volume

The 'road safety function' describes the relationship between vehicle volume and accident frequency for a specific roadway. Conceptually, the road safety function is like an exposure-response function, and one can use the baseline rate of pedestrian injuries and the change in vehicle volume to predict a change in collision frequency on a road or set of roads. Based on observations in several locations, the frequency of vehicle-pedestrian collisions increases proportional to the square root of vehicle volume (Lee & Abdel-Aty, 2005).

$$\text{Pedestrian injury frequency} = \text{"Constant"} \times (\text{Average annual daily trips})^{0.5}$$

Assume that you have analyzed traffic patterns on the main roads and intersections at the site of a proposed high-rise development. The analysis shows that the annual average daily traffic volumes number 20,000 on the roads bordering the project and, cumulatively, these roads experience about 10 pedestrian-vehicle collisions every five years. Furthermore, the analysis predicts that the development will contribute 5,000 new daily trips to these roads. Using the formula below, predict the number of pedestrian-vehicle collisions expected to occur due to additional project-generated traffic trips.

$$PVCR_{future} = (AADT_{future}/AADT_{current}) \times PVCR_{current}$$

PVCR = Pedestrian-vehicle collision rate (collisions/year)
AADT = Average annual daily trips

**Questions:**

1. What is your estimate of future pedestrian injuries?
2. What assumptions do you rely upon in making this estimate?
3. What other changes associated with the project may affect pedestrian collisions?
4. What information might help you make a better estimate?

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# Chapter 6. Recommendations

**In this chapter, you will learn:**

- The objective, essential tasks and key points of the Recommendations stage of HIA
- Criteria to use in developing recommendations
- Challenges and responses in developing recommendations

## Objective

To provide evidence-based recommendations to mitigate negative and maximize positive health impacts.

## Essential Tasks

- For each impact identified, propose evidence-based recommendations gathered from experts and prioritized by HIA stakeholders.

## Key Points

**Identifying strategies for a project or policy decision to respond to health concerns is a key function of Health Impact Assessment.** HIA may identify:

1. *Recommendations* – alternative ways to design a project, plan, or policy, its location or timing to benefit health; or
2. *Mitigations* – management strategies to lessen anticipated adverse health effects of a decision.

**Developing recommendations requires a clear understanding of the proposed project, plan, or policy,** and knowledge about the policy's implementation and design practices.

**Recommendations can include** alternatives to the decision; modifications to the proposed policy; program or project, or mitigation measures. These recommendations may be used for monitoring, reassessment, and adaptations to help manage uncertainty in impact assessment.

**Recommendations should be supported by evidence of feasibility, efficiency, cost-effectiveness, and political acceptability.** Communication with stakeholders can be used to gauge buy-in or feasibility.

**Recommendations may require skills and expertise from outside the HIA team,** underscoring the need for interdisciplinary collaboration.

**Ideally, an implementation plan should be developed for each recommendation** presented in the HIA including, for example, the responsible agency and timeline.

**Potential impacts of recommendations could also be assessed as part of the HIA.** Recommendations should not introduce any negative health impacts.

**Ideally, every recommendation should be tied to indicators that can be monitored.** This is also a great way to ensure that planning for monitoring is included throughout the process.

**Recommendations are not always appropriate.** An HIA of a policy may simply state the potential benefits or harms without recommending changes if none are needed to promote positive health outcomes, or for example, when a HIA is informing a project with discrete choices, and no opportunity for alternatives to be considered.

**The following criteria should be used in developing recommendations:**

- Responsive to predicted impacts
- Specific and actionable
- Experience-based and effective
- Enforceable
- Can be monitored
- Technically feasible
- Politically feasible
- Economically efficient
- Do not introduce additional negative consequences
- Relative to the authority of decision-makers

There are many challenges in developing recommendations, and often these translate into criticisms. Responses to challenges in developing recommendations include:

| Challenge | Response |
|---|---|
| Validation of proposed recommendations and impacts on health | Use best available evidence |
| Limited knowledge of potential recommendations | Invite subject-area expert input |
| Cost element to implement recommendations | Cost of not implementing in terms of health outcomes and associated expenses |
| Coming to consensus on recommendations | Develop stakeholder outreach process to "test" recommendations |

# Chapter 7. Reporting

**In this chapter, you will learn:**

- The objective, essential tasks and key points of the Reporting stage of HIA
- Types of HIA report formats
- The importance of developing a communications plan
- Tips for writing comment letters on a Environmental Impact Assessment

## Objective

To develop the HIA report and communicate findings and recommendations.

## Essential Tasks

Develop the HIA Report:

- Develop a consensus among stakeholders regarding key findings and recommendations
- Determine the format and structure of the report
- Write the report

Communicate HIA Findings and Recommendations:

- Develop a communication plan
- Prepare communication materials to suit the needs of all stakeholders in the decision-making process
- Use communication materials to inform stakeholders and decision-makers

## Key Points

**An HIA report summarizes key health issues** the proposal could impact and provides recommendations to improve health outcomes and determinants.

The HIA report:

- **Identifies all HIA participants** and their contributions, including the HIA sponsor and the funding source
- **Documents the process** for each HIA step
- **Provides details for health issues analyzed,** including: available scientific evidence, data sources and analytic methods and rationale, existing conditions, results, predicted health impacts and their significance, corresponding recommendations for improving health, and limitations of the HIA

- **Should be made readily accessible for public review and comment.** HIA practitioners should address comments and criticisms formally and/or in report revisions before finalizing report

**When available, regulatory processes** (e.g., Environmental Impact Assessment) can be used to report findings and recommendations.

**Summarize the full report** into clear, succinct messages that allow all stakeholders to understand, evaluate, and respond to findings and recommendations.

**Frame messages to help people relate to the information.** Frames help people make sense of information by triggering familiar concepts.

**Develop messages regarding** overall magnitude of health impacts, impacts on vulnerable populations, feasibility of solutions, and public concerns.

**Interest groups and media can support effective translation of results into action.**

**Good communication** throughout the HIA process can engage stakeholders and lead to greater acceptance of findings and recommendations.

**Report and communications formats include:** formally structured written reports, comment letters on environmental impact assessments, letters to decision-makers, fact sheets, public testimony, presentations to key audiences, panel discussions, press conferences.

Table 8 illustrates various types of reporting formats that HIAs have taken.

**Table 8. Types of HIA Reporting**

| Health Impact Assessment | Method of Communication |
|---|---|
| Humboldt County General Plan Update HIA | Newsletter; Powerpoint presentation to Supervisors |
| Concord Naval Weapons Station Reuse HIA, Executive and Chapter Summaries | Briefing paper |
| SFDPH Comment on the Scope of the Trinity Plaza Redevelopment Draft Environmental Impact Report | Comment letter |
| Bhatia, R., Katz, M. 2001. Estimation of Health Benefits from a Local Living Wage Ordinance. Am J Pub Health. 91(9):1398-1402. | Peer-reviewed publication |
| Oregon Transportation Policy HIA | Fact sheet |

Appendix H is a template for developing an HIA report. This is only one format, among many, for communicating the results of a HIA. For other examples of completed HIA project reports, see https://sites.google.com/site/ucbhia/ or http://www.humanimpact.org/projects/hia-case-stories/

## Developing a Communications Plan

The HIA team must work together to develop a plan to communicate HIA findings and recommendations in ways that will be compelling to decision-makers and to those who can influence decision-makers. Elements of an effective communications plan include:

- Developing key met.ssages (framing)
- Targeting messages to specific audiences (stakeholders, decision-makers)
- Developing materials for communication (letters, fact sheets, testimony, videovoice)
- Identifying spokespeople
- Identifying methods of communication

**Stakeholders should be involved from the start.** Stakeholders should agree on communication format and structure for HIA findings and recommendations. They should also designate who will be responsible for preparing materials and transmitting communications.
HIA findings and recommendations should be prioritized, and developed into clear, succinct messages, highlighting for example:

- Overall magnitude of health impacts (both positive and negative)
- Impacts to the most vulnerable populations
- Perceived public concern
- Feasibility of recommendations

If the object of the HIA is a land use planning project, the HIA findings about links between the proposed project activities and health can be submitted as a comment letter in regulatory processes such as Environmental Impact Assessment (see Chapter 10 – Intervention Strategies). If the HIA team is involved in the early stages of a land use planning project, HIA findings can be communicated directly to the Planning Department, or to planning consultants. Community groups delivering HIA findings directly to City Council members can be a powerful way to influence the decision-making process.

A policy HIA can communicate findings about the links between the policy decision and health impacts as testimony with legislative committees, in lobbying meetings with staff or the elected officials themselves, or to the media in an effort to make a public statement that will convince decision-makers to support policies that benefit health.

**Figure 4. Tips for Writing a Comment Letter on a Environmental Impact Assessment**

- Include a short discussion of State (e.g., CEQA) or Federal (e.g., NEPA) regulations and case law requiring that lead agencies study and where possible mitigate health impacts.
- Describe health impacts of concern and the pathways between the agency action, potential physical changes in the environment, and related adverse health impacts nexus, identifying the environmental changes responsible for health impacts.
- If there are published thresholds, standards, or guidelines, include this information and citation.
- Describe available data on health, related to the impacts of concern, for the area affected by the public agency action.
- Include specific documents, especially from government agencies such as the Environmental Protection Agency, that cite the agency's position on health impacts related to the issue.
- Identify specific methodologies that the lead agency could use to study health impacts and provide examples from environmental assessments and other published work if available.
- Identify ways that the health impacts could be mitigated and, if possible, provide evidence that supports the feasibility of mitigations.
- Identify alternative scenarios that would not result in health impacts.
- Remember that it is the responsibility of the lead public agency and not the commenter to conduct the environmental health analysis.

For an example of a comment letter written using HIA results, see Appendix I.

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## Communication Exercise 1. Implementing a Pedestrian-Only Zone

**Background:** You are a member of the Chamber of Commerce of the town of San Geraldo. In the last five years, traffic congestion in San Geraldo has increased as the popularity of the town has grown.

The town is considering a proposal to create a pedestrian-only zone in the 2-acre downtown. The downtown surrounds the town square, which is surrounded by stores and restaurants. To leave time for deliveries, the pedestrian-only law would be in effect between 11am and 9pm. The proposal includes a plan to operate shuttles from parking lots outside of the square (even though there is ample parking, in most cases, 0.5 miles away from downtown). The merchants, for the most part, oppose this move because they believe it will negatively impact their businesses.

**Existing Conditions:** The most congested times in downtown San Geraldo are between noon – 1:30 and from 5:30 – 9 pm, as the restaurants draw people from miles around during lunch and dinner time. Retail businesses have grown as a result of the popularity of the local restaurants and these stores now attract customers independently of the restaurants.

There has also been an increase in pedestrian and motor vehicle collisions. In 2001 there were 29 injuries with 0 fatalities and in 2006 there were 42 injuries with 2 fatalities. A survey undertaken by the Chamber of Commerce of current San Geraldo residents shows that they no longer like to come downtown because it's too crowded, stressful, and they can't find parking. Also, some stated that they don't like to dine in outdoor eateries because of the noise and smell of traffic fumes.

**Health impacts analyzed:** The Chamber of Commerce decided that they wanted to find out what the health implications of establishing a pedestrian-only zone in downtown San Geraldo would be and commissioned a HIA of the proposal. HIA consultants recently provided the Chamber with the following findings:

- Air quality – The HIA measured existing levels of particulate matter released from automobile and truck emissions, and modeled future levels of emissions based on the pedestrian-only zone proposal. The findings were that 2,100 physician visits, 805 emergency room visits, and 14 premature deaths due to respiratory illness/disease could be avoided annually if the proposal was adopted.

- Impact on retail income – Based on responses to the survey conducted by the Chamber of Commerce, the HIA consultants developed and administered their own survey and key informant interviews with merchants and retailers, and also conducted a small phone survey with tourists. Findings of these surveys and interviews showed that if the proposal was implemented, local residents' return to businesses and restaurants in the downtown would

generate the equivalent of $400 per year per resident, while tourism would decline but not desist. 76% of tourists felt they would still return to the town.

- Physical activity – Based on results of the survey of local residents combined with findings from literature reviews, the HIA estimated that on average, town residents would engage in approximately 30 minutes more physical activity per week if the pedestrian-only zone proposal was implemented.

- Pedestrian Injury – The most striking HIA findings were in regard to pedestrian injury. Using a local adaptation of San Francisco's Pedestrian Injury Model, if the proposal was implemented, the rate of pedestrian injury would decrease to 18 injuries and 0 fatalities – less than the 2001 level.

Question 1: Deciding how to report the HIA findings
How will you, as a member of the Chamber of Commerce, communicate the findings of the HIA? Keep in mind, not only are you interested in convincing the decision-makers to back this plan, but you must also gain the support of the public, tourists and visitors to San Geraldo who have helped make your city so economically vibrant.

Question 2: Write a letter to City Council
Use the template below to create a letter to the City Council of San Geraldo. You are representing a Neighborhood Association near downtown. Some things to keep in mind: some members of the current Council consider themselves to be environmental stewards, and a minority support local merchant's concerns over those of other constituents. Almost all of the City Councilmembers have lived in San Geraldo their whole lives.

Question 3: Identify information to include in 5 power point slides explaining one of these impacts

- Decreased traffic leading to improved air quality, and thus decreased respiratory disease
- Decreased traffic leading to fewer pedestrian injuries
- Increased physical activity, and thus decreased prevalence of chronic disease
- Increased retail use

What facts or graphs would be useful to include in the slides? What kinds of existing conditions data would you highlight? Would pictures help? Who should deliver this presentation?

## Template for City Council Letter

San Geraldo City Council
City Hall – 3rd floor
128 Main Street
San Geraldo, CA 98007

Date: _____

To the City Council Members of San Geraldo,

Who are you, who do you represent, what are you commenting on, what is the main point of your commentary?

_____

_____

Why did your group perform a HIA? Who was part of your group? What is the background?

_____

_____

How did you perform the HIA? Briefly describe what primary or secondary data you collected.

_____

_____

What were the HIA findings? How would implementation of the pedestrian-only policy align with the City Council's goals?

_____

_____

_____

What is your recommendation to City Council? What do you support? What are you asking City Council to do? Be very specific and put a time frame on your request. (e.g., On July 9, please vote to make downtown a pedestrian-only zone).

_____

_____

Sincerely,

Head of Chamber of Commerce
Other co-authors?

CC: Who will you make sure knows that you're sending this letter?

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# Chapter 8. Monitoring

**In this chapter, you will learn:**

- The objective, essential tasks, and key points of Monitoring
- Sample questions that can be asked in Monitoring
- How to set-up a sample Monitoring plan

## Objective

To track the impacts of the HIA on the decision-making process and the decision, the implementation of the decision, and the impacts of the decision on health determinants.

## Essential Tasks

- **Track recommendation adoption,** discussion of HIA findings in the decision-making process, and how the decision-making climate for health considerations and HIA institutionalization changed as a result of the HIA.
- **Monitor decision implementation** to track whether the policy was carried out in accordance with HIA recommendations or if the project was built with HIA mitigations.
- **Monitor health determinants** and outcomes to evaluate HIA predictions.

## Key Points

**The purposes of monitoring are to:**

- Ensure the project, plan, or policy is implemented as designed
- Establish accountability by tracking how recommendations were received and acted upon
- Track and support compliance with implementation agreements, rules, and standards
- Build a better understanding of the value of HIA and demonstrate how HIA influenced decision-making
- Provide early warning of unexpected consequences and create a structure for addressing them
- Test the validity and precision of health impact predictions

**Monitoring decision impacts on health outcomes is challenging.**

**Data sources for monitoring include:**

- Media reports about the HIA or the decision-making process
- Accounts from public agencies on changes
- Agency reports on a project
- Interviews with decision-makers and stakeholders

**Consider whether useful routine monitoring information is already being collected** by agencies or organizations before proposing new monitoring plans.

**Essential elements of a monitoring plan, include:**

- Goals
- Resources to conduct, complete, and report monitoring activities
- Identification of the outcomes, impacts and indicators to monitor
- Process for collection of meaningful and relevant information (baseline, long-term)
- Defined roles for individuals or organizations
- Criteria or triggers for action, if agreed-upon mitigations or recommendations are not met
- Process for reporting monitoring methods and results and making them publicly available
- Process for learning, adaptation, and response to monitoring results

See table 9 for a sample monitoring plan template and questions.

**Indicators that could be monitored include** health outcomes (consider latency and specificity), behaviors, health determinants, and compliance process measures.

**Monitoring evaluates the impact of the HIA on the decision-making process and the results of the decision on health determinants.** HIA Evaluation is focused on the HIA process.

## Resources

Examples of monitoring from other fields:

- National Ambient Air Quality Standards monitoring and planning under the Clean Air Act
- Mitigation monitoring under the California Environmental Quality Act
- Inspection procedures for compliance of building standards
- Notification requirements for compliance of labor laws

| Table 9. Sample Monitoring Plan Template and Questions | | |
|---|---|---|
| **Monitoring Plan Elements** | **Responsible Party** | **Indicators** |
| **Background:**<br>• State the plan, project or policy evaluated by the HIA.<br>• Describe the key elements of the plan, project or policy that were analyzed by the HIA.<br>• List process and outcomes recommendations made to decision-makers. If prioritized, list in that order.<br>• List decision-makers (e.g., agencies, elected officials) involved in deciding on the plan, project, or policy.<br>• Identify 2-3 goals for the monitoring process.<br>• Identify resources to conduct, complete, and report monitoring activities, including data collection.<br>• Define roles for individuals or organizations.<br>• Identify criteria or triggers for action. | | Not Applicable |
| **Decision Outcome:**<br>• What was the outcome of the decision related to the plan, project or policy under review?<br>• Which, if any, recommendations were integrated into the plan, project or policy?<br>• Were recommendations implemented after the decision?<br>• Overall, did the final plan, project or policy decision change in a way that was consistent with the recommendations of the HIA? | | Create tracking chart where note on a quarterly basis:<br>• Whether decision was made<br>• Which recs. were incorporated into the plan, project, or policy<br>• Whether each accepted rec. was implemented as agreed to |
| **Decision Process:**<br>• To what extent did stakeholders use HIA findings?<br>• To what extent did decision-makers use HIA findings?<br>• Did the HIA inform a discussion of the trade- | | Create tracking chart that where can note on a bimonthly basis:<br>• Media<br>• Testimony<br>• Letters |

| | | |
|---|---|---|
| offs involved with a project/policy?<br>• Were discussions of connections between the decision and health evident in the media, statements by public officials or stakeholders, public testimony, public documents, or policy statements?<br>• Did the HIA help to build consensus and buy-in for policy decisions and their implementation?<br>• Did the HIA lead to interest from previously uninvolved groups?<br>• Did the HIA encourage public health agencies to participate in new roles in policy and planning efforts?<br>• Have requests for the study of health impacts on additional projects, plans, or policies in the same jurisdiction followed?<br>• Are there new efforts to institutionalize HIA or other forms of health analysis of public policy?<br>• Did the HIA lead to greater institutional support for consideration of health in formal decision-making processes? | | • Communications materials<br>• Referencing of health evidence in public documents |
| **Health Determinants:**<br>• What specific health determinants will be assessed? (e.g., air quality, noise, affordable housing, traffic calming, communicable disease – ideally, these are the health determinants related to our recommendations) | | Create tracking chart that where note on a annual basis:<br>• Whether any change in the determinant has been observed<br>• Direction of change |

## Monitoring Exercise 1. Develop a Monitoring Plan

**Step 1.** Revisit the case study you used for the Screening and Scoping stages of HIA (either your proposed project or one you chose from the scenarios). Decide on three mitigations or recommendations that the decision-makers could likely agree to. How will your group monitor the implementation of these mitigations/recommendations? Who within your collaboration should take a watchdog role to monitor the decision-making environment as well as the outcomes of the decision on community health? Complete your answers in the chart below. One example is provided to help you get started.

| Mitigation / Recommendation | Method to monitor implementation | Responsible party | Monitoring timeline | Action plan if not compliant |
|---|---|---|---|---|
| Countdown signals on pedestrian crosswalks | Observation and documentation of installation; includes dates of observation | Neighborhood group | Weekly checks until it happens | Meetings with Public Works; City Council |
| | | | | |
| | | | | |

**Step 2.** Choosing Indicators. Choose one health outcome related to your case study that your group is particularly interested in monitoring. What are the indicators that you would choose in order to monitor this outcome? How will you gather data and information about these indicators? How will you use the data and information? Discuss both positive and negative scenarios.

| Health outcome / Determinant | Predicted health impact of project/policy | Indicators to monitor | Data source | Next steps |
|---|---|---|---|---|
| Respiratory disease (including asthma) | With mitigations (air filters), reduced asthma, allergies, bronchitis, COPD | For local community impacted by the decision:<br>• Hospitalizations for all respiratory diseases, broken down by disease<br>• Days of school missed by children due to respiratory- related illness | • Public Health Dept<br>• Hospital records<br>• School records | For evidence of both health improvements and potential negative health impacts:<br>• Written report<br>• Peer-reviewed journal article<br>• Media (press release)<br>• Thank you letter |

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# Chapter 9. HIA Evaluation

**In this chapter, you will learn:**

- The objective, essential tasks, and key points of Evaluation
- How Evaluation fits into HIA as a supplementary step
- Sample questions that can be asked in Evaluation

Process evaluation is not a formal step of the HIA process, but can serve to provide valuable insight to improve the relevance and legitimacy of HIA practice, accuracy of predictions made in HIA assessment, and effective translation of HIA findings and recommendations to decision-makers. The depth and complexity of HIA evaluation results depends on scope and extent of the evaluation. In its most basic form, a process evaluation would include HIA steering committee members' evaluation of how the HIA outcomes met the goals and objectives established for the HIA in Screening and Scoping. More involved process evaluations would involve additional stakeholders (possibly outside evaluators), gather more evaluation data, and require more resources. This section of the HIA Toolkit addresses questions and tools that HIA practitioners can use in evaluation.

## Objective

To evaluate the process of conducting the HIA.

## Essential Tasks

- Establish an evaluation plan
- Delineate information that will be required for evaluation, including data sources, tools, and methods for analysis
- Ensure resources are available to conduct, complete and report evaluation results
- Identify the individual or team that will be in charge of leading the evaluation and assign responsibility for gathering data
- Conduct the evaluation
- Share evaluation results with others involved in the HIA

## Key Points

**Be clear about the focus of the evaluation.**

**During HIA scoping consider how to build evaluation into the HIA process.**

**Meaningfully include stakeholders in planning the evaluation**, including selecting the evaluation questions.

**Ways to gather evaluation data include:**

- Survey
  - Before/after focus group or other data collection process with HIA participants
  - Before/after HIA process with all stakeholders
- Key informant interviews with HIA partners/stakeholders
- Document review
- Meeting minutes and agendas
- Scoping worksheets and workplans
- Grant proposal narratives
- Email exchanges

**Evaluation of the HIA process is an important way to develop and improve HIA methods, approaches and techniques,** even though it is not included as one of the six steps of HIA. Evaluation can help:

- Provide feedback on successes and challenges, showing how HIA practice could be improved
- Assess whether the HIA met practice standards

**HIA evaluation differs from HIA monitoring** as monitoring is focused on outcomes of the decision that the HIA intended to influence, and the impacts of the decision's implementation on health determinants and health outcomes

**At times, using an evaluator outside the HIA process can be helpful in uncovering issues that the HIA team was less aware of.**

As with any evaluation, consideration of the type of data your team will want to collect and the methods of collecting it should be made long before the evaluation is conducted. For example, if your HIA team is planning to meet regularly with community residents during the process of conducting a HIA, you may want to administer a pre/post evaluation at an initial meeting during Screening, and then after the HIA report is completed. This can help you understand how the community's understanding of the connections between land use or policy decisions and health has changed. Another form of data collection could be a record of notes about how health issues were prioritized by community residents and stakeholders during Scoping.

Table 10 includes sample questions that can be used in your evaluation.

## Resources

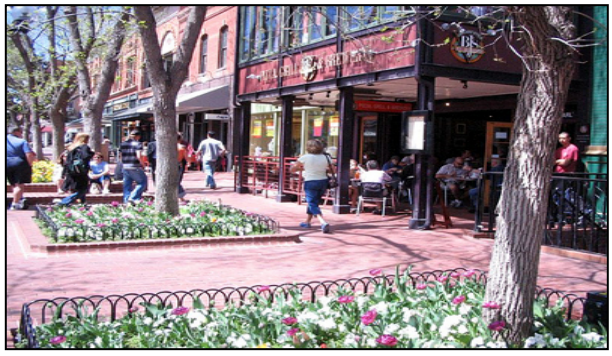
- Taylor L, Gowman N, Lethbridge J, Quigley R. 2003. Deciding if a Health Impact Assessment Is Required. NHS Health Development Agency. Available at www.iaia.org/publicdocuments/pubs_ref_material/Screening%20for%20HIA%20pdf.pdf.
- Parry JM, Kemm J. 2005. Criteria for use in the evaluation of health impact assessments. Public Health. 119:1122-9.
- Wismar M. 2004. The effectiveness of health impact assessment. Eurohealth. 10(3-4):41-3.

| Table 10. Sample Evaluation Questions | |
|---|---|
| **Screening** | • Who was involved in screening the HIA and why? Were there others who should have been involved and why?<br>• What were the reasons that the steering committee ultimately decided to conduct the HIA?<br>• Were there arguments against conducting the HIA? What were some of the reasons why it may not have been beneficial to conduct a HIA? |
| **Scoping** | • Who was involved in scoping? Were there others who would have been helpful to participate in scoping? Why?<br>• Was the completed HIA consistent with the scoping plan?<br>• What methods were used to identify and prioritize health issues during scoping? Were reasons for inclusion/exclusion documented?<br>• Which health issues did the HIA address, which were left out, and how were those decisions made? |
| **Assessment** | • Did the HIA make judgments about positive and negative health effects of the project, plan, or policy?<br>• Did the HIA assess long-term effects or disproportionate harms or benefits to vulnerable populations?<br>• Was evidence used in the HIA supported by findings in the literature?<br>• Were the potential health impacts of project, plan, or policy alternatives explored in the HIA?<br>• Did the HIA document methodology and data sources as well as assumptions and limitations of the assessment? |
| **Recommendations** | • Did the HIA identify evidence-based health-promoting design solutions, mitigations, or alternatives? Did the HIA provide analysis of the effectiveness and feasibility of these recommendations?<br>• Were efforts to mitigate potentially negative effects of the proposed |

| | |
|---|---|
| | project, plan, or policy concentrated on the impacts of the largest magnitude? If not, why?<br>• Were recommendations prioritized by the HIA steering committee? If not, why? What process was used? |
| **HIA Steering Committee** | • Was the HIA decision-making process transparent? How so? If not, what do you recommend to ensure transparency?<br>• How much time was spent on the HIA? By whom (not just those who conducted HIA)?<br>• What were the associated financial costs (e.g., salaries, travel, expenses)?<br>• What did those involved think about the process and what changes would they make if they were to do it again?<br>• To what extent was the goal of the HIA achieved? |
| **Public Engagement** | • What efforts were taken to involve affected populations in the HIA process? Were these efforts successful?<br>• Do stakeholders feel that the HIA was responsive to their interests or concerns regarding the project, plan or policy?<br>• Did the HIA utilize community knowledge and experience as evidence? In what ways? |
| **Reporting** | • Did the HIA include comprehensive documentation of the HIA process, analysis, and findings?<br>• Were stakeholders given an opportunity to review the findings and comment?<br>• How and when were recommendations delivered to the relevant decision-makers?<br>• Were stakeholders able to use HIA findings to develop or communicate their positions on policies/projects? |
| **Monitoring** | • Was a monitoring plan developed? |

**Evaluation Exercise 1. Using Process Evaluation Questions**

Reread the fictional scenario in the *Stage 4: Reporting* section exercise about the town of San Geraldo and their plan to make the town center pedestrian-only from the hours of 11 am – 9 pm. Then read the follow-up information about this decision and answer questions in the box below.



**Follow up information about the San Geraldo HIA:** The City Council voted to enact a modified version of the pedestrian-only plan on a trial basis. Starting in March 2008, San Geraldo will enact the pedestrian-only zone in the town center from 11 am – 6 pm, to be monitored and evaluated for three months by the HIA practitioners (see below). The City Council felt that the evenings (from 6pm to 9pm) were less troublesome times for congestion, although if the daytime restrictions proved to be a success they would consider extending the hours beyond 6pm.

The community engagement process included the three different surveys of local residents and merchants (one conducted by the Chamber of Commerce and two by the HIA practitioners) as well as key informant interviews. Additionally, after submitting the HIA results to the City Council, two community meetings were held by the City Council and attended by about 35 people, and the City Council held two additional meetings for public comment before the final vote on the policy. In total, approximately 100 residents and merchants came to these meetings, and a majority was in favor of the pedestrian zone. Even the restaurants-owners, who had been very opposed to the policy initially, saw the value of encouraging local residents to return to the downtown. The HIA findings were reported in the San Geraldo Express, the town newspaper, and even received some coverage in the San Francisco Chronicle due to the potential impact on tourism.

To gather data and carry out the HIA assessment, the HIA practitioners worked closely with the Chamber of Commerce as well as with the City Planning Department's pedestrian/bicycle planner, and a local non-profit dedicated to promoting bicycle use/safety. The HIA practitioners estimated that 7 weeks of one full-time staff person's time was spent on the HIA; the City Planner estimated that he spent a total of 50 hours of his time over the 7 weeks on the HIA, and the non-profit estimated that a total of 60 hours of staff time was spent on the project.

**Questions:**

1. Using the information you have about this HIA example, answer the evaluation questions in table 10 (above). The product of this evaluation should be a series of statements about the outcomes of the HIA process.
2. Are there additional questions that may be relevant to the success and value of the HIA process that are not listed in table 10? If so, please list.
3. If information to answer evaluation questions is missing, how would you propose to obtain that information?

## Evaluation Exercise 2. Developing Evaluation Metrics

Using the table below as a guide, identify metrics that you would use to answer the evaluation questions in column 1.

For example, in the San Geraldo example, how would you measure whether public health agencies are participating in new roles in policy and planning efforts as a result of their participation in the HIA process?

- One way might be to conduct an interview over the phone or in-person with a Public Health Department staff person who participated in the HIA to gauge the extent of their involvement in policy and planning efforts. Your measurement could be a narrative of your interview results, or you could quantify the results by listing the ways the Public Health Department has been involved in these processes, and developing a rating scale to indicate their level of involvement (from minimal to extensive).
- Another way might be to search news stories and City Council minutes to identify whether the Public Health Department is beginning to engage in specific policy or regulatory processes that may have originally been outside of the "traditional" health lens, such as development planning, zoning, transportation policy, and other issues.

| Evaluation Question | Metric – How will you measure success? | Source of Information |
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# Chapter 10. HIA Intervention Points & Strategies

**In this chapter, you will learn:**

- The relationship of HIA to Environmental Impact Assessment (EIA)
- Opportunities for integration of HIA and EIA
- Analysis methods where HIA can be integrated
- Intervention points in policy-making where HIA can be inserted

Residents and community organizations frequently request that public agencies conduct health analyses of proposed policies, plans, and projects. However, currently there is no law requiring that HIA be used in federal and state regulatory processes. Most HIAs conducted in the United States have been voluntary; in other words, the decision-makers and the accompanying regulatory process did not require a HIA.

## 10.1 HIA and Environmental Impact Assessment

The National Environmental Protection Act (NEPA) and similar state laws (such as the California Environmental Quality Act, or CEQA) require government agencies to analyze and disclose environmental impacts of proposed project activities, and that health impacts are included in these environmental impact assessments. Because HIA is similar and complementary to the practice of Environmental Impact Assessment (EIA), integration of Health Impact Assessment tools and methodology within EIA would be a productive and efficient way to meet the required consideration of health impacts of a proposal.

NEPA and similar regulatory laws also require government agencies to identify feasible mitigations and alternatives to avoid or reduce environmental damage and negative impacts to health, and NEPA specifically requires that environmental effects that result in adverse public health impacts be studied in an EIS. Some laws, such as CEQA, go one step further, and require adoption of feasible mitigation measures.

Many projects subject to NEPA and CEQA have significant effects on health. For example, if a city was considering whether to permit a new industrial facility in a residential neighborhood and the noise generated by the facility could pose a threat to human health, the agency would be required to include an analysis of the impacts that noise from the facility could have on human health.

However, less traditionally considered health determinants – such as access to goods/services, housing quality, and community cohesion – are often ignored in Environmental Impact Assessment.

Conducting an Environmental Impact Assessment follows a similar process to HIA. Agencies must consider and respond, in the public record, to all comments received on the Draft Environmental Impact Assessment (EIS or EIR), and include consideration of these comments in the Final Environmental Impact Statement/Report, or explain lack of action on the comment. Agencies preparing a draft environmental impact statement or report are required to consider and utilize available relevant evidence submitted during formal comment periods.

There are many entry points for integrating HIA findings specifically, and health concerns more generally, into each stage of the EIA process (table 11). See Appendix J for a FAQ on integrating HIA into Environmental Impact Assessment.

**Table 11. Environmental Impact Assessment and HIA**

| EIA Stage | Tasks and Roles of Stakeholders interested in Health |
|---|---|
| **Screening** | • Identify environmental or public health impacts that may trigger a requirement for the conduct of an EIA |
| **Scoping** | • Identify potential impacts for analysis<br>• Supply supporting evidence, data on population vulnerabilities, available methodologies, and relevant significance thresholds<br>• Identify alternatives and mitigations |
| **Assessment** | • Provide data to agencies conducting EIA<br>• Conduct supplementary or participatory research to inform analysis of health effects<br>• Conduct an independent health analysis on the proposal and share this analysis with the lead agency responsible for the EIA<br>• Involve the participation of public health or other experts to conduct research that can be shared with responsible agencies |
| **Reporting** | • Review and critique environmental and health effects analysis in the Draft EIR during the mandatory public review process<br>• Suggest inclusion of health data and health analyses<br>• Advocate for mitigations and/or alternatives<br>• Stakeholders may formally challenge the adequacy of the EIR using an appeals or litigation process |
| **Monitoring** | • Provide watchdog role for mitigation monitoring to provide accountability to agreed-upon alternatives and mitigations |

### Requirements for HIA on Specific Proposals

Increasingly, there are examples of HIA being required by municipalities. Washington State legislation (SB 6099, 2007) required a HIA to inform mitigation planning for the State Route-520 Bridge in Seattle. The Global Warming Solution Act in California requires the California Air Resources Board to analyze the health impacts of strategies to reduce or mitigate greenhouse gas emissions. HIA has been used in several jurisdictions in conjunction with EIA to fulfill regulatory requirements under NEPA, and municipalities occasionally require health impacts to be assessed in their general, specific, and area planning.

### HIA and Other Analysis Methods

HIA is different than other types of prospective analyses. Human Health Risk Assessment (HRA), for example, as it has been practiced, is a health forecasting method undertaken by regulatory bodies to assess health outcomes from specific exposures (such as the Air Resources Board assessing the health impacts of exposure to diesel particulates in a defined geographic zone). HIA holistically takes into account a full range of exposures, such as air, noise, neighborhood conditions, crime, traffic, and more.

Cost-benefit analysis is another analysis tool that is sometimes conducted, and at times takes into account health effects. Findings from both types of these analyses can be very useful within HIA.

### Intervention Points in Policy Decision-Making Processes

Policy proposals that have the potential to impact health are also appropriate subjects of Health Impact Assessments. There are many potential levels of policy-making. Examples include city ordinances such as a living wage ordinance; regulations enacted by a city, state, or federal agency to reduce greenhouse gas emissions; or public housing redevelopments implemented by a housing agency; and school policies such as Zero Tolerance policies that mandate expulsion of misbehaving students. Because there are so many different levels and locations of policy-making, there are different points and targets for HIA findings to make an impact on the decision-making process:

- *Creation of a policy*: while a HIA at this point is premature, it is possible as part of the policy research/ development phase, in order to advocate for health to be considered up-front in the design of the policy.
- *While legislation/policies are in various committees*: HIA findings can be used by health advocates to influence key committee elected officials, in order to help pass bills out of committees.
- *For votes in state legislature, city council, Boards of Supervisors*: HIA findings can be presented in lobbying visits, in the media, or in public testimony directly before votes are taken.
- *While waiting for a head of government's signature*: HIA results can be communicated in similar ways to influence a Governor, Mayor, Supervisor, School Board president, or other decision-maker.
- *In committees designed to create policy*: If a regulatory agency is charged with implementing a policy, HIA findings can influence alternatives and mitigations that are adopted.

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## Appendices

Appendix A. Screening Scenarios
Appendix B. Sample Completed Scoping Worksheets
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Appendix D. Principles of Collaboration
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Appendix J. FAQ on Integrating HIA into Environmental Impact Assessment

# Appendix A. Screening Scenarios

**Scenario 1: School Obesity Prevention Policies**

**Decision Scenario**: City A is proposing to increase local property taxes by $200 to: 1) improve the nutritional value and overall quality of school breakfast and lunch programs; and 2) fund one hour of school-based recreational activities for students. The taxes will be split evenly between the recreational and nutrition programs.

**Existing Conditions and Health Context**: Local families are experiencing increased financial and mental stress due to the mortgage crisis and the loss of blue-collar, middle class jobs. Student obesity rates - and resulting health conditions - mirror the epidemic experienced throughout the United States. However, due to funding cuts from the federal government, only 97 cents per meal is allocated for school lunches, severely limiting food choices and quality. 35% of the students in the school system qualify for and utilize reduced cost or free lunches. Most other students do not eat the lunch provided by the school, and student survey data supports the fact that this is partly due to poor food quality. Most students with cars leave campus at lunch, and eat fast food, though there are only 30 minutes allotted for lunch. Most of these students drive to the local strip mall, approximately 2 miles from the school campus. School budget deficits, in part due to increasing gas costs for school buses, have also led to budget cuts for afterschool sports and recreational equipment. The school has instituted a "pay to play" policy, for which students must pay if they want to participate in those activities (funds contributing to coach salaries and equipment).

**Stakeholders, Interests, and Political Context**: The PTA, school administration, and local social service agencies serving youth and families have come out in support of the tax. They believe that it will improve food options and quality for students - encouraging them to stay on campus for lunch, and address nutritional deficits faced by a number of students who come to school hungry each day. These supporters also hope it will keep students at school for the entire day - citing concerns about students speeding back to school to get back to class on time and swarming local businesses during their lunch time. Social service agencies also cite an increase in service needs since afterschool activities were restricted to those who could afford to pay to participate. Opponents, including Citizens for Freedom from Government, feel their property taxes are already high enough and that lunch and physical activity is a matter of individual responsibility.

**Scenario 2: Bioterrorism Research Center**

**Decision Scenario**: After the September 11, 2001 attacks, a local medical center/medical school/school of public health received a substantial infusion of funding to study bioterrorism and related issues. They propose to build a new research center, next to City Hospital (run by the Medical Center) in the Windgarden neighborhood. This will bring in an additional 200 employees a day when it is up and running. Construction will involve tearing down 4 city blocks of residential buildings, and is scheduled to take 5 years.

Developers say they expand transportation shuttles to the subway for future employees, hire around the clock security, and, through a Community Benefits Agreement, hire 50% of construction workers from the surrounding community. The new research center will create a large area in the neighborhood that is well used during the day; but at night, the area will primarily see ambulances arriving and departing for emergencies.

**Existing Conditions and Health Context**: City Hospital is in a vibrant, mixed-income area with many rental apartments and families. The area is in transition, becoming a higher income neighborhood with more single, young, white-collar professionals. The primary health concerns voiced by residents are injury and crime associated with drug dealing, the rising cost of housing to rent and/or to buy, and the lack of a large full-service supermarket nearby.

**Stakeholders, Interests, and Political Context**: Stakeholders have been very vocal in their positions and include the Medical Center, the School of Public Health, the Medical School, the City Planning Department, Concerned Citizens of Windgarden, the Public Health Commission, the City Council, and ToxiCity Design, LLC, the developer. Neighbors are primarily concerned with the risk of highly communicable viruses being studied in their neighborhood, and also with the scope of the research center, especially the loss of 4 city blocks of residential housing.

**Scenario 3: Moving a Subway Line**

**Decision Scenario**: City B is moving one of its major subway lines (the Orange Line), an elevated line (except close to downtown), approximately one mile north from its current placement, and will place it underground. City B Transit Authority has an alternative proposal to replace the subway line with buses, stating that the line has been operating at a deficit for the last 10 years.

**Existing Conditions and Health Context**: The current elevated Orange Line runs through a portion of the city that is home to a lower-income, minority population. One mile north, the proposed path of the new underground Orange Line is an area that has been recently gentrifying.

**Stakeholders, Interests, and Political Context**: Several advocacy groups are weighing in on both sides of the issue. The Concerned Citizens for Lower Rosebottom oppose moving the subway, saying that residents in their part of the city will be greatly inconvenienced, worsening their access to jobs and services. They are also concerned about diesel exhaust and traffic noise from buses in the Transit Agency's proposal. Neighbors for Public Transit are proponents of the move, as the relocated line will serve their neighborhood; however, they are concerned about people from other areas parking in their neighborhood all day to take the subway. Both groups, as well as other unaffiliated residents, are concerned about the daily disruptions caused by construction. There are no health or planning professionals in either group, but both have spoken out to City B Transit Authority.

**Scenario 4: 55 MPH Maximum Speed Limit**

**Decision Scenario**: The state of California has established that fuel efficiency decreases significantly at speeds over 55 mph. A legislator has proposed decreasing the current state highway speed limit to 55 mph as part of ongoing efforts to reduce fuel use and greenhouse gas emissions.

**Existing Conditions and Health Context**: In California, cars are responsible for 37% of greenhouse gas emissions and more than 300,000 people per year are injured in motor vehicle collisions. Driving at higher speeds increases the chance that a motor vehicle accident will have a fatal outcome. The current speed limit is 70 mph on most highways and speeding is the rule on most inter-urban routes. With two of the largest ports in the U.S., California has a significant amount of goods movement on its highways as well.

**Stakeholders, Interests, and Political Context**: The trucking industry and AAA-California oppose the speed limit change. They cite inconvenience to drivers and overall costs to the economy. Environmental and health advocates are strong supporters of the policy, and argue that the policy will reduce collisions, environmental pollution, and greenhouse gases. Most elected politicians have not taken a position on the issue.

**Scenario 5: Rails to Trails**

**Decision Scenario**: In a "Rails to Trails" effort, City D is proposing to build a bicycle path at the site of a former public transit rail line.

**Existing Conditions and Health Context**: Rates of overweight in City D mirror those of the country – about 67% of the population is overweight, and, of those, about 32% are obese. Rates of physical activity have plummeted, and schools have cut their sports and physical fitness budgets. The transit tracks are still in existence and potentially operable; their use was discontinued when City D was in economic decline. Now that there has been private reinvestment in the area, including a new office park for a software company, interest in a bike/pedestrian path has grown.

**Stakeholders, Interests, and Political Context**: There has been debate for many years as to whether to re-invigorate the public transit rail line. City D's decision to tear up the tracks is in part due to a mayoral strategy to improve the health of all City D residents and increase physical activity; however, the City has not involved the public health department in this particular land use planning effort. Bicycle enthusiasts would like to see the railway torn out and the path paved for bicyclist and pedestrian use (with separate, designated paths for each use). Environmental groups concerned with transportation and sprawl have mixed feelings about the project and wonder how to forecast the effects: Would people drive less if the transit line was reinstated? Would people bike more if there were a bike path? While increasing biking and walking via a trail would benefit residents, it has also been shown that people get exercise when they take public transit.

**Scenario 6: Affordable Housing vs. Local Food Systems**

**Decision Scenario**: Citing a lack of affordable housing, a developer has proposed building a mixed income community on an area that is currently undeveloped. The development would have a "walkable" design and include local businesses such as a supermarket and a bank. An alternative proposal by local agricultural interests would use the land to create an agriculture project, to increase the sustainability of the local food system and, to create a job training project that would teach food production skills from the field to the plate.

**Existing Conditions and Health Context**: The region has an acute lack of affordable housing, and the development would create opportunities for low- and middle-income residents to own homes and live closer to their jobs in the urban core. However, the region has also recently been losing jobs for this same population, and is largely dependent on food that has traveled thousands of miles. The area faces health concerns similar to the rest of the country, including the stress and health implications of the housing crisis and instability, as well as the obesity epidemic and concerns regarding the long-term effects of climate change and energy dependence.

**Stakeholders, Interests, and Political Context**: Community stakeholders are torn by this issue. Affordable housing advocates are largely aligned with the developer and the promise to increase the affordable housing stock in the area. Environmental groups and the business community are staunch supporters of the urban agriculture project due to its potential to increase "green" jobs and local commerce.

# Appendix B. Sample Completed Scoping Worksheets

| Example 1. Concord Naval Weapons Stations Reuse Project – Health Impact Assessment Scope | | | | |
|---|---|---|---|---|
| **Relevant Health Issues** | **Social & Env Determinants** | **HIA Research Questions** | **Research Methods & Tasks** | **Data Sources** |
| • Exercise<br>• Reduced use of private vehicles<br>• Access to goods and services and other amenities<br>• Access to good quality transportation to schools and workplaces | Transportation<br><br>Pedestrian Environment | 1. Does the land use pattern and circulation system of the project maximize access to the BART station and facilitate extension of local public transit to the area? How does the project take advantage of proximity to the BART station?<br><br>2. Does the pedestrian environment encourage walking for commuting and recreation?<br><br>3. Is the pedestrian environment safe? | • ID "unwalkable" intersections and street segments (high traffic volumes in EIR or identified in focus groups) and "walkable" intersections<br>• Evaluate quality of select intersections and street segments<br>• Assess the use of / access to existing transit options; identify gaps<br>• Forecast and compare ped environments for each alternative<br>• Examine ped links to BART and other public transit in alternatives<br>• Map/evaluate pedestrian collision data over past 10 years<br>• Quantify trends in ped collisions and link to ped environment<br>• Examine bus frequencies, routes, schedules, and ridership. ID gaps in transit and transit options in plans | • Draft EIR<br>• Focus groups<br>• Demographic data<br>• Statewide Integrated Traffic Records System<br>• City/ARUP specs and presentation materials<br>• Background documents on pedestrian routes obtained from city<br>• Pedestrian Environmental Quality Index (PEQI)<br>• Trails Master Plan<br>• Concord General Plan |
| • Exercise (diabetes, obesity, heart disease)<br>• Mental health | Open Space<br><br>Natural Resources | 1. What are needs for additional parks and open space, particularly for special populations (youth, seniors, transit-dependent, non- | • Map existing parks and open space; analyze geographic gaps in access using visual and/or GIS analysis<br>* Research existing parks and | • Draft EIR<br>• Concord General Plan<br>• City/ARUP specs and presentation materials |

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| • Social cohesion<br>• Water quality, flooding<br>• Reduced private vehicle use (air quality, noise, pedestrian injury, stress, economic hardship) | | English speaking)? How will project address these needs?<br><br>2. How will new parks and open space parks be used? Will they be widely accessible to all residents?<br><br>3. Does the project provide park and open space to serve/ connect new residential areas and existing neighborhoods, particularly for underserved populations? | recreation programming<br>• Calculate ratio of acres of parks/open space to population<br>• Examine survey results re: open space use<br>• Assess community's open space and parks needs<br>• Conduct proximity/access analysis<br>• Conduct programming analysis<br>• Analyze project alternatives relative to existing resources and identified needs | • Concord Planning Division<br>• Concord Parks and Recreation Department<br>• Focus groups<br>• Demographic data |
| • Financial resources for food, health care, and other necessities<br>• Mental health<br>• Social integration<br>• Access to goods, services, amenities<br>• Provide shelter and reduce homelessness<br>• Reduced overcrowding<br>• Exposure to toxins (mold, lead paint, air pollution) | Affordable Housing | 1. What are affordable housing needs in Concord, by levels of affordability, size and tenure? How will project help to meet that need?<br><br>2. How does the project integrate affordable housing with types and location of goods and services and? How does the project incorporate green design?<br><br>3. How will affordable housing be integrated with market rate housing into overall community? | • Compare numbers of single-family and multi-family units proposed for each alternative with RHNA trends to assess whether supply meets demand for each income category<br><br>• Analyze affordability for Concord population of proposed housing units in each alternative | • Draft EIR<br>• Regional Housing Needs Assessment (ABAG)<br>• ABAG housing projections<br>• Preliminary market analysis<br>• Focus groups<br>• Demographic data<br>• City/ARUP specs and presentation materials<br>• Concord General Plan |
| • Access to grocery | Neighborhood | 1. How will the land use pattern | • Map existing retail and public | • Internet resources |

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| stores<br>• Local services and retail encourages physical activity<br>• Access to health care and pharmacies | Completeness | and density promote walking and biking? Does this take into account needs for a diversity of populations for the project?<br><br>2. Does the project have a mix of uses that provide access to services and amenities for a diversity of Concord residents? | services in Concord; look for gaps in services (geographically and in types of service)<br>• Evaluate proposed retail and public services associated with each alternative and assess whether services address existing/future need<br>• Calculate existing Retail Food Environment Index (RFEI) and compare to state and county | (walkscore.org, google maps, City website, etc.)<br>• Preliminary market analysis<br>• ABAG population projections<br>• Focus groups<br>• Data from California Center for Public Health Advocacy<br>• Demographic data<br>• City/ARUP specs and presentation materials<br>• Concord General Plan |
| • Global warming (heat related illness, infectious disease)<br>• Water quality<br>• Flooding<br>• Environmental health | Sustainable Development | 1. How does the project address environmental sustainability? How does it address energy efficiency, water conservation, recycling, and total impervious area? | | |
| • Income correlates with life span<br>• Access to health care<br>• Mental health and stress<br>• Ability to pay for necessities<br>• Education | Employment for Residents | 1. What types of jobs will the project create, during construction/buildout and permanent/long term jobs? (e.g., pay, benefits, career ladder, stability)<br><br>2. How will the project ensure that some of employment opportunities created will benefit local residents | • Compare current job mix portrayed by Census and DOF with ABAG projections, and look for trends<br>• Forecast and compare jobs generated by each alternative<br>• Assess job mix desired by community | • ABAG projections for county<br>• Draft EIR<br>• City/ARUP specs and presentation materials<br>• City Resources from web/our contacts<br>• Preliminary market analysis<br>• Concord General Plan<br>• Focus groups |

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| • Income correlates with life span<br>• Access to health care<br>• Mental health and stress<br>• Ability to pay for necessities<br>• Education correlates with health outcomes<br>• Crime and safety<br>• Commute times relate to family and leisure time, more exercise | Employment for Residents | 1. What types of jobs will the project create, during construction/buildout and permanent/long term jobs? (e.g., pay, benefits, career ladder, stability)<br><br>2. How will the project ensure that some of employment opportunities created will benefit local residents of Concord?<br><br>3. Does the project include a workforce development plan that targets youth and underemployed populations to be able to take advantage of jobs created? | • Compare current job mix portrayed by Census and DOF with ABAG projections, and look for trends<br>• Forecast and compare jobs generated by each alternative<br>• Assess job mix desired by community | • ABAG projections for county<br>• Draft EIR<br>• City/ARUP specs and presentation materials<br>• City Resources from web/our contacts<br>• Preliminary market analysis<br>• Concord General Plan<br>• Focus groups |
| • Environmental toxins can lead to disease (e.g., cancer) | Environmental clean-up | 1. How have Concord residents been engaged in decisions about clean up of site contaminants?<br><br>2. Have the Public Health Department and other county/city agencies with regulatory responsibility fully been engaged in the remediation plan? | • Examine regulatory processes, environmental investigations, and remediation projects currently underway for the site<br>• Create "road map" of the above | • US EPA Toxic Release Inventory<br>• Draft EIR<br>• Bay Area Air Quality Management District<br>• DTSC (Envirostor)<br>• ATSDR Public Health Assessment for site<br>• EPA Airnow |
| • Democratic participation = better mental | Community Participation Process | 1. Is the redevelopment planning process engaging diverse Concord residents so the plan reflects a | • Focus group discussions re: community participation<br>• Examine city's redevelopment | • Focus groups<br>• Info from city personnel |

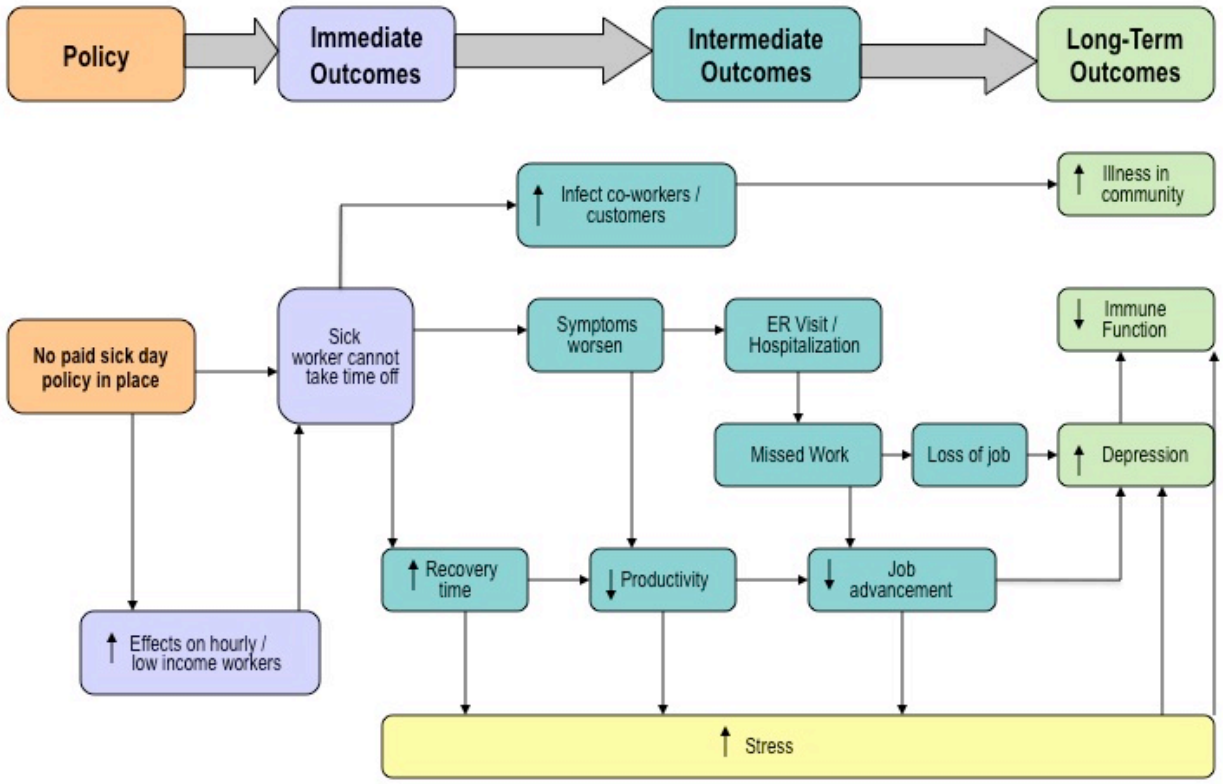
**Example 2. Freeway Widening Project – Health Impact Assessment Scope for Noise**

| **Issue: Widening a 10-mile stretch of highway by adding a lane** | |
|---|---|
| **Scoping Question** | **Response** |
| Who will conduct the HIA? | • Health Department will coordinate HIA, conduct research, and write report. Community advisory body will provide oversight on HIA process and support communications |
| Design alternatives being studied | • Adding a lane to an existing highway<br>• No change to highway |
| Geographic and temporal boundaries | • Communities living within 1000 feet of highway on both sides along the 10 miles stretch<br>• Assessing future impacts on the communities |
| Hypothesized project impacts on health or health determinants | Increased noise from lane widening could:<br>• Increase annoyance and stress<br>• Disturb sleep<br>• Decrease ability to concentrate<br>• Decrease ability to communicate outside<br>• Increase hypertension prevalence<br>• Increase heart disease prevalence<br>• Negatively impact outdoor use and retail viability |
| Existing conditions | • Significant existing noise from freight and other motor vehicle traffic on highway<br>• High levels of hypertension and heart attacks in communities living adjacent to highway<br>• Poor educational outcomes at community school |
| Vulnerable populations | • Families living in housing adjacent to highway<br>• Low-income seniors from nearby senior center close to highway<br>• Students and staff at community school adjacent to highway |
| Questions for HIA | • Will there be increased traffic on highway as a result of lane addition?<br>• Will lane addition increase levels of environmental noise in the adjacent neighborhood?<br>• Will increases in environmental noise lead to: increased annoyance and stress, disturbed sleep, decreased ability to concentrate, decreased ability to communicate outside, increased prevalence of hypertension?<br>• How will these impacts be distributed differentially among vulnerable populations listed above? |
| Potential alternatives or mitigations | • Measures to reduce noise emissions including road surface treatments or speed reductions<br>• Measures to mitigate exposure sound walls or building window retrofits |

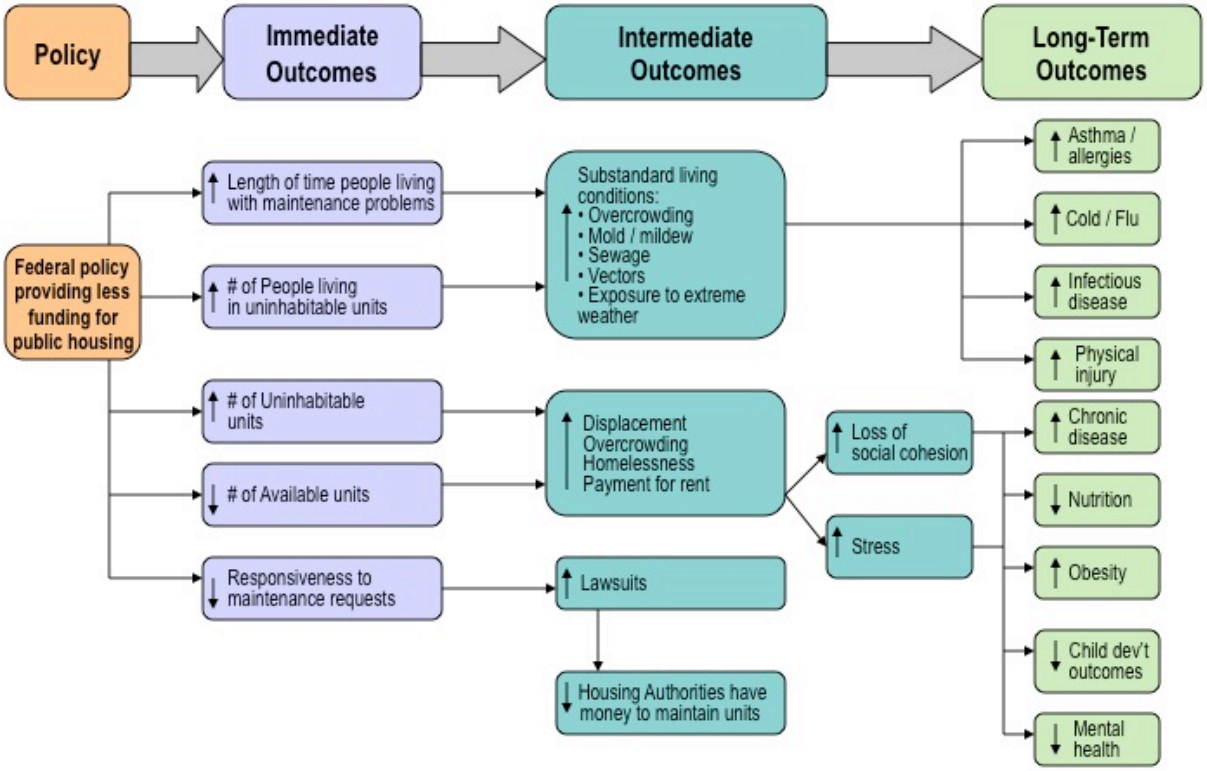
| | |
|---|---|
| Data sources, research methods | • Existing noise levels from existing environmental assessments<br>• Health outcomes from Health Department or hospital admissions<br>• Noise complaints filed with local Health Department<br>• Modeled noise levels with additional traffic<br>• Predicted noise-related health hazards using accepted dose-response functions<br>• Surveys of residents<br>• Focus group with school officials |
| Experts, key informants | • Traffic engineers<br>• Experts in noise modeling<br>• School officials<br>• Senior center staff<br>• Community leaders |
| Timeframe | • Decision to widen highway will be made within 4 – 6 months<br>• Assessment should be completed within 3-4 month in order to submit to decision makers |
| Review plan for HIA | • Community advisory body to review before publication<br>• Traffic and noise engineers to review before publication |

# Appendix C. Sample Pathway Diagrams

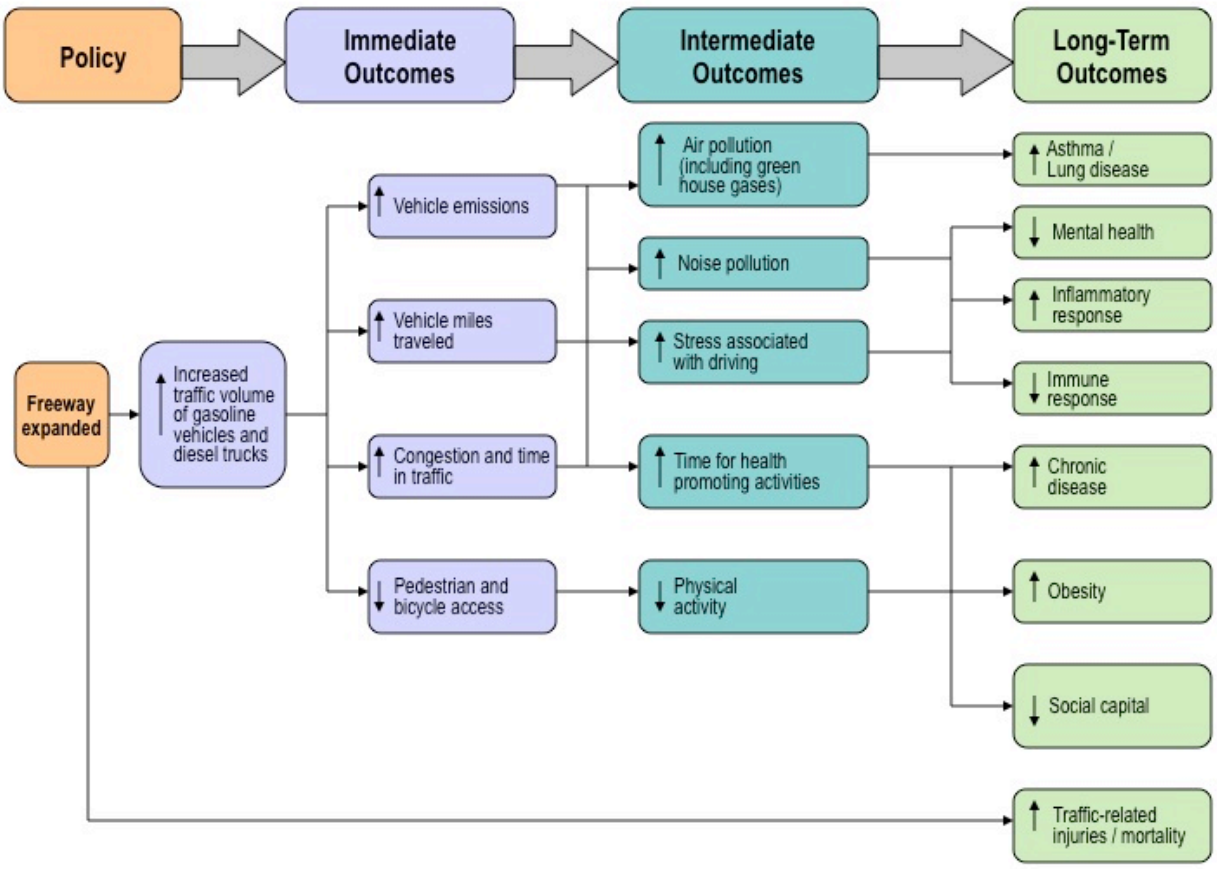
**Example 1. Paid sick days policy diagram**



**Example 2. Housing policy pathway diagram**



**Example 3. Freeway expansion pathway diagram**



# Appendix D. Principles of Collaboration

## INTRODUCTION

Human Impact Partners (HIP) believes in transparent, ethical and accountable engagement in working with all our partners - community, public health organizations, or others. HIP believes that the public health frame can and should play an important role in movements for social change. HIP believes community leadership in conducting health analyses, including Health Impact Assessment (HIA), is critical to its effectiveness in mitigating potential health outcomes of concern to the community. We understand and respect that communities are equal partners in the HIA process, and that in many cases they have the capacity to be the sole driver of the process. HIP also believes public health agencies and organizations have the opportunity to expand government's definition of public health and understanding of health to include land use, environmental impacts, and democratic decision-making. We believe that public health impacts should be transparent in the public policy making process and we believe that public health agencies should play a leading role in this.

We encourage meaningful partnership between community and public health entities. In doing so, there are several principles or ground rules we believe are important to agree upon when entering into a collaborative relationship.

## DECISION MAKING

During a health impact assessment, many decisions will need to be made, including: whether to conduct an HIA; what to include; what information is used in the findings; what the recommendations are; and how to use the HIA to take action.

HIP recognizes that our partners most often know their constituents better than HIP does, and that they therefore should take the lead in decision-making regarding project screening, scope, and use of an HIA. HIP brings experience with the process and content of HIA, an understanding of how to apply those tools, and a set of values that promote health for all.

During the HIA process, decisions should be made by consensus whenever possible. Participants should attempt to bring issues to each other's attention to avoid making unilateral decisions. They should recognize and consider different perspectives. However, organizations will be identified at the start of the collaboration who will have the authority to make final decisions about each stage of the HIA process (e.g., What will the HIA 'products' be? Who would write them? Review them? To whom will they be released? By whom?).

## RELATIONSHIP AND TRUST BUILDING

All groups engaged in the HIA should agree to explore and share their interests and goals in the HIA and any critical needs they have in the work (non-negotiables) at the beginning of the process. These should be reviewed regularly during the process to ensure needs are being met.

For example, HIP's interests include ensuring that the analysis in the HIA is holistic and scientifically accurate, that the HIA process is not co-opted by a particular agenda, and that the HIA results are as objective as possible (where the definition of objective includes not only facts described for example in quantitative or qualitative studies, but also the day-to-day experiences of community members). We believe this is critical because HIP wants to ensure that HIA remains

credible to all stakeholders and because HIA can be a useful tool for finding common ground between disparate interests.

**ROLES**

Given that health impact assessments are intended to take a holistic view of health impacts of a project, plan, policy or campaign, each step in conducting an HIA can be led by different groups depending upon the situation. However, HIP believes there are certain roles that each group must commit to fulfilling. These roles must be outlined at the start of a collaboration so it is clear who is taking the lead in each step. Some of the required responsibilities are:

**Community/Grassroots Organizations**

- Coordinate the various community constituencies and stakeholders who should be involved in the HIA project throughout the process.
- Participate in health impact assessment trainings that are included in the workplan;
- Participate in developing the scope of the HIA;
- Conduct necessary data collection with HIP (e.g., in focus groups);
- Evaluate the HIA(s);
- Report significant health risks found during the HIA process to stakeholders and decision makers;
- Conduct outreach to engage appropriate members in trainings and focus groups;
- Organize logistics for meetings/trainings related to HIA;
- Make and carry out decisions about how to use the HIA in advocacy efforts.

**Public Health Advocacy Organizations (including Public Health Agencies)**

- Participate in HIA trainings and/or focus groups;
- Participate in developing scope of the HIA;
- Data collection and analysis;
- Conduct outreach to engage appropriate community organizations and representatives of other agencies;
- Organize logistics for meetings/trainings related to HIA;
- Make and carry out decisions about how to use the HIA in advocacy efforts carried out by the agency (with community input).

**HIP**

- Train and mentor regarding health impact assessments and how to "do" an HIA;
- Facilitate, help others facilitate, or provide assistance with the HIA process, including screening, scoping, research, reporting and evaluation;
- Conduct research or help/advise others conducting research regarding the content of the HIA;
- Advocate for inclusion of health in decision making (institutionalization of HIA) but do not conduct advocacy regarding the HIA findings (unless specifically asked to by the community organizations);
- Take on other roles as needed, depending on the situation.

# Appendix E. HIA Data Sources and Related Resources

The table below provides a broad array of data sources and resources for initiating or conducting an HIA. Most of the sources are U.S. specific and some are specific to California. The 10 topics areas include: demographics, GIS resources, health statistics, indicators, checklists, health inequities, public health, planning, and built environment, CA General Planning, General HIA, and miscellaneous. (Updated March 2010)

| Topic Areas | Source | Resource Provided | Description | Website |
|---|---|---|---|---|
| Demographics | 1. U.S. Census Bureau | American Fact Finder | Population data on demographics, social, and economic characteristics at state, county, city, zip code, census tract, block group, and block level. | http://factfinder.census.gov/home/saff/main.html?_lang=en |
| | 2. U.S. Census Bureau | Economic Census | Provides data on industries, firms, employees at various geographic levels. | http://www.census.gov/econ/census02/ |
| | 3. U.S. Census Bureau | American Community Survey | The American Community Survey (ACS) is a nationwide survey designed to provide communities a fresh look at how they are changing. It is a critical element in the Census Bureau's reengineered decennial census program. The ACS collects and produces population and housing information every year instead of every ten years. Currently ACS data are available for the nation, states, and geographic areas with 20,000 or more population. In 2010, data are scheduled to be released for all geographic areas down to census tracts and block groups. | http://www.census.gov/acs/www/ |
| | 4. U.S. Census Bureau | American Housing Survey | The American Housing Survey (AHS) collects data on the Nation's housing. National data are collected in odd numbered years, and data for each of 47 selected Metropolitan Areas are collected currently about every six years. The national sample covers an average 55,000 housing units. Each metropolitan area sample covers 4,100 or more housing units. | http://www.census.gov/hhes/www/housing/ahs/ahs.html |
| GIS Resources | 5. U.S. Census Bureau & ESRI | Topologically Integrated Geographic Encoding and Referencing system (TIGER/Line) | Downloadable shapefiles to use in GIS analysis. It includes: census tracts, block groups, counties, states, metropolitan areas, roadways, waterways, congressional districts, etc. | http://www.census.gov/geo/www/tiger/ http://www.esri.com/data/download/census2000_tigerline/index.html |

| Topic Areas | Source | Resource Provided | Description | Website |
|---|---|---|---|---|
| | 6. CA Department of Public Health | CA Nutrition Network Map Viewer | The Network for a Healthy California mapping application is an interactive, internet-based Geographic Information System (GIS) that allows users to view and query mapped nutrition data. The application contains a rich set of nutrition and other health related data, including:<br>• Nutrition and school health programs<br>• WIC grocery stores and other local nutrition resources<br>• Demographics (race and spoken language) of general and at-risk populations<br>• Various California Department of Public Health regions<br>• Political (senate and assembly) districts | http://www.cnngis.org/ |
| Health Statistics | 7. Centers For Disease Control and Prevention | National Center for Health Statistics | National Center for Health Statistics' (NHIS) website, a rich source of information about America's health. Data is for the U.S. | http://www.cdc.gov/nchs/ |
| | 8. Robert Wood Johnson Foundation and University of Wisconsin Population Health Institute | Country Health Rankings | This web site provides access to the 50 state reports, ranking each county within the 50 states according to its health outcomes and the multiple health factors that determine a county's health. Each county receives a summary rank for its health outcomes and health factors and also for the four different types of health factors: health behaviors, clinical care, social and economic factors, and the physical environment. Each county can also drill down to see specific county-level data (as well as state benchmarks) for the measures upon which the rankings are based. | http://www.countyhealthrankings.org/ |
| | 9. Partners in Information, Access for the Public Health Workforce | Health Data Tools and Statistics | Links to data under the following topics: health information technology and standards, health statistics, national public health data sets, state and local public health data sets, public health infrastructure data, search for other tools, and tools for data collection and planning. | http://phpartners.org/health_stats.html |
| | 10. CA Office of Statewide Health | Healthcare Information Division | Listings, reports and tables, financial data, interactive maps, data and other queries at the CA state and county level for hospitals, long-term | http://www.oshpd.ca.gov/HID/DataFlow/ |

| Topic Areas | Source | Resource Provided | Description | Website |
|---|---|---|---|---|
| | Planning and Development | | care facilities, primary care/specialty clinics, home health and hospice, professional providers. | |
| | 11. LA County Public Health | LA County Health Survey | The Los Angeles County Health Survey is a population based telephone survey that provides information concerning the health of Los Angeles County residents. The data are used for assessing health-related needs of the population, for program planning and policy development, and for program evaluation. The relatively large sample size allows users to obtain health indicator data for large demographic subgroups and across geographic regions of the County, including Service Planning Areas and Health Districts. | http://publichealth.lacounty.gov/ha/hasurveyintro.htm |
| | 12. University of California at Los Angeles | California Health Interview Survey (CHIS) | CHIS is a CA telephone survey of adults, adolescents, and children conducted every two years. Includes a search tool to obtain data at a regional and/or county level and control for different variables. | http://www.chis.ucla.edu/ |
| **Indicators** | 13. U.S. Department of Health and Human Services | Healthy People 2010 | Healthy People 2010 provides a framework for nation-wide disease prevention. It is a statement of national health objectives designed to identify the most significant preventable threats to health and to establish national goals to reduce these threats. Click on the link to "Leading Health Indicators." The proposed Healthy People 2020 Objectives are also posted online. | http://www.healthypeople.gov/ |
| | 14. Redefining Progress | Community Indicators Handbook | The 2nd edition of Community Indicators Handbook integrates the basics of building an indicator project to meet your community's needs with the best practices of projects around the country, insights into the progress and evolution of the indicator movement, and listings of local, regional and national organizations for reference. | http://www.rprogress.org/cihb/index.shtml |
| | 15. Annie E. Casey Foundation | National Survey Indicators Database | Designed to help users find survey questions, measures, and instruments that might contribute to data collection. Designed primarily as a resource for survey work in the Making Connections communities, and focuses on issues and results most important to that Initiative. | http://tarc.aecf.org/initiatives/mc/mcid/index.php |
| | 16. The Urban | National | Links to data under the following topics: health information TechData | http://www.urban.org/publicat |

| Topic Areas | Source | Resource Provided | Description | Website |
|---|---|---|---|---|
| | Institute | Neighborhood Indicators Partnership Guide: Catalog of Administrative Data Sources for Neighborhood Indicators | source, indicator examples, source organization on data related to economy, health, education, social services, safety and security, community resources participation, housing, and environment. | ions/411605.html |
| | 17. University of Kansas Community Toolbox | Gathering and Using Community-Level Indicators | Provides concise overview of why and how to create community-level indicators. | http://ctb.ku.edu/en/tablecontents/section_1371.htm |
| | 18. The Boston Foundation | Boston Indicators Project | Offers new ways to understand Boston and its neighborhoods in a regional context. Aims to democratize access to information, foster informed public discourse, track progress on shared civic goals, and report on change in 10 sectors: civic vitality, cultural life and the arts, economy, education, environment, health, housing, public safety, technology, and transportation. | http://www.bostonindicators.org/IndicatorsProject/Default.aspx |
| | 19. Sustainable Pittsburgh | Southwestern Pennsylvania Regional Indicators Project | Comprehensive assessment of regional sustainability trends for the six-county region of Southwestern Pennsylvania. | http://www.sustainablepittsburgh.org/NewFrontPage/2004_Indicators_Report.html |
| | 20. San Francisco Department of Public Health | Healthy Development Measurement Tool | A comprehensive evaluation metric to consider health needs in urban development plans and projects. Includes over 100 community health indicators, the majority of which have data at the neighborhood level. This data is specific to San Francisco, but other cities have adapted the tool. | http://www.thehdmt.org |
| | 21. Centers for Disease Control | Environmental Public Health Indicators Project | Environmental public health indicators (EPHIs) can be used to assess our health status or risk as it relates to our environment. They may be used to assess baseline status and trends, track program goals and objectives, and build core surveillance capacity in state and local | http://www.cdc.gov/nceh/indicators/default.htm |

| Topic Areas | Source | Resource Provided | Description | Website |
|---|---|---|---|---|
| | | | agencies. The best indicators are those that reliably predict the relationship between human health and the environment, are routinely collected, and have well-accepted definitions and data collection standards. | |
| Checklists | 22. National Association of City and County Health Officials (NACCHO) | Public Health in Land Use and Community Design checklist | The NACCHO and the Tri-County Health Department in Colorado has developed an environmental checklist for planners and health officials. May be used as a comprehensive assessment tool for review of land use plans as well as an educational tool. | http://www.naccho.org/topics/environmental/landuseplanning/upload/LandUseChecklist-03-10-03-2.pdf |
| | 23. Shasta County Department of Public Health | Walkability checklist | Checklist identifies barriers to walking and features that encourage walking. Also identifies ways to improve walkability in your area. | http://www.co.shasta.ca.us/html/Public_Health/docs/services/improve_your_health/walkability_checklis.pdf |
| | 24. Shasta County Department of Public Health | Public Health Development Checklist | A checklist internal to the public health department for local health departments to evaluate development proposals, which would then be shared with local land use planning staff. | http://www.co.shasta.ca.us/html/Public_Health/docs/healthy_communities_initiatives/checklist_with_boxes.pdf |
| Health Inequities | 25. Prevention Institute | THRIVE - Tool for Health and Resilience in Vulnerable Environments | THRIVE helps people understand and prioritize the factors in their communities that can help improve health and safety. Identifies key factors and allows a user to rate how important that factor might be. Also provides information on how each factor is related to health, how to address the factor, and where get more information. | http://www.preventioninstitute.org/component/jlibrary/article/id-96/288.html |
| | 26. Bay Area Regional Health Inequities Initiative (BARHII) | Framework in Action | BARHII's data workgroup has developed a conceptual framework that effectively illustrates the connection between social inequalities and health, and focus attention on measures that have not characteristically been within the scope of public health departments. | http://barhii.org/programs/data.html |

| Topic Areas | Source | Resource Provided | Description | Website |
|---|---|---|---|---|
| Public Health, Planning, and the Built Environment | 27. American Public Health Association | Environment | Includes targeted educational materials, messages, and policies that highlight connections between healthy communities and health people focused on climate change, built environment, environmental public health tracking, and workforce development. | http://www.apha.org/programs/environment |
| | 28. San Francisco Dept. of Public Health – Program on Health, Equity, and Sustainability | Health Assessment Tools | These tools are used to assess environmental conditions and respond to urban health inequities and environmental policy gaps. These tools are used to work with community stakeholders and government agencies to inform project development and policy-making and to improve the consideration of health and health inequities in decision-making. Several of the tools/models are preliminary and are still being refined. Tools included deal with air quality, noise, pedestrian quality, vehicle-pedestrian collision, retail food availability, etc. | http://www.sfphes.org/HIA_Tools.htm |
| | 29. California Air Resources Board | Air Quality & Land Use Handbook: A Community Health Perspective | General reference guide for evaluating and reducing air pollution impacts associated with new projects that go through the land use decision-making process. | http://www.arb.ca.gov/ch/landuse.htm |
| | 30. Centers for Disease Control and Prevention | Designing & Building Healthy Places | Explores the interaction between the built environment and health issues such as: accessibility, children's health, elder health, gentrification, healthy community design, health impact assessment, injury, mental health, physical activity, respiratory health, air pollution, social capital, and water quality. | http://www.cdc.gov/healthyplaces/ |
| | 31. University of Minnesota, Cornell University, and the University of Colorado | Design for Health | This website shows how to bridge the gap between emerging research on community design and healthy living and the every day realities of local government planning. Design for Health discusses events, technical assistance library, a health impact assessment tool, and direct technical assistance. | http://www.designforhealth.net |

| Topic Areas | Source | Resource Provided | Description | Website |
|---|---|---|---|---|
| | 32. National Association of City and County Health Officials (NACCHO) | Community Design and Land Use Program | NACCHO's Community Design project enhances capacity of local health departments to be involved in decision-making processes and otherwise extend their role in issues relating to land use. | http://www.naccho.org/topics/hpdp/Land_Use_Planning.cfm |
| | 33. Public Health Law & Policy | General Plans & Zoning: A Toolkit on Land Use and Health | Designed for nutrition and other public health advocates seeking introductory understanding of how land use decisions are made and how advocates can effectively participate in those decisions. | http://www.healthyplanning.org/toolkit_gpz.html |
| | 34. American Planning Association | Healthy Communities through Collaboration | Resources related to APA/NACCHO partnership. The project promotes an interdisciplinary approach to creating and maintaining healthy communities by providing tools, resources, and networks to foster improved collaboration. | http://www.planning.org/research/healthy/ |
| | 35. PolicyLink | Equitable Development Toolkit | Toolkits to help community builders achieve diverse, mixed-income neighborhoods that provide access to employment, education, and safe, affordable housing. | http://www.policylink.org/site/c.lkIXLbMNJrE/b.5136575/k.39A1/Equitable_Development_Toolkit.htm |
| | 36. U.S. Depart. of Transportation Federal Highway Administration | Pedestrian and Bicycle Information Center (PBIC) | National clearinghouse for information about health and safety, engineering, advocacy, education, enforcement, access, and mobility for pedestrians and bicyclists. | http://www.walkinginfo.org/<br><br>http://www.bicyclinginfo.org/ |
| | 37. Victoria Transport Policy Institute | | An independent research organization dedicated to developing innovative and practical solutions to transportation problems. Includes many research documents and transportation demand management encyclopedia. | http://www.vtpi.org/ |

| Topic Areas | Source | Resource Provided | Description | Website |
|---|---|---|---|---|
| CA General Planning | 38. CA Governor's Office of Planning and Research | CA General Plan Guidelines | Provides advice on how to write a General Plan that expresses a community's long-term vision, fulfills statutory requirements, and contributes to creating a great community. | http://www.opr.ca.gov/index.php?a=planning/gpg.html |
| | 39. CA Governor's Office of Planning and Research | Planning Resources | Publications and resources available in the areas of land use planning and environmental review. | http://www.opr.ca.gov/index.php?a=planning/planningpubs.html |
| | 40. CA Resources Agency, CA Environmental Resources Evaluation System | California Environmental Quality Act (CEQA) | CEQA is a statue that requires state and local agencies to identify the significant environmental impacts of their actions and to avoid or mitigate those impacts, if feasible. This website contains the statute and guidelines for conducting, evaluating, or commenting on a CEQA environmental impact report. | http://ceres.ca.gov/ceqa/ |
| General HIA | 41. HIA-CLIC: The UCLA Health Impact Assessment Clearinghouse Learning and Information Center | | The website provides summaries of HIAs conducted in the U.S., reviews of common pathways examined by HIAs, HIA-related news, and information about HIA methods and tools. | http://www.ph.ucla.edu/hs/hiaclic/ |
| | 42. Human Impact Partners | Tools and Resources | Land use HIA tools, training materials, and HIA links. | http://www.humanimpact.org/Tools.html |
| | 43. Wisconsin Department of Public Health | Wisconsin Health Impact Assessment Online Toolkit (beta version) | HIA case studies, survey/ indicator tools, Wisconsin-specific data and resources, literature review tools/ | http://wihiatoolkit.weebly.com/index.html |

| Topic Areas | Source | Resource Provided | Description | Website |
|---|---|---|---|---|
| Misc | 44. HealthyCity | | HealthyCity is an information and action resource that unites community voices, rigorous resources, and innovative technologies to the root causes of social inequity. The webstie provides the public sector with actionable information such as data, maps, and service referrals through our easy-to-use online platform. It also has lists of publically available data sources. The data is currently available for California only. | http://healthycity.org/ |
| | 45. Various groups | Affordable Housing Design Advisory | Developed by HUD, AIA, and other financial and nonprofit organizations. Includes guidelines, checklists, photo galleries, and resources for communities planning affordable housing projects. | http://www.designadvisor.org/ |
| | 46. Robert Wood Johnson Foundation | Active Living Research | The Active Living Research website provide a range of tools and a searchable resource on active living and the effects of built environment on obesity and physical activity. | http://www.activelivingresearch.org/resourcesearch |

# Appendix F. Community Health Indicators

| Health Determinants | Connections between Determinants and Health Outcomes | Measurable Indicators |
|---|---|---|
| Livelihood<br>• Security of employment<br>• Adequacy of wages, benefits, and leave<br>• Job hazards<br>• Job autonomy<br>• Economic diversity | • Unemployment is a source of chronic stress and low self esteem and is associated with health adverse behaviors and premature death<br>• Income is strongly associated with life expectancy<br>• Sick leave supports timely use of health care<br>• Rates of unemployment and poverty are proportional to crime rates<br>• Job autonomy predicts reduced mortality from cardiovascular disease | Rate of unemployment<br><br>% of jobs in the City that provide self-sufficiency income<br><br>% of jobs that have guaranteed paid sick leave<br><br>% of jobs that have health insurance coverage |
| Housing<br>• Crowding<br>• Affordability<br>• Design safety<br>• Location safety<br>• Stable tenure | • Crowded conditions increase risks for infections, respiratory disease, mental health, and fire<br>• Unaffordable rents or mortgages result in trade-offs between housing, food, and medical care; unaffordability increases stress | % of housing units affordable to household with median income<br><br>% of households paying more than 30% of income on rent or mortgage payment<br><br>% of population homeless in the past year<br><br>% of households evicted in past year |
| Access to Educational Resources<br>• Quality, proximity, and capacity of schools and childcare<br>• Adult education and training opportunities | • Children commuting long distances to school have less sleep, les exercise, and greater exposure to vehicle pollution<br>• Local community schools can promote parent participation and good educational outcomes<br>• Quality childcare increases childhood educational and job outcomes | % of residential units within ¼ and ½ mile of public elementary and middle school<br><br>% of residential units within ¼ and ½ mile of child care centers |

| | | |
|---|---|---|
| <u>Transportation</u><br>• Access to jobs, goods, services, and educational resources<br>• Active travel<br>• Public transit options<br>• Transport Safety | • Public transit provides access to employment, education, parks, and health care services<br>• Sidewalks and bicycle lanes facilitate physical activity, reducing heart disease, diabetes, obesity, blood pressure, and osteoporosis, symptoms of depression, anxiety, & falls in the elderly<br>• Vehicle speeds are directly proportional to injury severity | Rate of pedestrian and bicycle injuries per capita per year<br><br>% of street miles with dedicated bike paths or lanes, by class<br><br>% of population within ½ mile of regional transit and ¼ mile of local public transit stop, by neighborhood |
| <u>Access to Quality Retail Goods and Public Services</u><br>• Quality and proximity of financial institutions<br>• Quality and proximity of food resources<br>• Quality and proximity of health services | • Adequate nutrition prevents infectious diseases<br>• Consumption of fruits and vegetables linked to reduced cancer risk<br>• Local financial institutions help families create and maintain wealth<br>• Timely access to primary health services prevents serious hospitalizations<br>• Close proximity to retail goods and services encourages active modes of transport and physical activity | % of population ½ mile of a full-service grocery store or fresh produce market<br><br>% of population with 30 minute transit or walking commute of a primary care public health facilities<br><br>% of population living ½ mile from commercial district with 75% of common public services; (post office, public school, public childcare, community park or playground, community garden, library, recreation center, civic spaces, churches, public art and transit stops)<br><br>% of population living ½ mile from a commercial district with 75% of common private services; (bank, produce market, convenience store, supermarket, hardware store, cleaner, auto repair, restaurant, farmer's market, café, and private childcare) |

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| <u>Access to Parks and Natural Space</u><br>• Quality, proximity, capacity, and programming of parks and open spaces | • Regular physical activity reduces risk of developing heart disease, diabetes, osteoporosis, and obesity, reduces blood pressure, relieves symptoms of depression and anxiety, and prevents falls in the elderly.<br>• Access to places for physical activity increases the frequency of physical activity in children and adults<br>• People who live in greener environments have better physical and mental health<br>• Trees and greens space remove air pollution from the air and mitigate heat island effects | % of population within ¼ mile of neighborhood or regional park, open space or publicly accessible shoreline<br><br>% of creeks and shoreline with public access<br><br>% of population within ¼ mile of community recreational facility<br><br>Acres per capita of neighborhood parks<br><br>% of schools meeting state standards for adequate play areas |
| <u>Environmental Quality</u><br>• Pollutants in outdoor and indoor air<br>• Contaminants in drinking water and recreational water<br>• Environmental or occupational noise | • Vehicle emissions exacerbate respiratory disease and increase cardio-pulmonary mortality<br>• Indoor aero-allergens cause or exacerbate asthma<br>• Contaminated water can spread serious infectious disease<br>• Chronic noise exposure harms sleep, temperament, hearing, and blood pressure | % of population living within 500 feet of busy roadways<br><br>% of population living a safe distance from industries emitting hazardous pollutants<br><br>% of creeks, watersheds and shoreline restored and/or cleaned<br><br>% of population living with outdoors noise level of more than 65 decibels<br><br>% of land area with unutilized industrial or contaminated land |

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| <u>Social Cohesion</u><br>• Supportive relationships w/ friends, families, and neighbors<br>• Participation in social organizations<br>• Degree and quality of participation in public decision-making<br>• Responsiveness of public agencies to peoples needs | • Physical and emotional support buffers stressful situations, supports illness recovery, prevents isolation, contributes to self-esteem, and reduces the risk of early death<br>• Social contact across ethnic and class groups ensures equitable access to public health and educational services<br>• Supporting the effective participation of marginalized group in governance helps ensure achievement of basic human needs (e.g. food, shelter, health services)<br>• Control of one's life is a major factor in quality of health | % of voting age population participating in general elections<br><br>% of community involved in community organizations<br><br>% of community professing "trust" of neighbors<br><br>Level of involvement in planning for a development project |
| <u>Social Exclusion</u><br>• Proportion of the population living in relative poverty<br>• Attitudes towards or stereotypes of minority racial, social, and ethnic groups<br>• Segregation of residences by race, ethnicity, religion, or class<br>• Degree of inequalities in income or wealth | • Economic exclusion in segregated neighborhoods limits wealth which is a buffer against illness and stress<br>• Residents of low-income and ethnically segregated neighborhoods experience, high rates of teenage childbearing, tuberculosis, cardiovascular disease, and homicide | Residential segregation by ethnicity<br><br>Residential segregation by household income<br><br>Equality of income distribution<br><br>Diversity of residential uses |
| <u>Community Violence</u><br>• Violent crime<br>• Property crime | • Direct effects of crime include injury and death<br>• Indirect effects of crime include fear, stress, and poor mental health<br>• Fear of violence inhibits walking | Assault rate per capita<br><br>Rates of robbery and burglaries |

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| <u>Environmental Stewardship</u><br>• Protection of water, land, and air resources | • Reducing electricity and natural gas usage results in reduction in climate change and air pollution emissions<br>• Green business practices may reduce occupational and environmental exposures<br>• Exposure and access to natural areas meets an essential human need improving health, well being, community image and identity | Per capita energy use<br><br>Per capita water use<br><br>Per capita waste generation<br><br>% waste diverted from landfill<br><br>% of land preserved as natural area<br><br>% of facilities that meet green building standards (public and private)<br><br>% of businesses meeting or exceeding the County's green business standards |

# Appendix G. Answers to Assessment Exercises

**Assessment Exercise 1. Estimating the Health Benefits of a New Park**

1. **Identify findings from the literature below about the potential health impacts of increasing access to a public park.**

a. From the literature cited: increased access to parks is associated with increased physical activity and longevity.

b. From other literature: increased access to parks is also associated with decreased anxiety, depression and stress, increased social cohesion, faster recovery times from surgery.

2. **What factors might modify these potential impacts, either positively or negatively?**

Status of routes to parks, distance to parks, maintenance of routes to parks and parks, transportation access to park, evidence of illegal activity in parks, wheelchair accessibility on paths, recreational programming in parks.

3. **Based on the studies listed below, is it possible or reasonable to quantify the benefits that the proposed park would have on rates of physical activity for the local population? If so, what other data would you need to estimate such benefits quantitatively?**

The literature that shows increased physical activity with decreased distance to parks (e.g., 52% of adults within 10 minutes of park met physical activity standards vs. 37% who lived further away). This finding could be used to quantify increased physical activity in the population of concern. In order to do this analysis, you would need maps or another way to estimate the number of adults within 10 minutes (walking) or ½ mile of the proposed park. Information about current park use in similar neighborhoods with a part could be used to replace data from other jurisdictions.

**Assessment Exercise 2. <u>Judging the Impacts of Repealing Condo Conversion Protections</u>**

1. **What are the possible health impacts of the repeal of the condo-conversion law? Use Appendix C, the pathway diagram about market-rate housing, as a reference.**
   Increases in overcrowding and homelessness, loss of social cohesion, increased stress and lowered immune response, inability to afford other necessities (food, health care, etc.), social exclusion and concentrated poverty in particular neighborhoods, loss of political power for low-income renters. Allergies, asthma, infectious disease, mental health issues, obesity/ malnutrition, chronic disease increase, childhood behavioral disorders.

2. **What populations might be most vulnerable to these impacts?**
   Low-income populations, populations with lower home-ownership rates (e.g., potentially people of color), those without much political power, those already impacted by other health, economic, and social disparities.

3. **What are some of the potentially hidden costs to the City of the repeal?**
   Increases in homelessness and need for services to address negative health impacts resulting from repeal. Increase in people unable to afford their health insurance and thus needing free care due to having fewer financial resources.

4. **What evidence might you obtain relatively quickly to inform your judgments?**
   - Epidemiological studies or grey literature reports about increases in homelessness and overcrowding when housing prices increase
   - Census data regarding income and home ownership rates
   - Evaluations that demonstrate the impacts of previous housing policy changes (perhaps in public housing)
   - Data from local area governments about amount of people on waiting lists for affordable housing or amount of affordable housing needed

5. **If you had more time and resources, what else might you do to study this issue?**
   a. Conduct focus groups with vulnerable populations about the potential impacts of the repeal, or to find out about the community's need for affordable housing.
   b. Create GIS maps showing income by census tract, home ownership rates and other relevant census variables.

**Assessment Exercise 3. <u>Predicting Changes in Vehicle Miles Traveled</u>**

1. **Approximately how much will total VMT in Autovia change per year, in response to this proposed gas tax policy?**

   18.75 million less VMT per year. From 225 million to 206.25 million

2. **What are possible sources of error in this estimation?**
   a. Survey is not statistically significant; could be biased (for example, sampling error, etc.)
   b. Survey questions asking people to predict their behavior are not typically the best predictor of actual behavior
   c. Doesn't take into account people who drive less – only people who stay the same or stop driving

3. **What are ways the estimation might be improved and what data might you need to do a better analysis?**

   Estimates of the elasticity of VMT due to changes in gas price (i.e., studies showing how much VMT changes when gas prices change), could replace the data from the survey.

4. **What populations would the gas tax policy impact the most? In what ways?**
   a. Lower income residents would be burdened with a higher financial impact, as the gas tax would be a higher proportion of their income, compared to other higher income residents.
   b. Rural populations would also be impacted because they don't have access to public transit or bike lanes as an alternative to driving/ paying for gas.
   c. Populations living in close proximity to highly trafficked roadways may benefit most if vehicle volumes and emissions decrease, and air quality improves.

5. **Do you think it is appropriate for the gas tax revenue to fund treatment for asthmatic children or do you have alternative ideas about how the revenue should be spent?**

   The revenue could fund an alternative to driving, such as putting public transit and bike lanes into rural areas – these would be more upstream solutions to prevent the prevalence of diseases such as asthma, rather than just treat them.

6. **What other policies might reduce VMT in order to improve health?**
   - Congestion pricing
   - Taxing VMT by some sort of odometer reading
   - Improving public transit, including regional transit like Amtrak for rural areas
   - Improving walkability and bikability
   - Promote mixed use development
   - Increase parking fees/unbundle parking from housing units
   - Tax credits for bike/pedestrian travel
   - Increase vehicle title and registration fees

7. **What other measures of driving might you look at, and what are benefits and drawbacks of each? (For example, total VMT in the state or VMT per capita? Number of vehicle trips? Vehicle volume? What scale?)**

   Looking at a finer scale at where high VMT/vehicle volume is located would help define hot spot locations and understand which populations are most exposed to traffic-related impacts.

8. **With more information, what are some other interesting measures of health outcomes you could consider assessing based on this proposed gas tax? For example, how much would reducing VMT alleviate some of the negative impacts discussed in the first paragraph?**

   a. How much would air pollution (including green house gas emissions) be reduced
   b. How much revenue will be generated from the implementation of this policy for the health care centers to treat children with asthma? What impact would these programs/services have on population health.
   c. What impact would the proposed policy have on physical activity? Motor vehicle accidents? Pedestrian injuries?

**Assessment Exercise 4. <u>Paid Sick Days and the Prevention of Influenza</u>**

1. **What can you say about the impacts of a guaranteed paid sick days policy based on the findings from the above two modeling exercises?**
   If people used paid sick days to stay home from work and school when they were sick, or could use the paid sick days to care for sick dependents, fewer sick people would be in situations where they could infect others. This would increase compliance in both types of interventions (quarantine and social distancing). If compliance were increased, the flu would impact fewer people.

2. **What are the main limitations of the studies for answering the Senator's questions?**
   a. We do not know the prevalence of compliance with social distancing measures
   b. We may not be able to generalize as these numbers do not necessarily apply to only workers (e.g., how many are children?)
   c. We also need to know what inputs were used for the Ferguson and Germann models in order to make a better judgment about whether their findings would apply to the Senator's policy.

3. **What research or studies would you recommend to better study the effects of the proposed policy?**
   Study of compliance with social distancing measures in workers with and without paid sick days.

**Assessment Exercise 5. <u>Forecasting Pedestrian Injuries based on Vehicle Volume</u>**

1. **What is your estimate of future pedestrian injuries?**
   a. Known:
      - AADT current = 20,000
      - AADT future = current (20,000 daily) + predicted (5,000 daily)
      - PVCR current = 10 crashes per five years, or 2 crashes per year on average

   b. Formula:
      - PVCR future = √(25,000/20,000) * 2 crashes per year
        = 1.118*2
        = 2.236 collisions annually

2. **What assumptions do you rely upon in making this estimate?**
   a. This estimate assumes that all else is held equal. For example, that the development will add to traffic patterns reported for existing roads but will not alter the traffic patterns on existing roads.
   b. Also assumed is that there is a proportional increase in pedestrian-vehicle injuries when traffic increases (i.e., that the model is correct).

3. **What other changes associated with the project may affect pedestrian collisions?**
   a. A change in the number of pedestrians is not built into the model.
   b. Changes in roadway conditions (e.g., traffic calming) that result from the project could impact collisions.
   c. Traffic may shift from existing routes to the proposed routes so may not add as many new daily trips.
   d. There are also external factors; for example, if bike lanes, side walks, and public transit are improved, the number of pedestrians in the area may increase or lessen the number of annual average daily vehicle trips.

4. **What information might help you make a better estimate?**
   Estimates of population growth in the area, change in the number of pedestrians, presence of public transportation, and plans in the next year for non-motor vehicle transportation facilities would help improve the estimate.

# Appendix H. HIA Report Template

**HIA Report Guide**
**December 2010**

The following information is meant to provide a basic structure for your HIA report including the types of information that, at a minimum, should be included. Some notes about the document:

- While the structure can be revised to match your HIA's needs, the content included below should be discussed in one way or another.
- Please also refer to your HIA training materials and the HIA Practice Standards (www.humanimpact.org/downloads/hia-practice-standards-nov-2010/) for other types of information you may want to discuss in the report. While the Practice Standards are meant to guide the HIA process, they may also provide additional categories of information to include in the report itself.
- Consider how you frame and communicate your findings and consult with the Health Impact Project and their communications consultant, Burness Communications, as needed.
- HIAs can range in length; the page numbers listed below are suggested and assume that a full HIA process (rather than a rapid HIA process) has been conducted.
- For examples of HIAs that mostly conform to this structure, see:
    - A Health Impact Assessment of the California Healthy Families, Healthy Workplaces Act of 2008 – report: http://www.humanimpact.org/downloads/healthy-workplaces-act-report-2008/ and summary: http://www.humanimpact.org/downloads/healthy-workplaces-act-summary-2008/
    - Child Health Impact Assessment of the Massachusetts Rental Voucher Program: http://www.hiaguide.org/sites/default/files/HIAofhousingrentalvoucherschildhealth.pdf

*This Report Guide was prepared by Human Impact Partners for Health Impact Project HIA grantees. We thank Dr. Aaron Wernham from the Health Impact Project for his review and feedback on the guide.*

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| **Report Front Items** | List of report authors/contributors.<br>List of report reviewers (if any).<br>Acknowledgement (including the Health Impact Project).<br>Suggested citation.<br>Table of contents.<br>List of tables, maps and figures. |

**Section I. Key Findings / Executive Summary (2-3 pages)**

Briefly describe the proposal being assessed.

Provide brief background on what led to the decision to do this HIA, who will be affected, and a summary of the proposal's importance to health and health disparities.

List the primary scoping categories (e.g., health determinants)/research questions that were the focus of the HIA.

List (if any), any particularly prominent stakeholder concerns that are addressed.

Make a clear and concise statement on the overall finding/s of the HIA – e.g., "The HIA finds that the proposal being assessed would have significant positive and/or negative impacts on health."

Include bulleted list of findings by "highly likely impacts", "likely impacts", and "plausible, but not well-supported impacts."

Create a summary table of impacts. The following is intended as an example, and can be adapted:

| **HIA Impact Analysis – Summary of Findings** | | | | |
|---|---|---|---|---|
| **Health Outcome/ Determinant** | **Direction and Extent** | **Likelihood** | **Distribution** | **Quality of Evidence** |
| | | | | |
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*Direction and Extent of Impact* (combine direction, magnitude and severity into one measure):

- Severe impact on many = ▲▲▲▲ or ▼▼▼▼
- Severe impact for few or small impact on many = ▲▲▲ or ▼▼▼
- Moderate impact on medium number = ▲▲ or ▼▼
- Small impact on few = ▲ or ▼
- Uncertain = ?
- No effect = "No effect" or "None"

*Likelihood of Impact:*

- Likely = it is likely that impacts will occur as a result of the proposal
- Possible = it is possible that impacts will occur as a result of the proposal
- Unlikely = it is unlikely that impacts will occur as a result of the proposal
- Uncertain = it is unclear if impacts will occur as a result of the proposal

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| | *Distribution of Impact:*<br>• Name subpopulation impacted more (e.g., "low-income residents impacted more"; "Blacks impacted more") or "equal impacts"<br><br>*Strength/Quality of Evidence:*<br>• *** (e.g., many strong studies)<br>• ** (e.g., one or two good studies)<br>• * (e.g., no clear studies, but generally consistent with principles of public health)<br><br>List the top recommendations stemming from the HIA.<br><br>Include a concluding statement about the HIA and intended next steps. |

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| **Section II. Introduction (2-3 pages)** | Describe in greater detail the proposal being assessed and the changes that might be anticipated if the proposal is implemented.<br><br>If necessary, briefly explain the significance of the proposal from a national, state, and/or local perspective. For example, does the proposal build on existing legislation and/or planning efforts or does the proposal reflect the culmination of some campaign?<br><br>Briefly describe why conducting an HIA would add value to the debate around the proposal, considering, for example, what new information the HIA brought compared with other components of the planning process.<br><br>Name the key partners that came together to conduct the HIA, including individual partners and any steering or stakeholder advisory committees.<br><br>Provide the dates when the HIA was conducted.<br><br>Walk through what each section of the HIA report includes. |

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| **Section III. Background and Screening (3-4 pages)** | Provide a brief explanation of what HIA is, including the steps of HIA.<br><br>If not addressed adequately above, describe in detail the proposal being addressed, background on the topic, why it is being pursued, proposal decision-makers and other stakeholders who may have jurisdiction or input on the decision, relevant laws or policies, a timeline for the decision-making process, and how the world would be different if the proposal was implemented (e.g., who, what, when, where, why).<br><br>Include any relevant statistics on the proposal that highlight its salience and why it's a relevant topic on which to conduct an HIA, such as, for example, number of jobs anticipated, change in community revenues, change in traffic, contribution to local air pollution.<br><br>Discuss who was involved in making the decision to conduct the HIA.<br><br>Include a section on Screening (or, "The Case for HIA") where the following questions are answered:<br>• Is the proposal associated with potentially significant health impacts/ disparities that would otherwise be unconsidered or undervalued by decision-makers?<br>• Is it feasible to conduct a relevant and timely analysis of the health impacts of the proposal?<br>• Are the proposal and its decision-making process potentially open and receptive to the findings and recommendations of a health impact analysis?<br><br>Include a clear statement that, based on responses to the above (and any other relevant screening questions), it was decided that an HIA should be conducted. Clearly state all the decision alternatives considered in the HIA. Include any other relevant information here that was not discussed above.<br><br>List the partners in the HIA and their roles, including the funder/sponsors of the HIA.<br><br>List any conflicts of interest or potential sources of bias. For example, funding for the HIA by any organization or individual with a stake in the outcome of the decision; publicly stated positions on the outcome of the decision by any of the participating organizations; or political mandates that restrict the scope, findings, or recommendations made by the HIA team (particularly relevant for public agencies). |

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| **Section IV. HIA Scope (3-4 pages)** | List the goals of the HIA.<br><br>Describe the process you went through to come up with the HIA scope – start with a discussion of how broad impacts were considered and then narrowed down.<br><br>Describe, if any, the stakeholder input process into the HIA Scope.<br><br>Describe, if any, the role of stakeholder or technical advisory or steering committees.<br><br>Identify issues that you considered but decided not to address in the HIA (for example, if you did not focus on environmental health because you lacked expertise in this area, or because an analysis of impacts to environmental health is already being conducted outside the HIA process).<br><br>Identify who will be affected by the decision.<br><br>Describe any vulnerable populations that were considered as part of the HIA.<br><br>Describe the geographic area that is the focus of the proposal and the assessment.<br><br>Describe the potential health effects. Include pathway diagrams and describe them briefly in words.<br><br>List the prioritized research questions and/or scoping categories (i.e., health outcomes; social, environmental, and economic health determinants) that guided the HIA and the process for prioritizing these.<br><br>Describe the research/assessment methods and significant data sources used in the HIA (e.g., secondary data analysis, quantitative forecasting, primary analysis of existing dataset, new survey data collected, focus groups, interviews, surveys, etc.).<br><br>Describe any data gaps that have been identified and, if any, your plans to address them.<br><br>If necessary, explain the selection or exclusion of particular methodologies and data sources (i.e., acknowledge when available methods were not utilized and why).<br><br>Include the final scope as an appendix to the HIA. |

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| **Section V. Assessment Findings (15-30 pages)** | The assessment section is the meat of the HIA report. At a minimum, this section should include for each specific scoping category/research question analyzed:<br>• A profile of existing conditions, including of health outcomes and health determinants disaggregated by income, race, gender, age, and/or place.<br>• An assessment of potential health impacts to these baseline conditions by the proposal and any alternatives under consideration.<br><br>There are several different approaches you could take to organizing this information in the report:<br>*Option 1 – Organized by baseline conditions and impact assessment:*<br>• First, include a section on baseline conditions for demographics and health determinants and outcomes (i.e., scoping category / research questions). Report findings using quantitative and qualitative data (e.g., in the form of narrative, tables, graphs, maps, quotes, etc.) and literature review findings for each scoping category / research question.<br>• Second, include a separate section discussing predicted impacts to baseline conditions. Discuss impacts based on direction, magnitude, severity, likelihood, and distribution (see below sample table and definitions).<br><br>*Option 2 – Organized by health outcomes and determinants (i.e., scoping categories / research questions):*<br>• Include an initial section on demographics for the geographic areas of concern.<br>• Include a separate section for each health determinant and outcome (i.e., scoping category / research question).<br>• Within each of these categories, report consecutively on:<br>o baseline conditions/literature review findings (e.g., in the form of narrative, tables, graphs, maps, quotes, etc.), and<br>o impact analysis findings; make sure to report on direction, magnitude, severity, likelihood, and distribution (see below sample table and definitions).<br><br><u>For both approaches</u>:<br>Explain how the indicators selected answer the research questions you are addressing. There will likely be multiple indicators used to describe each scoping category and answer each research question. It is important to explain how these were selected, and why they are good indicators to measure the effect you are describing. Literature review findings are often most important here as they make the connection between some specific indicator and the broader issue it's meant to reflect.<br>The impact analysis process requires critical thinking about how baseline conditions of interest may be impacted. See below for sample table for impact analysis findings, including categories of information to include. Some helpful hints in this process:<br>• Impacts can be based on quantitative and/or qualitative predictions. Use your understanding of public health theory, interpretation of the baseline conditions data, stakeholder concerns, and your experience/expertise in making these predictions<br>o One potential process for doing this, if quantitative methods are not available, is bringing together experts/stakeholders to discuss baseline conditions, literature, and the proposal and use a consensus process to develop predictions.<br>o In some cases, there may be conflicting inputs on a single health outcome or indicator. For example, a new light rail station could place low-income families under financial strain as property values increase, at the same time as creating new employment opportunities for the same families. In this case, it may be adequate |

to simply identify and describe both the positive and negative pathways: although this does not result in a clear picture of whether the net impact will be positive or negative, identifying impact pathways can facilitate management strategies that maximize the benefits and minimize the risks.

- Consider evidence that supports and refutes health impacts. Note: it is important not to simply cite studies that support one conclusion if there are other studies that have conflicting results.
- Consider differential impacts by income, race, gender, age, pre-existing health conditions, and/or place.
- Be cautious with generalizations.
- Acknowledge assumptions and limitations.
- The lack of formal, scientific, quantitative or published evidence should not preclude reasoned predictions of health impacts based on experience, expert opinion and accepted principles of public health.

Regardless of the analytic method(s) used, create a table **(see below for example)** that clearly articulates impacts to various scoping categories, including direction of impact, magnitude of impact, severity of impact, likelihood of impact, and distribution of impact. See definitions for these variables below. Note: this would be a longer version of the impacts analysis table included in the Executive Summary.

- If proposal impacts differ based on proposal phase (e.g., construction, production, decommissioning), create separate impacts table for each phase and label them with the appropriate proposal phase.
- If possible, in a narrative format, also speak to:
  - Nature of impacts (e.g., are impacts direct or indirect?)
  - Geographical variations in impacts (e.g., localized, community-wide)
  - Strength and quality of evidence (e.g., high quality quantitative and/or qualitative evidence, not very good quality evidence)
  - Duration of impact (e.g., permanent, temporary)

Consider also including a section on limitations of your Assessment process and findings. For example, identify data gaps that prevented an adequate or complete assessment of potential impacts and describe the uncertainty in any predictions.

**HIA Impact Analysis Summary of Findings**

| Health Outcome/ Determinant | Direction | Magnitude | Severity | Likelihood | Distribution |
|---|---|---|---|---|---|
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Responses to use in above table:

- Direction of Impact:
  - Positive = Changes that may improve health
  - Negative = Changes that may detract from health
  - Uncertain = Unknown how health will be impacted
  - No effect = No effect on health
- Magnitude of Impact:
  - Low = Causes impacts to no or very few people
  - Medium = Causes impacts to wider number of people

    - High = Causes impacts to many people
    - *Note that this is relative to population size*
- Severity of Impact:
    - Low = Causes impacts that can be quickly and easily managed or do not require treatment
    - Medium = Causes impacts that necessitate treatment or medical management and are reversible
    - High = Causes impacts that are chronic, irreversible or fatal
- Likelihood of Impact:
    - Likely = it is likely that impacts will occur as a result of the proposal
    - Possible = it is possible that impacts will occur as a result of the proposal
    - Unlikely = it is unlikely that impacts will occur as a result of the proposal
    - Uncertain = it is unclear if impacts will occur as a result of the proposal
- Distribution of Impact:
    - Name subpopulation impacted more (e.g., "low-income residents impacted more"; "Blacks impacted more") or "equal impacts"

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| **Section VI. Recommen-dations (2-3 pages)** | Start this section by providing a bulleted list of findings by "highly likely impacts", "likely impacts", and "plausible, but not well-supported impacts" – this could be the same list as is included in the Executive Summary.<br><br>The report should include specific recommendations to manage the health impacts identified, including alternatives to the decision, modifications to the proposal, or mitigation measures. Order identified recommendations, mitigations, and alternatives in one of the following ways:<br>• Based on impacts of highest concern (i.e., based on magnitude and certainty) to lowest concern.<br>• Based on scoping category, from highest concern to lowest concern.<br>• Based on feasibility of implementing the recommendation.<br><br>For each recommendation, identify appropriate indicators (health outcomes or health determinants), a suggested plan for monitoring them, the appropriate agency/entity to undertake monitoring, and potential funding sources.<br><br>In writing recommendations, pay attention to the legal and policy context in which they will need to be implemented. To the extent possible, for recommendations that would be implemented through regulation or formal government policy, draft recommendations that could be implemented within the applicable policy context.<br><br>Be transparent about whether there was a lack of consensus among HIA participants about the recommendations, and how decisions were made.<br><br>While there may be many recommendations for all of the HIA findings, prioritize 3 – 6 recommendations to highlight in the Executive Summary. |

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| **Section VII. Monitoring (1-2 pages)** | Describe your monitoring plan including indicators to be monitored, by whom, when, how, and methods for reporting monitoring findings.<br><br>If you have an evaluation plan, consider including it here. |

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| **Section VIII. Conclusion (1 page)** | Reiterate the value of conducting the HIA, its contribution to debate around the proposal, and highlight any anticipated next steps. |

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| **Section IX. References** | Include full list of references cited in the HIA report. |

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| **Section X. Appendices** | Include the following types of information:<br>• Methodological explanations of data analysis<br>• More detailed focus group/survey write-ups<br>• Sample surveys and/or focus group protocols<br>• Lists of stakeholders who participated in the HIA process<br>• Background materials on the proposal<br>• HIA scoping grids/worksheets |

# Appendix I. Environmental Impact Report Comment Letter

HUMAN IMPACT PARTNERS

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October 26, 2009

Mr. Michael Wright
CNWS Reuse Project Director
City of Concord
1950 Parkside Drive
MS/56
Concord, CA 94519

**RE: Comments on the Draft Revised Environmental Impact Report for the Concord Community Reuse Plan**

Dear Mr. Wright:

I am writing on behalf of Human Impact Partners in collaboration with the Community Coalition for a Sustainable Concord, concerning the Draft Revised Environmental Impact Report (DEIR) for the Concord Community Reuse Project (Reuse Project). We see great opportunity in the Reuse Project for healthy and sustainable development that will ultimately create conditions for existing and future Concord residents to lead healthy lives. However, we are concerned about certain aspects of the DEIR that fail to address health. California Environmental Quality Act (CEQA) specifically requires public health effects of proposed projects to be evaluated:

> The discussion should include relevant specifics of the area, the resources involved, physical changes, alterations to ecological systems, and changes induced in population distribution, population concentration, the human use of the land (including commercial and residential development), *health and safety problems caused by the physical changes*, and other aspects of the resource base such as water, historical resources, scenic quality, and public services. (CCR§15126.2 (a), italics added for emphasis)

The DEIR does not, in all cases, analyze and propose mitigations to address the health impacts of the Reuse Project. Many of our comments reflect the Health Impact Assessment of the Reuse Project released in January 2009,[1] which is attached to this letter as supporting evidence.

First, we applaud the City of Concord for acknowledging in the Revised DEIR the importance of providing accessible park space for current city residents who currently do not have sufficient parks in their own neighborhoods. The Recreation Chapter in the updated DEIR demonstrates the City's intention to invite *existing* Concord residents to access new parks on the former Concord Naval Weapons Station Site (Site). This additional park access will provide residents with great opportunities for physical activity and other recreational activities. Stated as an assumption in Section 15.3.1:

> Both alternatives are designed around a system of green corridors that serve several functions. The green corridors link together all the uses on the site, from the transit oriented development (TOD) uses located around the North Concord/Martinez BART Station to the open space areas

on the southern and eastern sides of the site. *The green corridors would also support recreational walking and biking activities, and could also be used to link existing Concord neighborhoods to open space areas on site.* (p. 15-21, italics added for emphasis).

*Thank you for incorporating this language into the Revised DEIR, and by doing so, formalizing your commitment to providing access to on-site parks and open space for Concord residents throughout the city.*

The remainder of this letter documents our concerns about the Transportation; Air Quality; Population, Housing and Employment; and Public Service chapters. In summary, we recognize that the significant increase in vehicle miles traveled associated with the Reuse Project will have impacts on pedestrian safety, harmful air emissions including greenhouse gases, and congestion. As a mitigation to these impacts, the Reuse Project should provide sufficient affordable housing to accommodate a variety of wage-earners on the site. By increasing opportunities for workers to live near jobsites rather than commuting into Concord from lower-cost housing in outlying communities, vehicle use and its associated problems would be minimized. Access to public services near housing would allow residents to walk or bicycle to many destinations, which would also reduce vehicle use. While concurrent improvements in pedestrian/bicycle and transit facilities are included in the DEIR as strategies for reducing traffic volumes, a funding strategy should be clarified. In general, the DEIR fails to highlight differences between the two alternatives and does not include enough specific and measurable mitigations.

## A. Transportation (Chapter 4)

### *1. The DEIR analyzes traffic volume impacts at various existing intersections and roadways; however, it does not analyze how the additional traffic impacts risks to pedestrians and bicyclists*

The DEIR acknowledges that developing the Site with either the Preferred Alternative or the Concentration and Conservation Alternative would increase traffic volumes at many existing intersections and roadways (i.e., Impacts Transportation 3, 4, 11, 28, 29, and 37). Transportation demand management (TDM) programs are listed as mitigations, including bicycle and pedestrian facilities. *However, the increased risk to pedestrians and bicyclists that is associated with higher vehicle volume is not acknowledged as its own impact.* While a threshold of significance for pedestrians does not exist, "thresholds do not substitute for the agency's use of careful judgment in determining significance."[2] Therefore, changes in vehicle speed, vehicle volume, and roadway configurations may all affect pedestrian and bicycle safety[3] [4] [5] [6] [7] [8] and should be analyzed. *Methods for forecasting impacts on pedestrian collisions exist (e.g., Wier et al., Accident Analysis and Prevention, Volume 41, Issue 1, January 2009, pages 137-145),[9] and should be applied to this analysis.*

If impacts to pedestrians and bicyclist are forecasted for the Project, evidence-based mitigations for improving pedestrian/bicyclist safety should be documented in the Final Revised EIR. Such mitigations include design features like street lighting, crosswalks, pavement markings, bulb-outs and bollards (large posts) at all intersections, bike lanes on many streets, as well as enforcement of vehicle speed limits.

### *2. The DEIR fails to acknowledge differences between Alternatives in VMT and Daily Vehicle Trips found by CCTA modeling*

Section 4.3.5 of the DEIR presents results from the Contra Costa Transportation Authority (CCTA) modeling of predicted daily vehicle trips, average vehicle trip lengths, and vehicle miles traveled (VMT) associated with each alternative. The following table presents CCTA model findings:

| *Scenario* | *Population* | *Employment* | *Full-time college students* | *Daily Vehicle Trips* | *Average Trip length (miles)* | *Daily VMT* |
|---|---|---|---|---|---|---|
| Preferred Alternative | 29,033 | 27,354 | 10,000 | 172,967 | 10.2 | 1,763,148 |
| Concentration and Conservation | 23,371 | 23,606 | 10,000 | 142,885 | 10.5 | 1,493,717 |

As presented in Table 4-21 (p. 4-72) and above, CCTA modeling revealed that the Preferred Alternative would generate more daily vehicle trips and VMT than the Concentration and Conservation Alternative. Rather than highlight the lower daily vehicle trips and VMT generated by the Concentration and Conservation Alternative with respect to the Preferred Alternative, the DEIR claims that the best measure by which to compare the two alternatives is trip length, which was found by CCTA modeling to be lower (and thus better) for the Preferred Alternative than the Concentration and Conservation Alternative.

We are unclear about why trip length is highlighted in this argument. The reliance on trip length as an indicator of vehicle use is disingenuous and in conflict with standard protocols. VMT, the product of the number of vehicle trips and trip length, is the measure most widely used by transportation planners and engineers for evaluating impacts of vehicle use on a regional scale. VMT is a well-documented measure for considering negative impacts on physical activity[10] and obesity.[11] Air quality impacts of vehicles are dependent on VMT, trip length, and congestion.[12] Vehicle volume, a localized measure of vehicle use that is associated with a region's VMT, impacts vehicle congestion and risk of collisions. Trip length, on the other hand, is a flawed measure if used by itself. For example, a project could generate only ten vehicle trips with an average trip length of 200 miles, while another project could generate 100,000 trips with an average length of two miles. Using only trip length as an indicator of vehicle use, the latter project that generates an average trip length of two miles would be judged as having a smaller impact than the project generating an average trip length of 200 miles. Clearly, the opposite would be true.

*The Final Revised EIR should acknowledge the modeling results for VMT and daily vehicle trips, as well as their relationships to the above impacts, as indirect environmental and health impacts. These modeling results show that the Preferred Alternative would lead to greater negative health and environmental impacts than the Concentration and Conservation Alternative. Rationale for limiting VMT is available for reference (e.g., State of California Office of Planning and Research, Governor's Environmental Goals and Policy Report, November 10, 2003).*

***3. The DEIR fails to report an evidence-based strategy for reducing traffic impacts***

In Section 4.3.5.3, "Summary of Transportation Impacts," the DEIR reports, "A relative balance of jobs and employed residents within the site" is a strategy common to both alternatives to limit traffic impacts (p. 4-88). Without any evidence to back it, this is a conclusory statement and

should not be documented as a strategy affecting traffic impacts. Other analyses of the Reuse Project have shown that while there is a relative jobs-housing balance at the summary level, there is not a good balance when disaggregated by housing cost and income, and that this will be a source of additional traffic, rather than a mitigation to increased traffic. As *discussed in greater detail in Section C-2 of this letter, the Final Revised EIR should disaggregate by housing cost and job wages in its calculation of the jobs/housing ratio. Provision of affordable housing that matches local wage levels for reducing VMT is a recommendation of the Regional Targets Advisory Committee Pursuant to Senate Bill 375.*[13] *There are methodologies for assessing a jobs/housing balance in this way (see Human Impact Partners 2009*[14] *and UC Berkeley 2009*[15]*).*

*Evidence-based strategies to reduce traffic impacts include higher residential density, unbundled parking, and discounted or free transit passes.*[16] [17] [18]

***4. The DEIR fails to compare the two alternatives based on public transit ridership***

Public transit is an asset in any community because it represents a publicly accessible means of transportation. Public transit ridership is inversely related to VMT,[19] and thus it has important health and environmental implications such as improved air quality,[20] increased physical activity,[21] reduced obesity,[22] and reduced stress.[23] [24] Many Americans achieve their recommended daily amount of physical activity by walking a total of 30 minutes to and from public transit during their commute.[25] [26]

CCTA transit ridership forecast information shown in Tables 4-22, 4-23, and 4-24 (p. 4-73 – 4-74) shows that the Concentration and Conservation Alternative would produce more transit use than the Preferred Alternative. Therefore, the Concentration and Conservation Alternative offers more of the benefits to health and the environment that are associated with reduced vehicle use. For example, less air pollution and greenhouse gases would be generated by development of the Concentration and Conservation Alternative. *Impact Transportation 22 and Impact Transportation 49 in the Final Revised EIR should compare the transit ridership impacts of the two alternatives, which would illuminate that the Concentration and Conservation Alternative would generate less negative impact to health and the environment.*

***5. Funding for pedestrian/bicycle facilities and additional transit service has not been identified, and thus feasibility of these mitigations is unknown.***

While the DEIR states that pedestrian and bicycle facilities will be implemented as a TDM program for project impacts on existing Concord intersections (see comment A-1), it is unclear where funding will come from. *In order to make pedestrian and bicycle improvements a feasible mitigation, funding sources for these facilities, as well as related safety mitigations, should be explicitly stated in the Final Revised EIR.*

In a June 2008 comment letter responding to the 2008 DEIR issued for the Reuse Project,[27] County Connection, the provider of bus transit service through central Contra Costa County, expressed concern about the lack of funding for bus transit service proposed in Reuse Project alternatives and urged the City of Concord to include a transit finance component in the DEIR finance plan.[28]

We are concerned about County Connection's lack of funding, and we recognize that if no funding is provided for public transit, a vital transit resource for equitable access to healthcare, healthy food, workplaces, and school, and with implications for reducing VMT and thus impacts to air quality, will be excluded from the Reuse Project. *In order to realistically state additional*

*public transit service as an impact (p. 4-129, 4-130, 4-155) or mitigation (Impacts 3, 4, 11, 28, 29, and 37; p. 4-111 to 4-146) a transit finance strategy should be included in the Reuse Project and presented in the Final Revised EIR.*

## B. Air Quality (Chapter 11)

The most significant human health-related air quality impacts from the proposed Concord Community Reuse Project are likely to be increased PM2.5 concentrations due to increased motor vehicle traffic as a result of the project and diesel exhaust, including PM2.5, from project construction. Increases in PM2.5 exposures may lead to increases in mortality, chronic bronchitis, heart attacks, asthma attacks, and workdays lost due to respiratory distress. Increases in diesel exhaust exposures may lead to increases in lung cancer and respiratory impacts. Given the likelihood that the proposed project will lead to significant increases in both PM2.5 and diesel particulate matter (PM), the potential impacts from these pollutants is not adequately characterized in the DEIR.

### *1. The DEIR fails to highlight the superiority of Concentration and Conservation Alternative in terms of PM2.5 emissions, and fails to evaluate spatial differences in project emissions between the two alternatives*

While it is helpful to evaluate increased emissions due to project-related operations (Impact Air Quality 1, Table 11-4 p. 11-20), the discussion characterizing the impacts from all project alternatives as significant and unavoidable (p. 11-20) is overly simplistic and misleading. First, even though both build alternatives exceed the chosen threshold, the two alternatives are clearly not equivalent in terms of their emissions increases. For example, the Concentration and Conservation Alternative would result in 118.75 tons per year (tpy) of PM2.5 emissions, versus 146.71 tpy of PM2.5 emissions for the Preferred Alternative (Table 11-4), which is a 24% difference. This difference is potentially very significant, given the high likelihood of PM2.5-related health impacts. Second, the location of pollutant impacts is not obvious from a simple comparison of project emissions (Impact Air Quality 1, Table 11-4, p. 11-20). The project emissions are likely to vary spatially between the two alternatives and it is impossible to evaluate the differences between the alternatives with this simple analysis.

*The Final Revised EIR should, at a minimum, quantify the change in ambient PM2.5 concentration using a suitable dispersion model, such as AERMOD, over the entire project domain. For both build alternatives, the Final Revised EIR should include contour plots of increases in PM2.5 concentrations for the two build alternatives in 2030 compared to the no-build alternative in 2030. These maps should identify any potentially impacted residential areas and other sensitive receptors, especially schools and day care centers. In terms of significance levels, any increase in PM2.5 concentrations is potentially associated with adverse health outcomes, even below the State and National Ambient Air Quality Standards (NAAQS). While it is possible to quantify the mortality impacts of small potential PM2.5 increases on the project-scale, it would also be appropriate for the Final Revised EIR to simply note where any increases in PM2.5 may occur and reference existing health studies* (e.g. Pope et al. *Journal of the American Medical Association*, Volume 287, March 2002, 1132-1141; and Laden et al., *Am. J. Respir. Crit. Care Med.*, Volume 173, Number 6, March 2006, 667-672) *for further information.*

### *2. The DEIR does not adequately address the negative impacts of VMT increases associated with both alternatives*

Impact Air Quality 3 (p. 11-22 – 11-23) states that both alternatives will lead to proportionally greater increases in VMT than population, comparing the 2030 No Project alternative to 2030 conditions for each project alternative. The projected population increases are 17.2% and 13.9% for the Preferred and Concentration and Conservation Alternatives, respectively, but VMT is projected to increase by 29.2% and 24.5%, respectively (Table 11-6). Thus, not only will the build alternatives lead to an increase in population and thus VMT, but they will also do so in a manner that is more detrimental than the existing urban design. The DEIR statement that "In spite of [the proposed mitigation] measures, total VMT growth for the project is projected to exceed population growth" (p. 11-23) is inadequate for addressing this important issue.

*To the greatest extent possible, the Final Revised EIR should attempt to quantify the impacts of the proposed mitigation measures, including citing of academic literature on quantifiable benefits associated with mixed-use transit-oriented development, increases in urban connectivity, other measures to enhance walking and biking, and similar efforts to reduce VMT. In all cases, the extent to which the proposed VMT increase can be brought in line with project population increases should be evaluated. Where uncertainty exists, the Final Revised EIR should characterize the range of potential benefits.*

***3. The DEIR fails to quantify ambient diesel PM2.5 emissions and resulting increase in cancer risk generated by the project (Impact Air Quality 4 and 5)***

Although there are likely project-generated emissions of air toxics not mentioned in the DEIR such as benzene, 1,3-butadiene, acrolein, acetaldehyde, and formaldehyde, it is appropriate to focus on the impacts of diesel PM (Impact Air Quality 4 and 5; p. 11-24 – 11-25) as the primary toxic air contaminant of concern from the proposed project operations. However, similar to our recommendation in comment B-1 above, the potential changes in diesel PM2.5 emissions should be quantified. Quantification would allow the potential impacts from the proposed build alternatives to be better understood, and also help inform future land-use decision-making such as the siting of schools.

*The Final Revised EIR should quantify the change in ambient diesel PM concentrations using a suitable dispersion model, such as AERMOD, over the entire project domain. To the extent possible, the Final Revised EIR should include quantified emissions and concentration changes for both project construction – using representative diesel construction activity and project lay-down areas – and long-term changes in traffic.*

*The Final Revised EIR should use the calculated diesel PM concentration change to calculate increased cancer risk. This can be accomplished by multiplying an assumed lifetime diesel PM exposure times California Office of Environmental Health Hazard Assessment's (OEHHA) diesel exhaust cancer potency factor (i.e. $3x10^{-4}$ $(mg/m^3)^{-1}$). For construction impacts, it is standard procedure to multiply by the number of years of construction activity and then divide by the standard lifetime of exposure, i.e. 70 years. For project operations, it is standard to use the predicted ambient diesel PM concentration for the ultimate build year (i.e., compare each build alternative in 2030 to the No Project Alternative in 2030) and calculate risk as if that concentration were breathed over a lifetime.*

*For both construction and project operations (i.e. traffic increases), the Final Revised EIR should include contour plots of increases in diesel PM-associated cancer risks for the two build alternatives compared to the no-build alternative. These maps should identify any potentially impacted residential areas and other sensitive receptors, especially schools and day care centers. The contour plots for construction and project operations can be done separately, but*

*risks for both should be added together for purposes of comparing to significance levels. In terms of significance levels, it is routine under California's Environmental Quality Act (CEQA) and California's AB2588 toxics hotspots program to compare to 10 in a million increased cancer risk. Finally, the Final Revised EIR should quantitatively estimate the potential benefits of the mitigation measures in Table 11-7, showing the unmitigated build alternatives and the mitigated build alternatives in contour plots.*

## C. Population, Housing and Employment (Chapter 13)

### *1. The DEIR fails to address lack of sufficient affordable housing as significant impact*

The affordability of an individual's or family's housing has a huge impact on health. Living in affordable housing allows enough money for other necessities such as health care, nutritious food, transportation, childcare, and education expenses, and can prevent residential displacement, homelessness, overcrowding, and segregation.

The Reuse Project does not offer enough affordable housing to low- and moderate-income residents who will live and work on the Site, and does not consider this deficiency as a significant impact. The City intends to meet Concord's Inclusionary Housing Ordinance for 10% affordable housing. However, the DEIR acknowledges that the City of Concord has not met Regional Housing Needs Assessment (RHNA) targets for very low-, low- and moderate-income levels in the past (p. 13-8). RHNA targets are an important tool for mitigating health and environmental effects of development projects.

According to Policy 1.1 of Concord's 2003 Housing Element, Concord strives to achieve RHNA objectives.[29] While the DEIR reports that "A jurisdiction is responsible for providing the zoning for the four economic income categories…but it is not responsible for construction of these units" (p. 13-8), we believe that in this case, more planning and enforcement is necessary. Based on Concord's history and the nature of market forces, *the Reuse Project should identify specific and enforceable strategies for ensuring that RHNA targets are met.*

### *2. The DEIR includes an inadequate jobs/housing balance analysis, and thus both Reuse Project alternatives fail to comply with SB 375*

The Reuse Project will generate a demand for jobs in sectors that pay low wages (e.g., service sector), and as a result, workers won't be able to afford the housing provided on the Site. Therefore, there is potential for many employees to live outside of Concord, commute long distances between their homes and workplaces, and contribute to poor air quality and greenhouse gas emissions in the region.

On pages 13-10 and 13-11, the DEIR presents information on Assembly Bill 32 (AB 32) and Senate Bill 375 (SB 375). Together, these policies are in place to curb greenhouse gas emissions by controlling urban sprawl and thereby reducing vehicle miles traveled. The DEIR states that this information is provided "in the context of jobs/housing balance" (p. 13-10) and that these policies affect "the geographic distribution of jobs and housing" (p. 13-10). The DEIR states as an assumption that "Both alternatives will be developed to comply with the intent of AB 32 and SB 375 to provide transit-oriented development (TOD) and other features related to population, housing, and employment" (p. 13-13). Again on page 13-14, the DEIR suggests that the Preferred Alternative's "planned, transit-oriented, mixed-use growth is consistent with the goals and policies of AB 32 and SB 375 regarding land use, housing, and transportation."

Vehicle emissions, including greenhouse gas emissions, are harmful to public health. Air

pollutants emitted from vehicles are associated with asthma,[30] [31] chronic obstructive pulmonary disease,[32] cardiovascular disease, [33] and cancer.[34] Greenhouse gases, such as carbon dioxide and ozone, contribute to climate change, which may increase heat-related illness and death, health effects related to extreme weather events, health effects related to air pollution, water- and food-borne disease and vector- and rodent-borne disease.[35] [36]

Impact Population, Housing and Employment 2 (related to the Preferred Alternative; p. 13-14) and Impact Population, Housing and Employment 5 (related to the Concentration and Conservation Alternative; p. 13-16) report the shift in the jobs/housing balance that would result from development, and in both cases this shift is considered less than significant. The DEIR states that the on-site jobs-to-housing ratios would be 2.16 and 2.08 for the Preferred Alternative and the Concentration and Conservation Alternative, respectively. The DEIR reports, "The higher jobs-to-housing ratio provided by the Preferred Alternative supports ABAG's Smart Growth Strategy as well as AB 32 and SB 375 in that the Preferred Alternative will allow a greater proportion of residents in Concord to work within their neighborhoods and immediate communities" (p. 13-15). A similar conclusion is made for the Concentration and Conservation Alternative (p. 13-16).

However, the jobs/housing ratios reported in the DEIR simply consider the number of jobs to the number of housing units on the Site, and fail to include a balance of *job wages* to *housing costs*. The City of Concord's 2003 Housing Element acknowledges that a simple comparison of jobs to housing or employed residents is not sufficient for consideration of environmental goals:

> There are many benefits from a balance between jobs and employed residents ratio of 1.0, including improved air quality, less congested freeways, reduced fuel consumption, reduced expenditures on major transportation projects, a labor supply more closely matched to local employment needs, and savings in travel time for both businesses and individuals. However, a 1.0 ratio between jobs and employed residents does not guarantee a reduction in commute trips. The analysis presented here does not address the issue of matching housing costs and types to the needs and incomes of the community's workforce. Cities can continue to exchange workers regardless of a one-to-one correlation of employed residents to total jobs. Although Concord has expanded its jobs base, many residents still commute elsewhere to work, while many of the people who work in Concord are living in other communities, due to housing costs and availability or other lifestyle choices.[37]

A report recently completed by UC Berkeley graduate students,[38] which analyzed the balance of job wages and housing costs as proposed in the Clustered Villages Alternative, found that taking into account the anticipated wages offered by onsite jobs and onsite housing costs, over 17,000 CNWS employees would not afford to live on the CNWS Site. In effect, this is a jobs-housing balance of *11:1* for people earning moderate incomes or less. Thousands of employees on the CNWS Site would need to commute to work from outlying communities on a daily basis. Based on an analysis of regional housing costs for wage earners living on the CNWS Site, the UC Berkeley analysis estimated that workers would commute from as far as 50 miles away. Thus, future Site activities on the CNWS would lead to significant impacts on air quality including greenhouse gases. Therefore, the jobs-housing balance offered by both Alternatives would not comply with state polices to reduce greenhouse gas emissions (AB 32 and SB 375).

Provision of affordable housing that matches local wage levels for reducing VMT is a recommendation of the Regional Targets Advisory Committee Pursuant to Senate Bill 375.[39] In addition, the 2003 State of California General Plan Guidelines call for ensuring environmental sustainability by matching employment potential, housing demand by income level and type and

new housing production.[40] *In order to address the goals of AB 32 and SB 375, the DEIR should include a jobs/housing balance analysis that includes consideration of wages and housing affordability. The methodologies used in either the UC Berkeley report or the CNWS Health Impact Assessment[41] could be used to conduct such an analysis. Increasing the amount of affordable housing and/or increasing the minimum wages offered by jobs on the site are mitigations for both alternatives that should be considered in the DEIR.*

***3. The DEIR states as an assumption that both alternatives address the environmental justice policies of the California EPA by providing a mix of housing to accommodate workforce housing for low- and moderate-income residents; however, the policy is not explained or properly referenced***

The DEIR reports in Section 13.3.1 the assumption that "The alternatives address the environmental justice policies of the California Environmental Protection Agency (EPA) (www.calepa.ca.gov/EnvJustice/) by providing a mix of housing to accommodate workforce housing for low- and moderate-income residents in accordance with the City's Inclusionary Housing Ordinance" (p. 13-13). The webpage associated with the provided link does not clarify policies requiring a mix of housing to accommodate a low- and moderate-income workforce.

*If environmental justice policies of California EPA are referenced in the Final Revised EIR, they should be clearly outlined, along with the specific ways in which the alternatives address them.*

## D. Public Services (Chapter 14)

***1. The DEIR should consider residential access to public services in order to comply with AB 32 and SB 375.***

The Public Services chapter of the DEIR discusses the planned development of additional police, fire protection and emergency medical services (EMS), schools, and other community services on the Site. It makes the assumption that both alternatives will include at least one new community center on the Site, but does not differentiate the two alternatives by their access to community centers.

Access to public services is necessary to comply with AB 32 and SB 375. The presence of a variety of businesses and services located within walking distance of people's homes can reduce dependence on cars for everyday needs, which in turn can reduce greenhouse gas emissions and health impacts related to air pollution and noise levels. In addition, public services, including retail and community centers, and healthcare facilities, are essential for health. The presence of a supermarket in a neighborhood predicts higher fruit and vegetable consumption and a reduced prevalence of overweight and obesity.[42] [43]

Both alternatives include space for public services and retail outlets, and therefore, depending on the types of businesses that locate here, there lies great potential for positive health and environmental benefits associated with a diversity of retail and public services.

However, the DEIR does not include resources besides police, fire, EMS, schools, and community centers in its analysis, nor does it include a comparison of the two alternatives based on access to these resources. We are aware that this is a programmatic DEIR and is not required to achieve the level of detail that a project DEIR would. Nevertheless, to make this

chapter more useful for evaluating air quality and greenhouse gas impacts of each alternative, *the Final Revised EIR should include a thorough analysis comparing the two alternatives based on accessibility of and proximity to a full range of public services such as the following:*

- *Public schools;*
- *Hospital and public health clinic;*
- *Library;*
- *Performance/cultural space;*
- *Post office;*
- *Public art;*
- *Recreational facility;*
- *Open spaces;*
- *Community garden; and*
- *Childcare/daycare.*

*The plans should include incentives for the inclusion of the following retail services, and the Final Revised EIR should include an analysis of proximity of housing to a mix of these retail services:*

- Auto repair;
- Banks/credit unions;
- Beauty salon/barber shop;
- Bike repair;
- Dry cleaner;
- Eating establishments;
- Gym/fitness center;
- Hardware store;
- Laundromat;
- Pharmacy
- Retail food market (including supermarket, produce store, and other retail food stores); and
- Entertainment (e.g., video store or movie theater).[44]

*Proximity benchmarks for healthy development included in the Healthy Development Measurement Tool (HDMT)[45] could be used for this assessment.*

## Conclusion

Human Impact Partners is thrilled about this opportunity to plan healthy development in Concord, and we appreciate the chance to comment on the Revised DEIR. Thank you for considering our feedback and recommendations. We would be happy to answer any questions you may have regarding the comments contained in this letter.

Sincerely,

Celia Harris
(on behalf of Human Impact Partners)

[1] Human Impact Partners, January 2009. Concord Naval Weapons Station Reuse Project Health Impact Assessment.

[2] State of California Governor's Office of Planning and Research. CEQA Technical Advice Series: Thresholds of Significance: Criteria for Defining Environmental Significance. Available at: http://ceres.ca.gov/ceqa/more/tas/Threshold.html
[3] Roberts, I et al. 1995. Effect of Environmental factors on risk of injury of child pedestrians by motor vehicles: A case-control study. British Medical Journal. 310: 91.
[4] Ewing R, Frank L, Kreutzer R. Understanding the Relationship between Public Health and the Built Environment: A Report to the LEED-ND Core Committee. 2006.
[5] Brugge D, Lai Z Hill C, Rand W. Traffic injury data, policy, and public health: lessons from Boston Chinatown. Journal of Urban Health 2002; 79: 87-103.
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[9] Wier et al. An area-level model of vehicle-pedestrian injury collisions with implications for land use and transportation planning. Accident Analysis and Prevention, Volume 41, Issue 1, January 2009, pages 137-145
[10] Frank LD, Saelens BE, Powell KE, Chapman JE. 2007. Stepping towards causation: Do built environments or neighborhood and travel preferences explain physical activity, driving, and obesity? Soc Sci Med 65(9):1898-1914.
[11] Lopez-Zetina J, Lee H, Friis R. 2006. The link between obesity and the built environment: Evidence from an ecological analysis of obesity and vehicle miles of travel in California. Health Place 12(4):656.
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[13] Regional Targets Advisory Committee (RTAC), September 2009. Recommendations of the Regional Targets Advisory Committee (RTAC) Pursuant to Senate Bill 375.
[14] Human Impact Partners, January 2009. Concord Naval Weapons Station Reuse Project Health Impact Assessment.
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[18] MTC, Smart Growth Parking Toolbox, 2007 http://www.mtc.ca.gov/planning/smart_growth/parking_seminar/Toolbox-Handbook.pdf
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# Appendix J. FAQ on Integrating HIA into EIA

**1. What is Health Impact Assessment (HIA)?**

Many land-use and transportation decisions affect health, even ones that may not seem to be specifically about health. For example, a decision to widen roadways will have impacts on noise and air quality for adjacent residents and on the safety of pedestrians along the street; noise, air quality and pedestrian safety are related to health outcomes that include asthma, cardiovascular disease, hypertension, injury, and mortality. HIA is a straightforward and cost-effective tool that can be used to assess planning and policy proposals and make recommendations to improve the health outcomes associated with those proposals.

HIA is formally defined as a combination of procedures, methods and tools that systematically judges the potential, and sometimes unintended, effects of a proposed project, plan, or policy on the health of a population and the distribution of those effects within the population. HIA identifies appropriate actions to manage those effects. (Adapted from the IAIA, 2006)

There are five stages in a HIA process:

| | |
|---|---|
| Screening | Determines the need and value of a HIA |
| Scoping | Determines which health impacts to evaluate, methods for analysis, and a workplan |
| Assessment | Provides:<br>1) a profile of existing health conditions<br>2) evaluation of potential health impacts<br>3) strategies to manage identified adverse health impacts |
| Reporting | Includes:<br>1) development of the HIA report<br>2) communication of findings and recommendations |
| Monitoring | Tracks:<br>1) impacts on decision-making processes and the decision<br>2) impacts of the decision on health determinants |

**2. What health issues does a HIA consider?**

Environmental, social, demographic, and economic conditions drive the health and wellbeing of communities. Factors such as housing, transportation, employment and income, noise, air quality, access to goods and services, access to parks, and social networks have well-demonstrated and reproducible links to health outcomes. A HIA analyzes health from a broad perspective by evaluating how a proposed project, plan, or policy affects these factors – often collectively referred to as "determinants of health" – and in turn, how impacts to these factors are likely to positively or adversely influence health.

**3. What are benefits to conducting Health Impact Assessment?**

Overall, the information from a HIA, and close collaboration between public health experts, affected communities, and the decision-makers on a project, lead to practical, evidence-driven recommendations that address identified health concerns to the extent possible within the limitations of the regulatory or decision-making process.

- HIAs provide sound, objective data on health impacts. By using this information, potentially unexpected health consequences and unanticipated costs can be identified and thus avoided.
- HIA helps develop healthier communities by identifying design solutions that address the root causes of many prominent health problems like asthma, diabetes, and cardiovascular disease.
- The HIA process can be used to build consensus and buy-in by addressing the affected community's fears about a project directly and transparently and by providing practical solutions.
- HIAs help focus community involvement on real health concerns and on feasible mitigations to those health issues.
- Health issues are typically important to community members and HIA can serve to engage community residents in decisions that impact their lives.
- HIAs give project proponents a way to recognize positive health contributions of projects on communities. It also given businesses the information they need to distinguish themselves as smart planners and build positive working relationships with the community.
- HIAs help decision-makers by ensuring that any potential concerns about a project are identified and addressed early on.

**4. Is a comprehensive analysis of health impacts required under NEPA/CEQA?**
As stated in "Public Health Analysis Under the National Environmental Policy Act", a white paper by Wernham and Bear:

> The inclusion of a robust, systematic approach to public health is supported by NEPA, the regulations issued by the Council on Environmental Quality (CEQ), the agency in the Executive Office of the President charged with overseeing implementation of NEPA, Executive Orders 12898 and 13045, and available guidance on NEPA and environmental justice.
>
> *Congressional Intent*
> In using the term "human environment," Congress signaled that protection of human communities was a fundamental purpose of the legislation. In the debates leading to NEPA's enactment, Senator Henry Jackson stated: "When we speak of the environment, basically, we are talking about the relationship between man and these physical and biological and social forces that impact upon him. A public policy for the environment basically is not a public policy for those things out there. It is a policy for people."
>
> *Health in NEPA*
> NEPA mentions health a total of six times. Among NEPA's fundamental purposes is: "promote efforts which will prevent or eliminate damage to the environment and biosphere and stimulate the health and welfare of man." NEPA § 102 [42 USC § 4321]
>
> NEPA is intended, furthermore, to: "assure for all Americans safe, healthful, productive, and aesthetically and culturally pleasing surroundings." [42 USC § 4331]
>
> And finally to: "attain the widest range of beneficial uses of the environment without degradation, risk to health or safety, or other undesirable and unintended consequences." [42 USC § 4331]

*Health in the CEQ Regulations*

Several general provisions of CEQ's NEPA regulations support the inclusion of health.

First, agencies respond to substantive public concerns in the draft EIS [40 CFR § 1503.4]. When, therefore, an agency can anticipate substantive health concerns based on scoping, it is sensible to include these issues for analysis in the DEIS.

Second, in determining whether an effect may be significant (and therefore require analysis in the EIS) one of the factors that agencies should consider is "the degree to which the effects on the human environment are likely to be highly controversial" [40 CFR § 1508.27 (b) 4]. Commonly, health often figures among the strongest concerns expressed by affected communities.

The CEQ regulations also specifically define health as one of the effects that must be considered in an EIS or an EA. In defining "effects," the regulations state that:

"Effects" includes ecological, aesthetic, historic, cultural, economic, social, or health, whether direct, indirect, or cumulative." [40 C.F.R. § 1508.8] And, the regulations instruct agencies to consider "the degree to which the proposed action affects public health or safety" in determining significance. [40 C.F.R. § 1508.27]

*Health in Executive Orders*

Executive Order 12898 instructs agencies to: "make achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations in the United States."

Similarly, Executive Order 13045 states that agencies must: "make it a high priority to identify and assess environmental health risks and safety risks that may disproportionately affect children; and ... shall ensure that its policies, programs, activities, and standards address disproportionate risks to children that result from environmental health risks or safety risks."

*Statements relevant to NEPA-based health analysis in Federal Guidance*

CEQ guidance on implementing Executive Order 12898 contains several suggestions relevant to public health analysis, including:

- Lead agencies should involve public health agencies and clinics
- Agencies should review relevant public health data (as for any other resource)
- Agencies should consider how interrelated cultural, social, occupational, historical, or economic factors may contribute to health effects of the proposed action and alternatives.

**5. What is the relationship between Health Impact Assessment and Health Risk Assessment (HRA)?**

Health Risk Assessments are sometimes conducted as part of EIRs and sometimes conducted outside the EIR process. This is true of HIA as well. While there is significant overlap between HIA and the theoretical framework for HRA, in practice, HIA and HRA differ substantially because HRA is carried out in a manner much more limited than its theoretical framework allows for. Below we compare and contrast existing practice of HRA and HIA:

- The purpose of HIA is to make evidence based judgments on the health impacts of a decision and to make health-promoting recommendations while the purpose of HRA is to quantify the health risk from a change in exposure to a particular hazard.
- HIA uses a broad framework to predict all of the potentially significant health effects that could result from changes in the physical, social, and economic environment. In doing so, HIA includes analysis of impacts on the determinants of health, such as housing, transportation, employment and income, noise, air quality, access to goods and services, access to parks, and social networks. HRAs are typically used to analyze discrete relationships between a single environmental contaminant (e.g., diesel) and a single health outcome (e.g., lung cancer).
- Following the basic pattern of an EIA, HIA starts with an analysis of existing conditions in a community and, in particular, identifies special sub-populations who may be particularly vulnerable, or in which there are significant baseline health inequities. For example, HIA examines existing burdens to EJ communities and assesses impacts cumulatively. HRA does not typically take existing health conditions or disparities into consideration.
- HIA uses both quantitative and qualitative/descriptive methods in analysis, while HRA uses modeling to quantify risks. If there is strong evidence of the existence of a hazard but data does not exist to quantify a prediction, HRA will not consider that hazard while HIA will. Currently, sufficient data to conduct HRA exist for only a limited number of health-relevant environmental exposures and conditions.
- The HIA process can be used to engage stakeholders, including community residents, and build consensus, while HRA is typically conducted by expert risk assessors.
- HRAs can be a useful tool to analyze potential impacts, but they do not comply with the form and process required by NEPA as can an integrated HIA/EIA approach (see answer to question 8).
- HRA is one analytical tool that could be used in the assessment phase of HIA.

**6. Does a HIA use qualitative or quantitative data?**

HIA may use both qualitative and quantitative data and methods to predict potential impacts. Where feasible and data allows, HIA uses quantitative modeling to increase the precision of analysis and to support significance judgments. Because of substantial data requirements, using quantitative forecasting methods exclusively may present a partial or biased accounting of health effects. Quantification can also be resource intensive and divert from other impact assessment activities. Qualitative analyses provide valuable data when quantitative analyses are not possible.

It is important to note that NEPA regulations do not require quantitative analysis and that many predictions in EIA are descriptive. Indeed, simple descriptions of *possible* causal links between the proposed action and a given outcome may be more legally defensible than quantitative modeling, and can still provide valuable insights into differences between the alternatives and potential mitigation measures.

HIA standards include the ethical use of evidence, whether it is quantitative or qualitative. This includes the utilization of evidence from diverse sources, such as available statistics, empirical research, original investigation results, professional expertise, local knowledge, and the findings of well-designed and peer-reviewed systematic reviews. HIA calls for the justification of the selection or exclusion of particular methodologies and data sources and the explicit statement of assumptions used in judgments, particularly quantitative estimates of hazards or impacts. Data gaps, uncertainties, and limitations should be identified and stakeholders should be allowed to critique the validity of findings.

**7. How would a comprehensive health analysis (e.g., using HIA) differ from what is already done in an EIR/EIS?**

Currently, there are three ways in which health is incorporated into an EIR/EIS: 1) as a health risk assessment for a discrete exposure (described in question 5); 2) as a discussion of risk factors for health (e.g., air quality, traffic flow), but the link between those risk factors and health is not often made explicitly; and 3) as a demonstration of compliance with a health-based environmental regulation, such as the Clean Air Act. These approaches do not fully address the requirement for an analysis of potential public health effects according to the format/process established by NEPA.

A more complete analysis of health effects responsive to NEPA would consider all potentially significant direct, indirect and cumulative health impacts associated with the proposed action and alternatives. The analysis would include descriptions of baseline heath status and determinants of health for the affected population. These elements would generally be achieved through the implementation of an integrated HIA which would:

- Include a systematic scoping of potentially significant direct, indirect, and cumulative health impacts;
- Analyze baseline health conditions and determinants of health;
- Analyze direct and indirect health impacts of the project; and
- Analyze cumulative impacts related to health outcomes.

**8. How does HIA fit in with the EIR/EIS process?**

The steps of Health Impact Assessment (described in question 1) parallel the steps of Environmental Impact Assessment and, therefore, the two processes can be easily integrated. By integrating HIA and EIA, redundancy in data collection and analysis is avoided, as information collected in the EIA process provides inputs into the health analysis. To conduct a HIA as part of an EIR/EIS, one would:

- Scope potential direct, indirect, and cumulative health concerns in the EIR/EIS Scoping stage. HIA Scoping includes stakeholder meetings to ensure the scope is complete and uses stakeholder knowledge and experience to prioritize the health concerns to analyze.
- Assess prioritized health concerns identified during Scoping. This assessment will include:
    - new analyses (e.g., collecting existing data on health conditions and on existing determinants of health; analyzing impacts not previously analyzed as a result of the expanded Scope);
    - extensions of existing analyses (e.g., using traffic data such as vehicle trips and volume to predict impacts on traffic injuries and physical activity); and
    - developing potential mitigation measures to address significant health impacts.

  In addition, HIA assessment could include methods that involve stakeholder participation, such as community surveys and focus groups.
- Report and receive public comment on baseline health conditions and determinants of health, the analysis of health impacts, and potential mitigation measures in the Draft EIR/EIS and respond to comments to develop the Final EIR/EIS.

**9. How do you know when a health impact can or should be addressed or mitigated?**

As for any other resource or impact more commonly analyzed in an EIS, the analysis of health effects is generally limited to those deemed to be potentially significant, as defined by the CEQ regulations (40 CFR § 1508.27). In practice, the HIA team will typically bring a public health-based perspective on significance which will drive the initial proposed scope of the analysis. The final scope of impacts included in the EIS, however, evolves over the course of the analysis through ongoing collaboration and discussions between the HIA team and the participating agencies, and based on determining which outcomes are best supported by the evidence.

**10. Are there other examples of HIAs being done for major projects and policies and as part of EIA?**

To date, HIAs have been included in five published NEPA documents, all in Alaska.[1] In San Francisco, the health department collaborates with the planning department to ensure the inclusion of health analyses for environmental analysis conducted under CEQA.

HIA is currently being applied to other important proposals, including those subject to NEPA such as the I-710 Corridor Project in Los Angeles. HIA is also being applied to the proposed Cap and Trade regulations under the California Global Warming Solutions Act.

**11. Are there practice standards for HIA?**

Yes, the North American Health Impact Assessment Working Group released standards in 2009. Those are available at: http://www.humanimpact.org/capacity-building/hia-tools-and-resources/.

**12. Where can I learn more about HIA?**

The Human Impact Partners website (http://www.humanimpact.org/) contains information, tools, and resources regarding HIA. Other good resources include the Centers for Disease Control website (http://www.cdc.gov/healthyplaces/hia.htm), the Health Impact Project website (www.healthimpactproject.org), and the UCLA HIA CLIC website (http://www.ph.ucla.edu/hs/hiaclic/).

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