



HEALTH **IMPACT** IN 5 YEARS

Data and Transportation as Vehicles for Community Health Planning

Maricopa County Department of Public Health
Stories from Public Health Innovators

Introduction

The Centers for Disease Control and Prevention’s (CDC) [Health Impact in 5 Years \(HI-5\)](#)¹ initiative highlights community-wide approaches that can improve the places where we live, learn, work, and play. The following example from Maricopa County, Arizona was implemented before CDC developed the HI-5 initiative, but showcases the components that may be needed to carry out one of the HI-5 evidence-based approaches: [the introduction or expansion of public transportation systems](#).²

The health of a community depends heavily on the quality of its environment, including access to healthy food, healthcare services, and safe places to live, learn, work, and play. Thoughtfully planned public transit can improve each of these facets. In Maricopa County, Arizona, a community came together through a comprehensive health impact assessment (HIA) to learn about and improve the potential health outcomes of expanding the light-rail system in South Phoenix.

In 2013, the city of Phoenix and Valley Metro (the region’s public transportation authority) formally proposed an extension of the existing light-rail transit system to connect South Central and South Phoenix neighborhoods to downtown Phoenix. In response, the Maricopa County Department of Public Health, the Arizona Department of Health Services, and the

Arizona Alliance for Livable Communities conducted an HIA from 2013 to 2015. The HIA examined the potential impacts of the proposed transit extension and provided recommendations that would protect health and advance health equity.

HI-5: Public Transportation System Introduction and Expansion²



The goal: Increase access to public transit—defined as buses, light rail, or subways—that are available to the public, run at scheduled times, and that may require a fare.



The strategy: Build or expand transportation systems to ensure people can reach everyday destinations—such as jobs, schools, healthy food outlets, and healthcare facilities—safely and reliably.



The health impact: Public transit is safer than private vehicles, improves air quality, provides opportunities for physical activity, and increases access to vital services.



The value: Providing high-quality transit services, including urban rail or “bus rapid transit” systems has the ability to produce per capita annual health benefits of \$355.³

Problem and Need

Phoenix, Arizona, is the fifth largest city in the United States and one of the fastest-growing cities in the country. Maricopa County's

population now exceeds 4 million people, and city and county planners have struggled to meet the rising transportation needs of the rapidly growing population through improved transit and active transportation options.



The first 20 miles of light-rail were opened in 2008, and by 2032 the system is projected to total 57 miles. Among the extensions planned in 2013 was a 6-mile line extending south from downtown Phoenix to serve low-income neighborhoods with notable health disparities in South Central and South Phoenix. Members of these communities already rely heavily on public transit—almost a third of

Pathways to Health

The community formed an advisory group (called the Insight Committee) consisting of dedicated residents and representatives of local organizations to provide guidance for the HIA. Using a “social determinants of health”⁴ model along with detailed data about the existing conditions within the community, the committee was able to explore the potential direct and indirect impacts of the transit corridor extension that could eventually lead to changes in health for the community residents. These impacts were categorized into six critical “[pathways to health](#),” and the HIA’s research questions and methods were based on these pathways.



residents in the neighborhood do not have a car and are dependent on other forms of transportation.

With funding from the Health Impact Project, a collaboration of the Robert Wood Johnson Foundation and The Pew Charitable Trusts, the health department and its partners recognized that the proposed light-rail extension presented an opportunity to examine the neighborhood’s health disparities, identify how the transit project would affect health, and generate data and community-driven recommendations to advance equity. By starting an HIA for the proposed extension, health department officials realized they could encourage closer collaboration between public health and transportation stakeholders to improve the health and well-being of community residents.

Pathways to Health⁵ (summarized for brevity):

- **Pathway #1** – Landscape/Shade/Security. An environment that supports active living needs to be safe and inviting for the public, with as few barriers as possible. For example, the intense Arizona sun and Phoenix’s urban heat island effect can limit transit ridership.
 - **Pathway #2** – Transportation Costs. A major transit project like this may alter household transportation costs and in turn, increase or decrease the amount of money a family might be able to spend on other necessities like health- or healthcare-related services. It is important to consider the potential impacts of transportation costs on income and its relationship to health.
 - **Pathway #3** – Business and Employment. The economic health of a community requires employment opportunities that support families. Economic development impacts will include direct and intermediate health outcomes from project construction, business development, and employment, affecting household income, health insurance, and safety.
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- **Pathway #4** – Housing. The economic impacts of major transportation and development projects can potentially affect housing in multiple ways, with broader implications for quality of life, stress/mental health, social cohesion and life expectancy. Better access to services, education and employment have the potential to make housing choices near transit stops more desirable, but could also potentially result in higher rents or home prices which could squeeze lower income residents out of the market resulting in displacement and gentrification.
- **Pathway #5** – Access to Healthy Food, Safe Places to Play, and Health Care. Increasing transit options can alter residents’ access to healthcare and social services, healthy food and recreation and other amenities, all of which

can impact quality of life, mental health, social cohesion, life expectancy, chronic disease, and risk for injury and asthma and pulmonary illness.

- **Pathway #6** – Active Transportation. How the environment supports walking, bicycling, and access to transit, collectively known as “active transportation,” affects physical activity levels and health outcomes within the community.

Social determinants of health⁴ are conditions in the environments in which people are born, live, learn, work, play, worship, and age that affect a wide range of health, functioning, and quality-of-life outcomes and risks.

“ [Transportation professionals are] in the business of connecting people and places, so ... [having] them think of the health impacts of access to resources and services is a way to do it. ”

Kenneth Steel, MPH, Health Policy Analyst, Maricopa County Department of Public Health

Project Focus

While the HIA considered the potential health impacts on all residents within the corridor’s study area, the project focused on the unique needs of three priority populations: pregnant women, families with children or youth with special healthcare needs, and adults with chronic conditions (including developmental, physical, and sensory disabilities). The HIA relied on published research, surveys, focus groups, epidemiologic analyses, walkability assessments, and interviews to inform the assessment process.

After considering the published literature and data from the community assessment, the Insight Committee and project partners came up with 41 specific recommendations within the six pathways outlined above for improving community health. The committee directed most of its recommen-

dations to Valley Metro and to the city of Phoenix Public Transit and Street Transportation departments. The Insight Committee also had suggestions for the city’s parks and recreation department, neighborhood services, police, and housing authority. Additional recommendations targeted community-based organizations and businesses, the state of Arizona, and Maricopa County. Overall, the HIA results supported the transit extension, citing anticipated improvements in access to jobs and to other services such as health care and retail. However, the recommendations identified ways that transportation officials could monitor the indirect effects of the many potential changes the community might experience during and after construction all of which can affect the health and well-being of its residents.

Engaging Partners from Multiple Sectors

Throughout the HIA, partnerships that were developed among the local and state health departments, the Arizona Alliance for Livable Communities, Valley Metro, and the Insight Committee expanded to include community development organizations, different foundations interested in health, community-based organizations, and area residents. These groups worked together to develop a transportation plan that would best serve the health and safety needs of pedestrians, cyclists, drivers, and people using public transit.



Central Avenue, looking north to Downtown Phoenix; home to many businesses and Valley Metro's future South Central light rail extension

Navigating the Process

The HIA in Maricopa County was successfully completed because several organizations collaborated to improve community transportation needs. However, public health professionals and transportation planners rarely speak the same language. Representatives from the health department and the transportation authority worked hard to find common ground. Initially, health department representatives had little knowledge about how the transit authority's administrative processes worked, or how the transit authority considered different policy recommendations. Likewise, public transportation representatives had not considered whether or not their goals and efforts aligned with those of the public health department, or those of the Insight Committee's HIA efforts. Although a representative from Valley Metro was involved throughout the process, the planner lacked the authority to approve the recommendations, so the organizations involved were uncertain about whether or not the recommendations would be adopted.



Finding the right balance between the HIA recommendations and the transportation authority's priorities was an important consideration throughout the environmental assessment. For example, the HIA revealed that South Phoenix residents were concerned about how revitalization efforts might eventually lead to the demolition of homes in favor of new, high-end developments, and increased property taxes. The new light rail extension had the potential to result in increased rents and other housing costs as well as the displacement of residents. The transit authority saw transportation as the priority and was less aware of these indirect issues related to housing

Opportunities for Public Health

- Advise on evidence-based transportation interventions
- Convene different sectors and partners
- Make the case with relevant data
- Assist with data collection, evaluation, and reporting

Lessons Learned

The health department learned important lessons through the process of conducting the HIA: understanding fiscal limitations, establishing good communication with transportation partners, and discussing early concerns that transportation partners had about working with health and

community organizations. For example, the health department learned that the transportation authority was better prepared to respond to the HIA results after it was farther along in the process of receiving federal funding to construct the project.

“ At the health department, we had access to a lot of public health data that was not readily available to transit, so we were able to bring data to help facilitate a health-focused discussion... The South Phoenix neighborhood was so interesting for the HIA ... because it is a [largely] transit-dependent community ... light-rail was going to be a game-changer. ”

Kenneth Steel, MPH, Health Policy Analyst, Maricopa County Department of Public Health

Achieving Results

Conducting the HIA encouraged transportation and planning agencies to listen to vulnerable populations and led to a formalized collaboration and efforts to consider the potential health and environmental impacts of their proposed expansion. One HIA finding that stood out to Valley Metro was the number of challenges faced by individuals with disabilities who take public transit. As a result, Valley Metro revived its disability advisory council, to provide disability accommodations beyond the requirements of the Americans with Disabilities Act.

The HIA established an important relationship between the health department and the Valley Metro public transportation authority, and Valley Metro continues to consult the department for information,

recommendations, and data. The health department is now collaborating with Valley Metro on smaller scale projects, including “wayfinding,” disability accessibility, and first-mile/last-mile transit access related to both bus and rail.

The HIA allowed the health department to identify their roles related to current and future transportation projects to introduce public health data for consideration, and to better inform built-environment and transportation-related decisions. Identifying these opportunities also helped to strengthen internal collaboration within the health department’s offices, including its offices of Community Health Innovation, Public Health Policy, and Epidemiology.



About CDC's HI-5 (Health Impact in 5 Years) Initiative

HI-5 strategies can help you achieve healthy outcomes in your community in 5 years or less, providing good economic value for the investment. CDC reviewed the science to focus on 14 proven approaches that rose to the top as attainable wins for public health. The introduction or expansion of public transportation is just one of the 14 evidence-based interventions identified. CDC's HI-5 initiative can help you make decisions about what works and where to focus efforts to improve public health. To find out more about how your community can use the HI-5 initiative to improve the health of all people, visit the HI-5 website: www.cdc.gov/hi5.

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For more case examples of HI-5 approaches, please refer to www.cdc.gov/hi5

