# Health Impact in Five Years (HI-5):

## Lessons from the Field on the Earned Income Tax Credit and Public Transportation

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# EXECUTIVE SUMMARY

# Executive Summary

## Introduction and Background

Public health professionals are committed to addressing health disparities rooted in social determinants of health (SDOH), the conditions that exist where people live, work, and play.[1] These inequities are complex and require a systemic approach. To better address SDOH and have the greatest impact on population health, public health practitioners can build capacity developing, enacting, and implementing policy and community-wide interventions (CWIs).[2]

To help address SDOH through policy and large-scale interventions, the Centers for Disease Control and Prevention (CDC) developed the Health Impact in Five Years (HI-5) Initiative.[3] The HI-5 Initiative works to improve population health outcomes and build health equity through community-wide approaches. Extending beyond healthcare systems, HI-5 elevates non-clinical approaches that achieve positive health impact within five years and are cost effective[4] HI-5 highlights 14 CWIs that address multiple health conditions simultaneously and complement other CDC initiatives, programs, and projects.

### Key Acronym

**SDOH**
Social determinants of health

The CDC Foundation, in partnership with CDC and with funding from the Robert Wood Johnson Foundation (RWJF), collaborated with the Public Health Institute (PHI), Population Health Innovation Lab (PHIL), and Anderson Smith Consulting, LLC on an exploratory project to identify and understand underlying factors that lead to successful implementation of two HI-5 CWIs: the Earned Income Tax Credit (EITC) and introduction or expansion of public transportation systems.

The EITC is a successful federal tax program that helps low-to-moderate-income working people keep more of the money they earn by paying lower taxes or receiving a larger tax refund.[5] The EITC is one of the largest and most effective policy tools to help lift families out of poverty and is associated with improved health outcomes, especially for mothers and children, such as healthier birthweight.[6] Thirty states, the District of Columbia, and Puerto Rico build on the federal EITC by offering similar state-level credits. This report examines efforts to enact new or strengthen existing state EITCs.

### HI-5 Interventions

#### Changing the Context

School-Based Programs to Increase Physical Activity

School-Based Violence Prevention

Safe Routes to School

Motorcycle Injury Prevention

Tobacco Control Interventions

Access to Clean Syringes

Pricing Strategies for Alcohol Products

Multi-Component Worksite Obesity Prevention

#### Addressing Social Determinants of Health

Early Childhood Education

Clean Diesel Bus Fleets

Public Transportation: System Introduction or Expansion

Home Improvement Loans and Grants

Earned Income Tax Credits

Water Fluoridation

Public transportation systems effectively move groups of people to destinations on various modes including buses, light rail, subways, trains, van pool services, ferries, and others.[7,8] Public transportation systems provide access for passengers to reach everyday destinations safely and reliably while reducing emissions and motor vehicle-related injuries and deaths. Introducing or expanding public transportation systems—particularly bus systems—is linked to broad and significant health benefits, including increased physical activity, lower air pollution, and fewer vehicle collisions. This report focuses on states that expanded community access to bus systems as a key aspect of public transportation planning policy that helps address health equity.

## Approach

Sixteen "innovator states"[9] were identified that had successfully implemented one of the selected interventions. The project team conducted a series of in-depth interviews with key informants from each state as well as facilitated discussions in larger convenings. The CDC Policy Process[10] and a realist evaluation approach[11] were two frameworks used by the team to guide the project development and analysis. The project primarily aimed to understand what works for whom and under what circumstances. The analysis identified mechanisms for success and examined the role of public health in advancing the CWIs. Recognizing that each community is different, this report describes the conditions and contexts associated with successful implementation and/or expansion of a state EITC or public transportation system. This report also emphasizes the important role public health can play, especially when willing to collaborate across sectors to address health equity through policy change and projects that can benefit entire communities.

## Key Insights

Several factors emerged as common and critical elements for successful implementation of the two HI-5 CWIs. Stakeholders broadly noted the importance of
- **strong partnerships and coalitions,**
- **identifying decision makers and cultivating champions,**
- **seizing policy opportunities,**
- and embracing **persistence and perseverance.**

Two infrastructural contexts also appeared to be important factors for success: **the economic climate and political environment.** These considerations emerged as the most likely to influence the extent to which state EITCs and public transportation systems could be successfully implemented.

This report shares success stories from across the country of efforts to enact and implement policies relating to the EITC or public transportation. For example, the history of Louisiana's state-level EITC illustrates many of the contextual factors we found as critical elements for success. Louisiana enacted a small state EITC in 2007 largely due to the efforts of an advocacy coalition coinciding with an economic boom. In the wake of Hurricane Katrina, Louisiana had a large budget surplus due to federal recovery money, insurance proceeds, and high oil prices. Poverty levels remained high during the recovery period, however, particularly child poverty. Advocates for child welfare seized this moment of surplus and persuaded key decision makers in the state legislature to create a state EITC as part of broader tax legislation. In 2018, the state EITC was expanded with a significantly different context. The state was grappling with a budget shortfall, yet the political environment was favorable to the EITC due to a newly elected governor's interest in child welfare.

After spending years educating and cultivating champions in the state legislature, a dedicated coalition led by child welfare advocates, faith leaders, a utility company, and a state policy think tank worked together informally with a range of nonprofit and advocacy organizations to embrace the moment. With support from this diverse coalition, a pivotal group of state legislators managed to strengthen the state's credit through a broader tax bill to address the state's budget. The trajectory of Louisiana's state EITC underscores the value of persistent partnerships, cultivating key champions, and seizing rare opportunities when they appear. The importance of leveraging windows of opportunity and persevering until such moments occur were themes that emerged broadly and consistently throughout the project.

A large-scale expansion of funding for Oregon's public transportation system also reinforces key themes while illustrating important differences in context. Public transportation in Oregon has grown organically over decades, beginning primarily with a mission of serving elderly and disabled populations in the 1980s. As part of the governor's vision in 2016, state lawmakers went on a road trip across Oregon to talk with constituents through open houses and meetings. Traffic congestion and the need for more public transportation were the top two issues identified through this process. With a clear mandate from the public and receptive legislative champions, a window of opportunity opened, and the state legislature passed a payroll tax that significantly expands the state budget and provides a large increase in resources for public transportation. Once the legislation was passed, the work of developing specific rules began. To move forward, the Oregon Department of Transportation formed a diverse steering committee consisting of stakeholders including health equity advocates, people with disabilities, seniors, local government officials, tribal representatives, and others. Although the committee members brought a range of priorities to the process, they worked together over the course of a year to find compromises and ultimately reach consensus on rules to guide the new funding and strengthen public transportation systems throughout Oregon.

## New Opportunities for Public Health

Public health stakeholders did not always play significant roles in the implementation of state EITCs or public transportation systems, but multiple opportunities for public health engagement emerged. The public health community can build evidence to support CWIs, accelerate efforts by providing a uniquely persuasive health perspective, and leverage valuable networks to bring diverse stakeholders together to support a CWI.

For example, health data sets available to epidemiologists in state or local health departments were identified as valuable resources by transportation stakeholders for planning public transit projects. For the EITC, key decision makers often valued child health and wellbeing, and public health practitioners are uniquely qualified to research and explain the health benefits of the policy. More generally, public health stakeholders can connect with policy and advocacy groups in their communities to learn more about the political landscape and opportunities to engage. The importance of strong partnerships, relationships with legislators, and nuanced understanding of policy windows emerged as important themes across the entire project, so connecting with coalitions or policy networks can offer a solid foundation to support an issue. Public health practitioners can also further educate themselves, their organizations, and their broader networks about SDOH and the HI-5 CWIs.

The public health community faces a tremendous opportunity to build capacity in policymaking and provide additional support to the community-wide interventions highlighted by the HI-5 Initiative. This report explores avenues for public health to support two HI-5 CWIs: the EITC and introduction or expansion of public transportation systems. Success stories from across the country highlighted the importance of developing persistent partnerships, cultivating key decision-makers as champions, and seizing unique political or economic opportunities when possible to implement CWIs. Whether building the evidence base for CWIs, convening diverse stakeholders, or offering other support from the health perspective, the public health community enjoys a promising opportunity to further advance CWIs and health equity. It is now more important than ever for public health to bring evidence and expertise to initiatives that directly improve health disparities, address social determinants, and achieve health equity.

# INTRODUCTION

## Project Goals

Public health professionals are generally committed to addressing the health disparities and health inequities intrinsically connected to social determinants of health (SDOH) but are often unsure how to practically apply this lens to facilitate meaningful change.[12] The CDC Foundation, in partnership with the Robert Wood Johnson Foundation (RWJF), proposed research to identify the context and drivers for policy development, enactment, and implementation in order to better address SDOH.[13] The HI-5 Partner Consortium Thinking Group ("Thinking Group") served as the steering committee for the project. In this capacity, the Thinking Group convened organizations with a common interest to support public health professionals in their use of evidence-based, community-wide interventions (CWIs) that directly address SDOH. In order to complete an exploratory project on two CWIs, CDC Foundation partnered with the Public Health Institute (PHI) and Anderson Smith Consulting, LLC with the aim of identifying and understanding the contexts and mechanisms of state earned income tax credits and public transportation systems to recommend ways public health can support and contribute to policies in these two areas in order to improve SDOH and advance population health.

### Project Goals

1. Describe contexts that underly the development and implementation of earned income tax credits (EITC) and public transportation policies
2. Identify mechanisms that might explain what about these cases made them successful
3. Recommend ways public health can support and contribute to these policies and improve social determinants of health (SDOH)

## Project Background

The Centers for Disease Control and Prevention (CDC) frames population health and prevention in three categories: 1) traditional clinical preventive care, 2) innovative preventive patient-focused interventions outside of the clinic setting, and 3) total population or community-wide interventions.[14] The Health Impact in Five Years (HI-5) Initiative is an example of this third category, focused on CWIs aimed at improving population health.[15] The HI-5 Initiative maintains that focusing on SDOH has the potential to impact the health of communities across the United States. To do so, HI-5 elevates non-clinical approaches that have: 1) positive health impacts, 2) results within five years, and 3) cost-effectiveness and/or cost savings over the lifetime of the population or earlier.[16] With these three criteria in mind, 14 CWIs have been highlighted by HI-5 for their public health impact potential by addressing multiple health conditions simultaneously within the context of SDOH (see Figure 1).[17]

At the base of the HI-5 pyramid, SDOH are conditions found in the environments in which people live, learn, work, and play that impact a wide range of health outcomes and risks. Working to improve SDOH yields a wide range of positive health impacts. The HI-5 Initiative aims to address broad economic, social, and environmental factors that impact individual and community health, as these factors are often outside the traditional public health sphere.

The 14 CWIs elevated by HI-5 seek to improve population health by providing evidence-based interventions that address SDOH. Engaging in these "upstream efforts" or policy approaches that impact population health through regulation, increased access, or economic incentives requires not only knowledge of the evidence, but also a determination of what works, for whom, and in what circumstances. This information can then be used to inform how policy can work as a tool to help address public health concerns. The HI-5 Initiative links selected CWIs to positive health impacts, including learnings about factors that help shape implementation for public health professionals. More successful examples are needed in order to create a blueprint for public health to successfully replicate HI-5 interventions in communities across the United States and contribute to population-level change. This report contributes evidence to two of HI-5's suggested CWIs: the Earned Income Tax Credit (EITC) and public transportation systems.

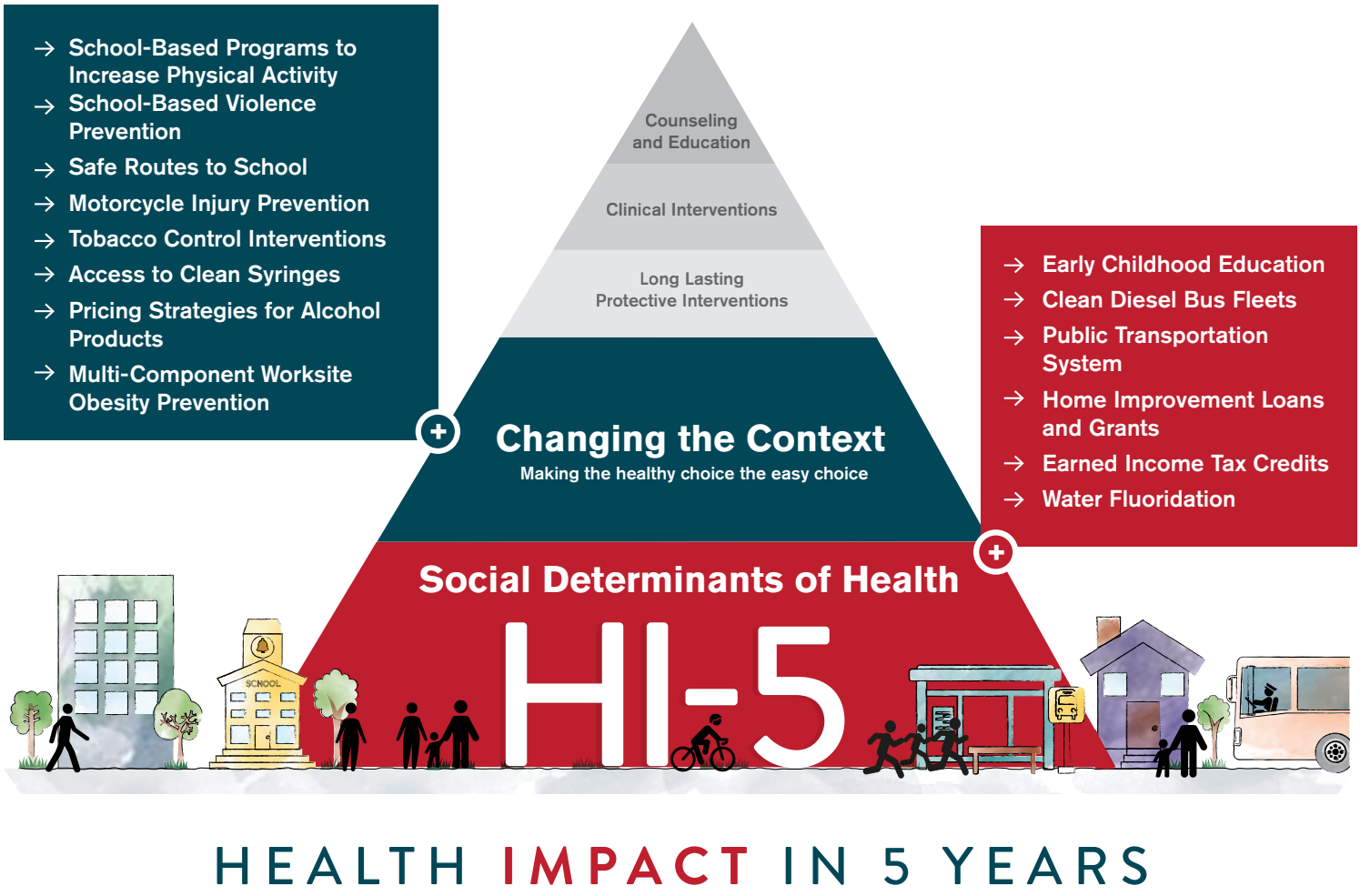



*Figure 1. HI-5 Initiative Pyramid. The fourteen CWIs of HI-5 are mapped into two tiers of the Public Health Impact Pyramid: interventions aimed at addressing SDOH and those designed to change the context in order to make healthy choices easier to opt into. Moreover, interventions situated within these two tiers have the potential to make significant impacts on population health.*

## Theoretical Approach

Two key frameworks informed project design, implementation, and evaluation: CDC's Policy Process and the realist evaluation approach.

### CDC Policy Process

The first framework guiding project design and implementation is CDC's Policy Process (see Figure 2).[22] This framework defines "policy" as *a law, regulation, procedure, administrative action, incentive, or voluntary practice of government or other institutions.*[23] This project focused on three domains within the process: strategy and policy development, policy enactment, and policy implementation.

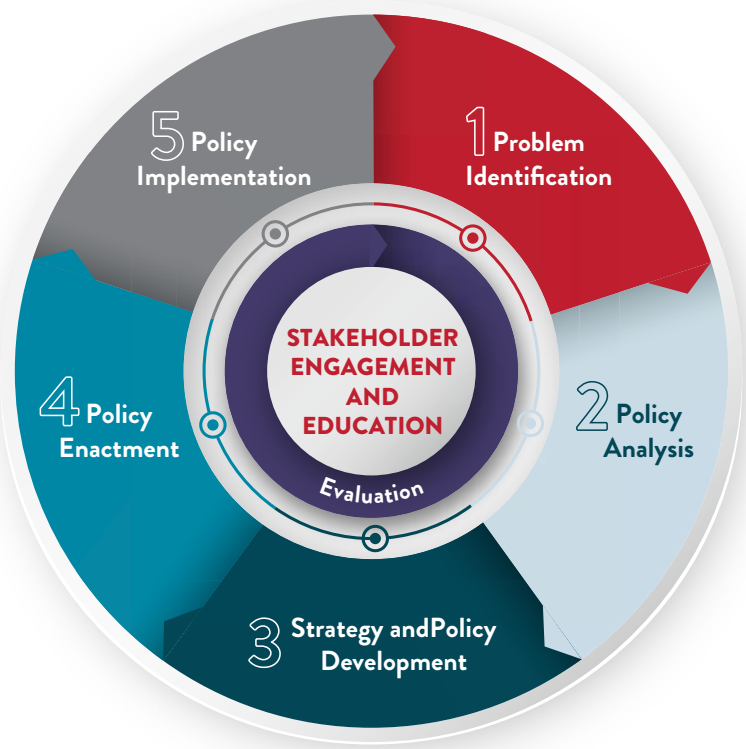



*Figure 2. CDC Policy Process*

### Realist Evaluation

Not all successful interventions can be easily replicated, so it is important to dig deeper to better understand the broader context and learn why a particular intervention was (or was not) effective. In this project, a realist evaluation lens[24] was applied to obtain this broader perspective (see Table 1). Context is a critical factor that influences policy development, enactment, and implementation. Contexts are the institutional structures and cultural norms of the organizations associated with the policies.

| REALIST SYNTHESIS: RAMSES APPROACH | |
|---|---|
| **Context (C)** | Infrastructural (broader environment -historical, political, economic, sociodemographic, and availability of resources)<br>Institutional (structure, culture, norms, processes, and scope of influence of the institutions with which program practitioners and participants are associated)<br>Interpersonal (quality of relationships, history of working together, communication, language)<br>Individual (personal history, values, beliefs, interests, experiences, mental models) |
| **Mechanisms (M)** | Who was reacting?<br>What were they reacting to?<br>How were they reacting?<br>Why were they reacting?<br>How were their reactions linked to the outcomes? |
| **Outcomes (O)** | Intended consequences<br>Unintended consequences (include challenges here) |
| **C+M+O** | What led to success? |

*Table 1. Adapted from Wong, G., Westhorp, G., and Greenbaugh, T. (2012) Realist Synthesis RAMESES Training Materials.*

Infrastructure represents the political and economic environments in which the intervention is developed, enacted, and implemented. Other contexts include the individual values, beliefs, and experiences of those involved in developing, enacting, and implementing the policy and the quality of interpersonal relationships developed.[25] Mechanisms include the resources (e.g., funding, data, information) made available to the program or intervention and the reactions to those resources that lead to the policy.[22]

In each of the communities that implemented EITC or addressed public transportation systems, questions were asked about context, mechanisms and outcomes: Who are the individuals and organizations? What are their relationships and experiences? What are the available resources? What are the political and economic environments? The combination of contexts, mechanisms, and outcomes can be viewed as a blueprint for understanding what led to success.[26] The approach of this project was to identify states that successfully implemented relevant CWIs, apply the framework depicted in Table 1 to glean insights, and identify patterns that emerged across experiences. The project applied a realist evaluation lens to findings for both HI-5 CWIs (EITC and public transportation systems). Detailed analysis using realist evaluation can be found in each respective project section, as well as the concluding cross-case analysis.

## Project Methods

Given the gap in knowledge of policy implementation to address health inequities, the project first identified innovator states[27] with successful policy implementation stories related to the two selected HI-5 CWIs: EITC and public transportation systems. Key informant interviews within each innovator state helped the project team identify patterns that emerged across the stories and were further discussed at two Deep Dive convenings—one for each intervention—as well as an EITC follow-up meeting. Together, this sequential approach provided the context and mechanisms for both HI-5 CWIs. More detailed methods sections can be found in each respective project section.

### Innovator States

To launch the project, CDC Foundation staff developed criteria to identify innovator states[28] where policies related to the two selected HI-5 CWIs correlated with positive health outcomes. Innovator states in this project were defined as those actively innovating in the sense of engaging in multi-sector collaboration or generally working outside of the traditional domain of public health in the interest of improving health equity. Staff then used methods including desk review, legal scans, as well as suggested guidance from federal partners and CDC programs and grantees to compile the following general criteria for innovator state selection:

### Innovator State Criteria

- Relevant policy enacted within the last ten years
- Promotion of positive health outcomes
- Multi-sector collaboration (e.g., health department participating in transportation planning)
- Diverse geography and political landscapes

For the EITC, nine states formed the initial pool of innovator states: California, Idaho, Kansas, Louisiana, Massachusetts, Minnesota, New Mexico, New York, and Vermont. The list then underwent several iterations based on feedback from the Thinking Group, resulting in the addition of Ohio and Virginia, and bringing the total number of innovator states for EITC to eleven. All eleven states met the general project criteria described above.

For public transportation systems, the Thinking Group recognized that although all fifty states have public transportation systems, selected states had to fit the general criteria as innovators. The Thinking Group opted to draw from environmental scans in order to identify places that had explicit language in their policies or planning activities about the intersection of health and public transportation as well as a bus system. In the process, developing additional criteria for innovator states within the public transportation project. Ultimately, five states were selected including: Massachusetts, Michigan, Oregon, Tennessee, and Washington.

The sixteen selected innovator states established the foundation for the project's next steps: key informant interviews, Deep Dive convenings, and a follow-up meeting. Together, these sequential approaches generated insights into the context and mechanisms for the EITC and public transportation systems.

### Key Informant Interviews

Key informant interviews within both HI-5 CWIs aimed to gather information on the policy fundamentals, including drivers of policy development, enactment, and implementation strategies as well as lessons learned and key players. Key informants were selected from the innovator states with guidance from the Thinking Group. When possible, multiple key informants were chosen from each state. For the EITC, key informant interviews were conducted with representatives from four of the eleven innovator states but with five nonprofit organizations (one each from California, New Mexico, and Ohio and two from Louisiana). For public transportation systems, the Thinking Group selected nine informants from five states (Massachusetts, Michigan, Oregon, Tennessee, and Washington).

### The World Café Methodology

is an effective format to host dialogue amongst large groups and is comprised of the following five basic components:

- Setting
- Welcome & Introduction
- Small Group Rounds
- Questions
- Harvest

### Deep Dive Convenings

Key informant interviews helped guide the planning and structure of two Deep Dive convenings, one-day meetings for each of the HI-5 CWIs. The convenings both used World Café methodology[29] to facilitate a series of small group discussions. Participants delved into how states developed, enacted, and implemented policies related to the interventions, as well as public health's current and potential role in the process. A follow-up meeting occurred for EITC as planned but not for public transportation due to the COVID-19 pandemic. Findings from the Deep Dive convenings and EITC follow-up meeting are described in each respective section.

## Report Structure

This report is broken into two primary sections, one for each HI-5-identified CWI: EITC and public transportation systems. The report's two main sections open with a description of the CWI, project methods, followed by a synopsis of the stories and themes related to the development and implementation of each topic area, as well as analysis. Each section closes with a discussion of the role of public health and lessons learned. Also included is a brief summary of the impact of COVID-19—a postscript compiled as the global pandemic unfolded in the spring and early summer 2020—that focuses on public transportation systems. The report concludes with a cross-case analysis of the two HI-5 CWIs.

# EARNED INCOME TAX CREDIT (EITC)

## Key Acronyms

**CDC**
Centers for Disease Control and Prevention (CDC)

**CWI**
Community-wide intervention

**EITC**
Earned Income Tax Credit (EITC)

**HI-5**
Health Impact in Five Years Initiative

**Thinking Group**
HI-5 Partner Consortium Thinking Group

**SDOH**
Social determinants of health

Poverty is a leading SDOH,[30] and the Earned Income Tax Credit (EITC) is one of the most effective policy tools to help lift families out of poverty.[31] The EITC is a federal tax program enacted in 1975 that provides financial support to eligible workers who receive low or moderate wages. The size of the credit is based primarily on a household's earnings and family size, with an average EITC amount of approximately $2,500. The EITC is tailored to increase as incomes rise, helping to encourage work, and tapers off gradually as wages grow. The original policy has been strengthened over time with widespread bipartisan support to expand benefit size and eligibility.[32] The EITC lifts 4.4 million Americans, half of these children, out of poverty each year.[33, 34, 35,36] Reducing poverty is connected to improved individual and community health outcomes, including reduced risk of chronic diseases such as cardiovascular conditions and Type 2 diabetes, increased access to healthy foods and safe housing, reduced financial stress, and increased insurance coverage among children.[37]

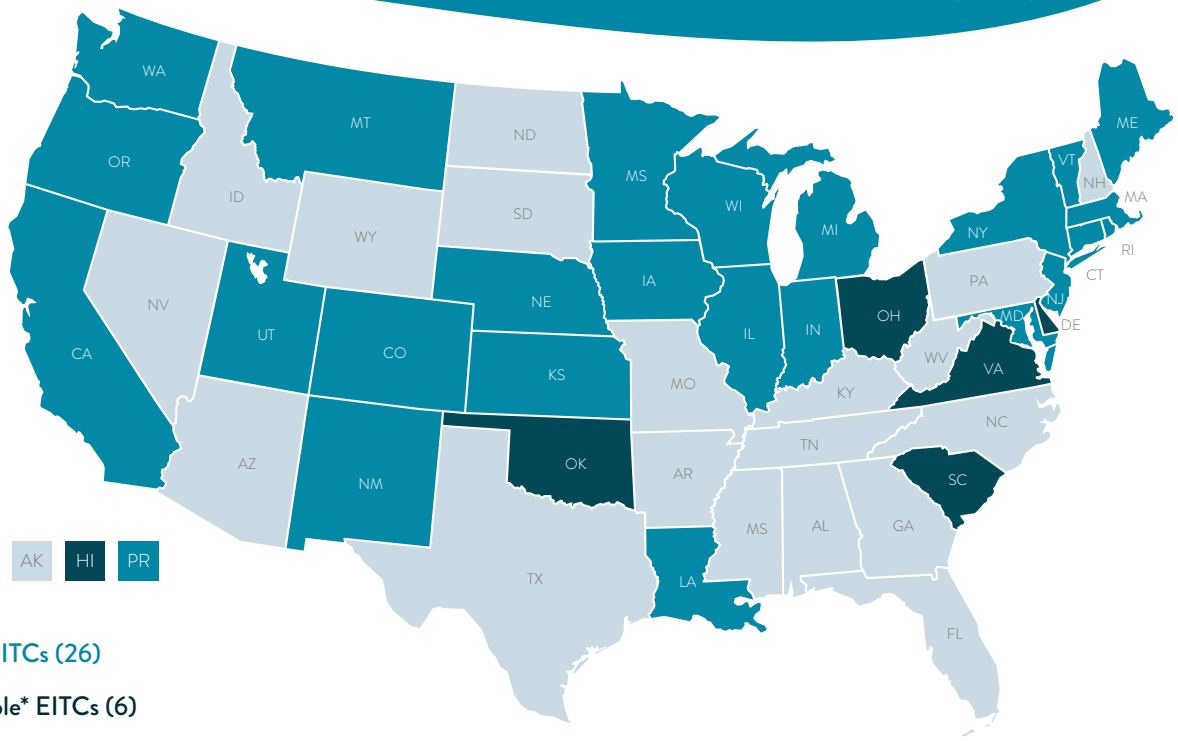
Thirty states, the District of Columbia, and Puerto Rico build on the federal EITC by offering similar state-level credits (Figure 3 and Table 2). States generally implement these credits by matching a percentage of the federal EITC, typically in the range of 5 to 40%.[38] In most cases, the state EITC mirrors the core structure of the federal EITC, though some states have enacted nonrefundable credits. A nonrefundable credit can only reduce the taxes owed by a household, even if the calculated size of the credit is larger than a family's tax liability. The federal EITC and most state versions are refundable, meaning eligible households receive the full value of the credit regardless of their income tax amount.[39] Refundability is an important component for the effectiveness of the EITC to alleviate poverty and, in turn, improve health. Households working for low wages can receive minimal benefits from nonrefundable credits because their income tax bill is already small, or perhaps even zero.[40] Yet households with very low incomes also stand to benefit most from the additional financial support provided by a refundable tax credit.

**What is an Earned Income Tax Credit?**
Earned Income Tax Credits (EITC) help low-to-moderate-income working people keep more of the money they earn by paying lower taxes or getting a bigger tax refund.

*Source: Public Health Action Guide, EITC*

Whether at the federal or state level, EITCs are associated with improved health outcomes and deserve consideration by public health professionals as a key policy solution for addressing SDOH.[41] By reducing poverty and helping working families make ends meet, the policy has been linked to a range of health improvements, particularly for infants and mothers.[42,43,44,45,46] Studies show credits are associated with reductions in infant mortality and preterm births as well as improvements in birth weight and maternal health outcomes. Other benefits to older children of recipients include better test scores in school, higher graduation rates, improved employment rates, and greater lifetime earnings—outcomes that also underscore long-term health.[47] Beyond health outcomes for women and children, EITCs also contribute to supporting basic necessities among working families, including food provisioning, housing, transportation, and others.

# 30 STATES PLUS DC & PUERTO RICO HAVE EITCs




*Refundable earned income tax credits (EITCs) give working households the full value of the credit they earn even if it exceeds their income tax liability. Source: CBPP analysis. Data are as of 2019.

*Figure 3. Map from Center for Budget and Policy Priorities (CBPP) 2019 report "States Can Adopt or Expand Earned Income Tax Credits to Build a Stronger Future Economy" by Erica Williams and Samantha Waxman.*

The policy also has been shown to help keep workers employed or work additional hours as they use the additional resources for childcare and transportation. These conditions impact the SDOH of families receiving the EITC and further contribute toward achieving health equity.

## ENACTED POLICIES RELATED TO EARNED INCOME TAX CREDIT

| STATE | YEAR | POLICY |
|---|---|---|
| California | 2015 | SB 80 - created the CalEITC |
| | 2016 | SB 1073 - modified the credit to conform to a federal law change |
| | 2017 | SB 106 - first expansion of the credit |
| | 2017 | AB 131 - made corrections to SB 106 |
| | 2018 | SB 855 - second expansion of the credit |
| Louisiana | 2007 | SB 341 - created the LA EITC at 3.5% of the federal EITC |
| | 2018 | HB 18 - increased the credit to 5% |
| New Mexico | 2007 | HB 436 - created the Working Families Tax Credit, at 8% of the federal EITC. |
| | 2008 | HB 4 - increased the credit to 10% of the federal EITC |
| | 2019 | HB 5 - increased the credit to 17% of the federal EITC |
| Ohio | 2013 | HB 59 - created an EITC nonrefundable credit of 5% of the federal EITC |
| | 2014 | HB 473 - increased the credit to 10% of the federal EITC |
| | 2019 | HB 62 - increased the credit to 30% of the federal EITC and removed the income cap |

*Table 2. Enacted policies related to EITC in California, Louisiana, New Mexico, and Ohio.*

## EITC Project Methods

Individuals representing eleven EITC innovator states participated in this project. Participants included executive branch leaders and staff, EITC policy experts, and cross-sector stakeholders from the faith, antipoverty, and public health communities. Stakeholders were invited to participate through key informant interviews, a Deep Dive convening, and a follow-up meeting. Participants and engagement activities are described in more detail below.

### EITC Innovator States

The Thinking Group identified a total of eleven EITC innovator states[48] using the general criteria established for the overall project (see Project Methods). Other considerations for state selection included having CDC program grantees in Essentials for Childhood or REACH (Racial and Ethnic Approaches to Community Health) as well as having a balanced regional representation. States were then categorized by whether EITC was refundable and the percentage match of the credit. Although nine states initially formed the pool, the list underwent several iterations based on feedback from the Thinking Group, resulting in the addition of two states for a final total of eleven. The eleven innovator states for EITC include: California, Idaho, Kansas, Louisiana, Massachusetts, Minnesota, New Mexico, New York, Ohio, Vermont and Virginia.

### EITC Key Informant Interviews

Guided by the Thinking Group, key informant interviews were conducted with representatives of four innovator states. Interview sessions were organized by state, with representatives from five nonprofit organizations in all (one each from California, New Mexico, and Ohio and two from Louisiana). Interviews were conducted between April and May 2019. Of the four states participating in key informant interviews, three had refundable state EITCs: California, New Mexico, and Louisiana while Ohio's EITC was nonrefundable. At the time of the interview, all had enacted legislation to expand their state EITC at least once.

All key informants represented advocacy organizations dedicated to ending poverty. Interviews explored factors leading to EITC policy development including the following themes: decision-makers and stakeholders involved; challenges, best practices, and lessons learned; and the role of public health in the policy process. See Appendix B for a complete list of key informants as well as Appendix C for the interview guide.

### EITC and Public Health Deep Dive Convening

The EITC Deep Dive convening took place on June 26, 2019, with thirteen participants from five of the eleven selected innovator states (California, Kansas, Massachusetts, New Mexico, and Virginia) as well as additional participants from the state of Georgia. The purpose of the Deep Dive convening was to explore practices related to the development, enactment, and implementation of EITC policies and to discuss the role of public health. World Café methodology[49] was utilized to better host a "small group dialogue." Findings from the Deep Dive convening are discussed further below.

**“All key informants represented advocacy organizations dedicated to ending poverty”**

### EITC and Public Health Follow-Up Meeting

The follow-up meeting on November 20, 2019 convened participants from both the public health sector and EITC implementers (see Appendix D for a list of convening participants and Appendix E for the convening agendas). The main meeting activity was a facilitated feedback session for an action guide for a public health audience (see Appendix F). Additional group discussions addressed perceived capacity gaps in the EITC policy process and implementation. During the meeting, participants completed a short Online questionnaire. The questionnaire polled public health participants about their likelihood to engage in EITC policy in the future and their opinions about the skills and capacities needed to support the engagement. Questionnaire results informed recommendations for public health's role in EITC.

## Results: EITC Stories from California, Louisiana, New Mexico, and Ohio

The story series below draws directly from a thematic analysis of both the key informant interviews and the Deep Dive convening among innovator states. The state stories focus on the development and enactment of state-level EITC policy and expansion. Themes further illustrate the interplay of infrastructural, institutional, interpersonal, and individual contexts. Stories are presented in alphabetical order by state. In general, Deep Dive convening discussion themes mirrored those that emerged from the key informant interviews.

### California

California's EITC exemplifies innovative thinking and implementation of an incremental strategy. First enacted in 2015, California's credit is one of the few not modeled directly on the federal EITC. CalEITC, California's EITC legislation, was ultimately designed as a refundable tax credit for only a portion of those eligible for the federal EITC: low-income working families making less than $30,000 annually.[50] This strategy was pursued after multiple failed attempts to pass a state EITC with the same structure as the federal credit. The primary barrier was cost. In order to reduce cost while keeping the structure of the federal EITC, the California credit would have required a minuscule percentage match, which would offer negligible benefits to many eligible recipients. By tailoring their approach and focusing on those with the lowest incomes, California managed to provide a significant benefit to households experiencing "deep poverty"—below 50% of the federal poverty line. As noted by the interviewees, starting small enabled the state to first establish a structure and then focus on opportunities for significant expansion in the years that followed.

> **Getting EITC enacted is the first key threshold and does not have to be biggest out of the box.**

Legislative timing was also a key element. Improved revenues as the state emerged from the Great Recession provided an opening for another push to enact the EITC. However, the minimum wage first emerged as a priority issue. Interviewees noted a conflict with groups working on increasing the minimum wage. These groups supported EITC in theory but were concerned an EITC would compromise efforts toward a wage increase.

#### California

CONTEXT:

**Infrastructural**

- Favorable economic climate, insufficient to support a traditional approach to state EITC

**Institutional**

- Budget policy center with history of advocacy for state EITC in CA
- Evidence generator

**Interpersonal**

- Coalition with strong organizational structure
- Legislative champions

**Individual**

- Ability to identify key decision makers and cultivate champions
- Ability to recognize policy opportunities, think outside the box
- Persistence and dedication

Before renewed efforts to enact EITC began, an agreement to raise the minimum wage to $15/hour was reached. The cost of a typical state EITC remained prohibitive, however, and created competition for revenue with education. Due to mechanisms for funding K-14 education in California, education receives an automatic share of funding based on constitutional formulas, thus any reduction in revenue (through a tax credit like an EITC, for example) would inherently reduce education funding. In response to this concern, EITC advocates reached out to legislative budget staffers, and convinced them the time was right. These staffers then directed the legislative analyst's office to develop options to create an alternative EITC structure that would be more amenable to the state's fiscal realities and funding structure for education.

The CalEITC Advocacy Coalition drove the enactment of EITC in California, led by the California Budget & Policy Center, Children's Defense Fund-California, and United Ways of California. This coalition now includes more than 40 groups representing policy, organized labor, and low-income service organizations. The coalition continues to work on expanding the credit to more tax filers, having regular check-in calls, and biannual meetings. The coalition is now formally led by United Ways of California and the California Immigrant Policy Center with the California Budget & Policy Center as its research and technical assistance co-leader and partner.

Since enactment, California has expanded the CalEITC in four of five fiscal years: increasing the income limit to align with the state's increasing minimum wage (set to increase to $15/hour by 2022-2023) and expanding eligibility to the self-employed and adults without dependent children. The 2019-2020 state budget included the most significant expansion to date, further aligning the credit with the rising minimum wage, increasing the size of the credit for some households previously receiving smaller credits, and creating a Young Child Tax Credit (YCTC) within the EITC structure that provides $1,000 to each tax filer with at least one child under the age of six. Most recently, in the 2020-2021 state budget agreement (enacted in June 2020) state leaders extended eligibility for the CalEITC and YCTC to California tax filers with Individual Taxpayer Identification Numbers (ITINs) with at least one child under the age of 6, the first such expansion to ITIN-filers in the country.[51] All of these expansions were championed by the CalEITC coalition working in concert with a set of core legislative champions and represent major successes.

## Louisiana

Louisiana passed its state EITC in 2007 as 3.5% of the federal credit. In 2018, the credit was expanded to 5%. EITC expansion in Louisiana illustrates how, during an economic recession, a dedicated coalition continuously adapted its strategy to cultivate legislative champions, leverage trade offs, as well as recognize and respond to a unique set of political moments in order to successfully expand.

> **An overnight success seven years in the making.**

When Louisiana established an EITC, the state was in a period of economic boom. Louisiana had a large budget surplus due to federal recovery money in the wake of Hurricane Katrina, insurance proceeds, and high oil prices. Despite this, poverty levels remained high, particularly child poverty. While none of the key informants interviewed worked on the initial implementation of EITC in 2007, they reflected that child poverty was a priority for the governor at the time. Informants were also quick to note that child advocacy organizations initially led the push for EITC policy enactment. The state EITC passed unanimously as part of a larger package of tax cuts that mainly benefited the wealthy. By 2011, the economic climate had changed. State budget surpluses became billion-dollar budget shortfalls, partly due to the 2007/2008 tax cuts and partly due to the dwindling of the post-Katrina boom. Expanding EITC at the cost of $20-50 million was considered a political impossibility.

Key informants described more recent expansion efforts as a "rebirth" attributed in part to new leadership priorities. A new governor who was elected in 2015 (and took office in January 2016) showed keen interest in child wellbeing, so children again became the focus of EITC expansion arguments. Messaging regarding EITC expansion focused on SDOH concepts as well. For example, one informant noted that by making a child's family a little more economically secure, "you increase the chance of a child graduating and becoming productive."

### Louisiana

CONTEXT:

**Infrastructural**

- Economic boom and bust
- Political environment

**Institutional**

- Dedicated child advocacy organization

**Interpersonal**

- Strong core partnerships able to engage broader base of advocates

**Individual**

- Ability to identify key decision makers and cultivate champions
- Ability to recognize policy opportunities
- Persistence and dedication

The Louisiana Partnership for Children and Families (LPCF) led the revived expansion effort and coordinated supporting partners. Key informants noted a core group of partners with whom LPCF had long-standing relationships including Catholic Bishops, the Entergy Power Company, and the Louisiana Budget Project. Entergy Power Company espouses a social mission ("We Power Life") and has promoted EITC awareness in its service areas for over a decade.[52] The Louisiana Budget Project has a long history of promoting the EITC and played a leadership role in the coalition by providing fact sheets and doing direct outreach to legislators.[53]

Additional supporting partners included the United Way, Catholic Charities, National Association of Social Workers, Childcare Association of Louisiana, American Association of Retired Persons (AARP), and the National Association for the Advancement of Colored People (NAACP). The partnership structure was informal, with all business conducted by email and no official name, logo, regular meetings, or official processes.

To expand Louisiana's EITC, LPCF cultivated relationships with legislative champions and educated them on how the credit worked and benefited working families and children. Champions grasped the importance of the credit and became dedicated supporters willing to file legislation to keep EITC expansion alive, even when the odds of passage were unfavorable. Persistence was vital to cultivating an enabling environment in preparation for the opportunity to pass the expansion, which occurred in 2018.

In Louisiana, the legislature usually reviews tax policy in odd years. Due to a budget shortfall, however, there was a special budget session in 2018. EITC expansion was a component of a broader budget deal involving the state sales tax. Increasing the sales tax was viewed as a critical mechanism to raise needed revenue for the state budget. An expansion of the state EITC was included as part of a compromise to offset the effects of a half-penny sales tax increase, which would disproportionately impact low-income consumers. Ultimately, LPCF agreed to the increased sales tax so long as the EITC was expanded. The Louisiana Legislative Black Caucus, in particular, championed the cause and threatened to vote against the sales tax. One key informant noted, "It was a unique political moment" when the minority party in the state legislature had "unique leverage, which they exercised and got it done with one vote to spare."

## New Mexico

A state EITC in New Mexico first passed in 2007 and was established as an 8% match of the federal EITC. With support from the governor, it expanded in 2008 to 10% and then did not increase again until 2019 when it grew to 17% for the 2020 tax year. The New Mexico story is punctuated by a changing political and economic environment, funded coalition, close relationships with legislative champions, and strategic use of data.

> **"Even though we promoted [expanding EITC] for the last dozen years, we did not have high expectations, we just wanted to keep the conversation going until we saw the opportunity."**

New Mexico has high rates of child poverty and is ranked 50th in the United States for child wellbeing. Expansion of the New Mexico EITC stalled after 2008 due to the Great Recession, but as the economic climate improved (a result of increased revenues generated by the state's oil industry), EITC remained a part of legislative conversations. A budget surplus in 2018 coincided with a change in the political environment; elections resulted in a new governor coming into office who was supportive of EITC expansion and had campaigned on the policy. While both the newly elected governor and legislators felt pressure to deliver on this campaign agenda, eight years of backed-up legislation competed for their attention.

New Mexico Voices for Children (NMVC) led a coalition of ten organizations. NMVC had an existing relationship with the new governor that enabled them to coordinate lobbying, messaging, and overall strategy with the governor's office. The coalition created a narrative that linked EITC to child wellbeing given the state's child wellbeing ranking. The coalition also educated new legislators, strategically deploying data from the Brookings Institute to show how EITC dollars directly benefit their districts. These sustained efforts backed by a coalition were critical for the two expansions of the credit.

### New Mexico

CONTEXT:

**Infrastructural**

- Dramatic change to political landscape
- Improved economic climate but high rates of child poverty

**Institutional**

- Child policy and advocacy organization

**Interpersonal**

- Coalition with strong organizational structure and dedicated funding
- Existing relationship with new, supportive governor enabled coordination and message alignment with governor's office
- Knew the legislative audience, able to tailor data to show local district effects to legislators

**Individual**

- Ability to identify key decision makers and cultivate champions
- Ability to recognize policy opportunities
- Persistence, dedication, perseverance

## Ohio

In Ohio, successful expansion of EITC was a result of leveraged trade offs, a strong coalition of organizations, a legislative champion, and the ability to leverage evidence and data.

> **"The times we have had the most success have been around plans to increase or broaden sales tax."**

Like Louisiana, Ohio is an example of the legislative importance of leveraging tax trade offs to advance the EITC. In 2013, Ohio's state legislature was considering a sales tax increase that would have negatively affected low-income families, but lawmakers did not want to appear as if they were adversely impacting people experiencing poverty. To offset this effect, lawmakers also passed a 5% nonrefundable EITC. The EITC later expanded to 10% in 2014 and 30% in 2019. The most recent expansion, in 2019, came alongside a proposed gas tax. Given that gas taxes are regressive and a financial hardship for low-income families, the expansion of the nonrefundable EITC to 30% was a compromise brokered for the passage of the new tax.

The Ohio coalition working on the state EITC is notable for its history and tenacity. The coalition boasts a strong organizational backbone, Policy Matters Ohio (PMO), as well as a legislative champion who promoted EITC in press conferences. This legislative champion introduced EITC legislation multiple times, which helped cultivate an enabling environment for expansion. As part of their coalition building, PMO organized a group of state health and human services stakeholders to prioritize EITC. Although these stakeholders did not engage in direct advocacy, they produced and disseminated research that linked EITC to better outcomes for children: higher birth weights, lower infant mortality, improved school performance and college attendance. This linkage aligned with the new governor's policy agenda in 2019, which focused on children. PMO also initiated a new resource, Health Notes, which are "similar to a Health Impact Assessment, but [an] easier lift." The notes build on a tradition of considering all policy impacts on the business community and urge legislative consideration of how policy decisions outside the scope of public health and health care still impact health and wellbeing.

### Ohio

CONTEXT:

**Infrastructural**

- Political environment

**Institutional**

- State level policy research institute dedicated to tax fairness, and policies to help struggling working families

**Interpersonal**

- Coalition with strong organizational structure
- Legislative champion who promoted EITC
- Organized "evidence builders" to make the case for EITC

**Individual**

- Ability to identify key decision makers and cultivate champions
- Ability to recognize policy opportunities
- Persistence, dedication, perseverance

Moreover, the lead for Health Notes convenes a state coalition called Health Equity Network of Ohio, and they have a relationship with a legislative champion who introduces bills to create health impact assessments for pending legislation.

Ohio's incremental approach to EITC is not just about expansion but also advocacy to convert a nonrefundable credit to a refundable one that will better support low-income families. PMO and the coalition continue to push for refundability by identifying new allies, working across political lines, and preparing for policy windows of opportunity.

## Emergent Patterns from EITC Stories

Using a realist evaluation lens, each innovator state's story provides individual insights into the contexts and mechanisms influencing EITC outcomes, and patterns also emerged across the four innovator states. These patterns can help better identify what policies work, what conditions already existed and what had to be created, what choices were made, what the trade-offs were, and what outcomes were generated regarding the development and enactment of the policies. At a glance, patterns for EITC are summarized in Figure 4 and Table 3 with more detailed explanations following.

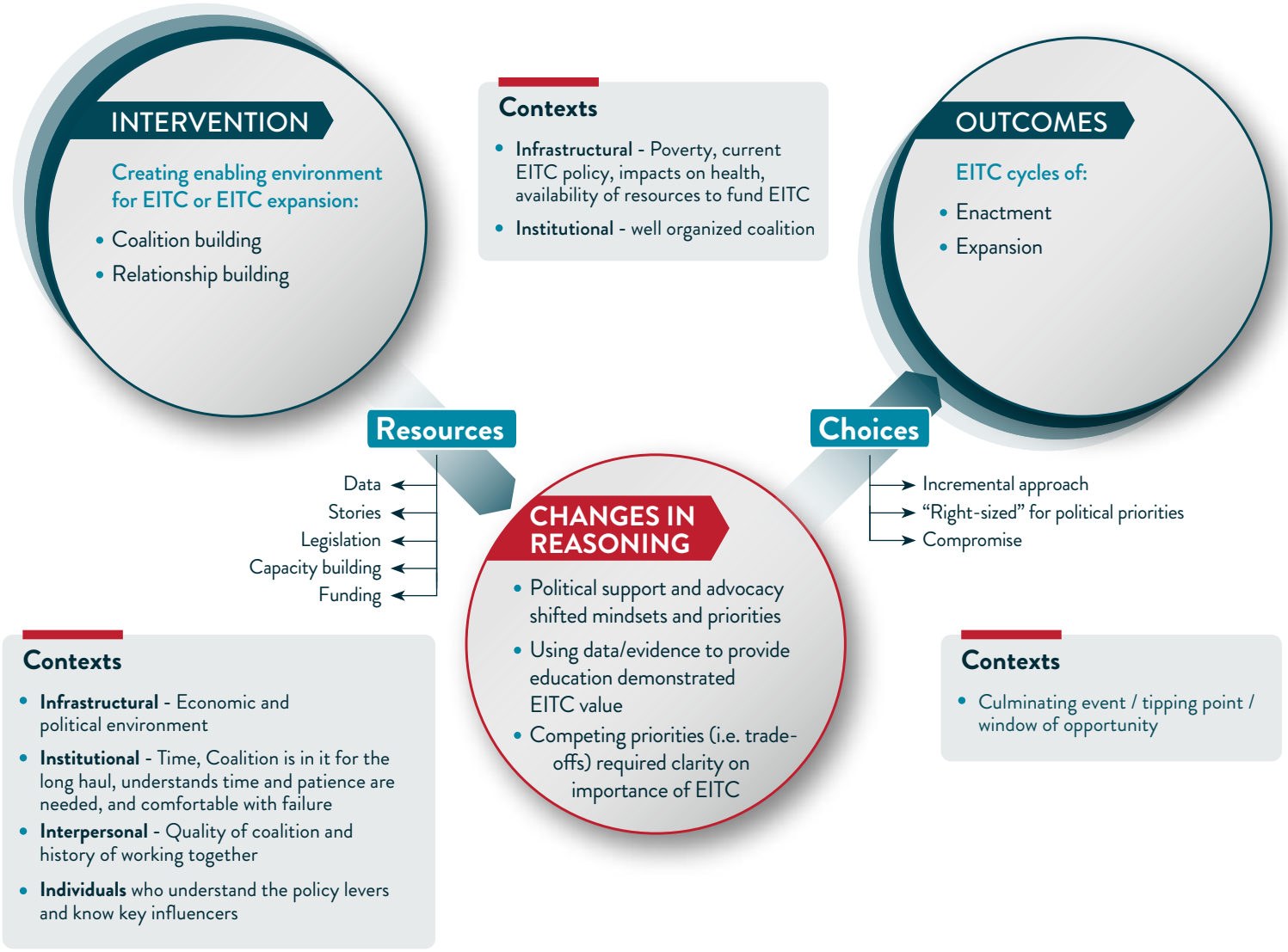



*Figure 4. Summary of EITC Contexts and Mechanisms (Anderson Smith Consulting LLC. All Rights Reserved)*

## CONTEXT, MECHANISM, AND THEMATIC OVERVIEW

| | | California | Louisiana | New Mexico | Ohio |
|---|---|---|---|---|---|
| CONTEXTS | **Infrastructural** | | | | |
| | Economic climate | ☆ | ☆ | ☆ | |
| | Political environment | | ☆ | ☆ | ☆ |
| | **Institutional** | | | | |
| | Active advocacy organization | | ☆ | ☆ | |
| | Active policy center | ☆ | | ☆ | |
| | Evidence generator | ☆ | | | |
| | **Interpersonal** | | | | |
| | Audience-specific communication | | | ☆ | |
| | Legislative champions | ☆ | | ☆ | ☆ |
| | Organized "evidence-builders" | | | | ☆ |
| | Strong partnerships/coalition | ☆ | ☆ | ☆ | ☆ |
| | **Individual** | | | | |
| | Ability to identify decision makers and cultivate champions | ☆ | ☆ | ☆ | ☆ |
| | Ability to recognize policy opportunities | ☆ | ☆ | ☆ | ☆ |
| | Persistence, dedication, and perseverance | ☆ | ☆ | ☆ | ☆ |
| MECHANISMS | Response to advocacy | ☆ | | ☆ | ☆ |
| | Response to competing priorities (trade offs) | | ☆ | ☆ | ☆ |
| | Response to competition for revenue | ☆ | | | |
| | Response to data and evidence | | | ☆ | ☆ |
| | Response to education | | ☆ | ☆ | ☆ |
| | Response to existing relationships | | ☆ | ☆ | ☆ |
| | Response to partnership funding | | | ☆ | |
| | Response to partnership structure | | ☆ | | ☆ |
| | Response to political support | | ☆ | ☆ | ☆ |
| | Response to relationship cultivation | | ☆ | | ☆ |
| THEMES | Incremental approach | ☆ | | ☆ | ☆ |
| | Innovation | ☆ | | | |
| | Passage of time | | ☆ | ☆ | ☆ |
| | Relationship building | ☆ | | ☆ | |
| | Strategic use of evidence | | | ☆ | ☆ |
| | Timing | ☆ | | | |
| | Trade offs | | ☆ | | ☆ |
| | Windows of opportunity | ☆ | ☆ | ☆ | ☆ |

*Table 3. Context, Mechanism, and Thematic Overview in California, Louisiana, New Mexico, and Ohio*

## Contexts

Contextual elements were identified for each EITC innovator state. These contexts include infrastructural, institutional, interpersonal, and individual factors. Elements of these factors are shown in Table 3 and summarized in more detail below.

### Infrastructural

EITC key informants and Deep Dive convening discussants all noted the importance of political and economic climates for passing legislation. Participants described establishing EITCs in both conservative and liberal environments, in times of economic boom and bust. Mechanisms employed involved adapting resources and strategies to align with political and economic priorities and preparing—sometimes for years—in order to take advantage of windows of opportunity.

Once EITC legislation is passed in any state, the actual implementation involves establishing or changing operations and systems to administer the policy and to ensure uptake of EITC by intended beneficiaries. Administering the new policy involves a state's department of revenue or taxation updating relevant forms and paperwork, marketing the new credit, and helping ensure tax filers access quality tax preparation services, such as the Internal Revenue Services' (IRS) Volunteer Income Tax Assistance (VITA). To this end, accountability was an underlying context for implementation, and Deep Dive convening participants noted the importance of clarifying how the EITC program is going to run and who "owns" it as critical components for successful implementation.

> **"...clarifying how the EITC program is going to run and who "owns" it as critical components for successful implementation."**

### Institutional

Project participants noted several institutional contexts enabling adoption of EITC in their specific states. In two states, California and New Mexico, policy change was enabled by the involvement of an active policy center. Involvement of an advocacy organization was also important for Louisiana and New Mexico in particular. For other states, such as California and Ohio, it was also critical to have access to an evidence generator such as the Budget Policy Center in California, which produced and shared information related to EITC through published briefs.

### Interpersonal

Multiple interpersonal contexts also contributed to state EITC adoption. Participants spoke of the importance of audience-specific communication and education, working with legislative champions, organizing "evidence builders," as well as strong coalitions and partnerships.

Coalitions represented a wide variety of organizations, including faith-based groups, nonprofits focused on social services, businesses, and anti-poverty advocates, among others. The organizational structure of the coalitions varied in each state, with some having a more formal structure and others relying on a long history of working together. Deep Dive convening participants highlighted how coalitions have the potential to connect EITC beneficiaries with legislators since, as one key informant noted: "[coalitions] have direct contact with low-income populations and act as a bridge to political leadership." Passion, commitment, and patience also appear to be necessary characteristics of coalitions and their members.

Education or audience-specific communication is a second interpersonal contextual element worth highlighting. In addition to revising tax forms, states must ensure eligible recipients are aware of the new EITC benefit.

### Individual

Three individual contextual factors surfaced in the four states: 1) capacity to identify decision makers and cultivate champions; 2) ability to recognize policy opportunities; and 3) involvement of persistent, dedicated, and persevering individuals. Without these individual contexts, it is unlikely that innovator states would have achieved EITC adoption.

### Overarching Contextual Themes

Several overarching themes arose from the exploration of innovator state contexts. Most notably, participants spoke of the importance of taking an incremental approach, the passage of time, and windows of opportunity. Taking incremental steps by passing legislation that may not be perfect is a known starting point for policy change. Efforts can then focus on increasing the amount of the EITC (as in Louisiana, New Mexico, and Ohio), changing a nonrefundable EITC to a refundable one (Ohio), or expanding the EITC to other groups, such as adults without dependents or adults with ITINs (California). By nature, policy work requires individuals willing to invest the time to create and recreate strategy. But timing remains critical and requires the ability to recognize and take advantage of windows of opportunity.

## Mechanisms

To follow the discussion of contexts, possible mechanisms were also identified for each innovator state. Mechanisms "describe how it is that programmes and interventions contribute to outcomes."[55] Mechanisms may be observable or unobservable and are often difficult or impossible to measure, but they are produced when people interpret and respond to political, social, emotional, or material resources. The mechanisms below describe how project participants responded to resources, which may have contributed to program outcomes. Mechanisms are also shown in Table 3 and described further below.

### Advocacy, Education, and Partnerships through Outreach and In-Reach

Outreach and in-reach are about building interpersonal relationships and were the uptake mechanisms noted by both key informant interviews and Deep Dive convening participants. Outreach includes messaging that uses trusted voices and considers accessibility such as mode (radio, Online, print) and language to meet beneficiaries "where they are." EITC outreach also involves the promotion of VITA as a critical provider of free tax preparation services. According to Deep Dive convening discussants, there is a common misconception among filers that professional tax preparers are better than the free option, when in fact, VITA sites are generally more accurate when it comes to the EITC. More importantly, free and accurate tax preparation by VITA sites ensures that the full benefit of a credit goes to tax filers.

In-reach involves recognizing the complementary roles that various state and local government agencies can play in outreach and uptake. To promote uptake, Deep Dive convening discussants noted the importance of partnerships with community-based organizations because they are closest to those who are eligible for the EITC. Interagency coordination with safety net programs such as the Special Supplemental Nutrition Program for Women, Infants, and Children (WIC) and the Supplemental Nutrition Assistance Program (SNAP) can increase uptake as individuals receiving these services may also be eligible for EITC. Successful outreach and in-reach need systems and structures, such as the RACI model (a tool to map roles and responsibilities[56]), to identify partner assets and clearly define roles.

### Competing Priorities and Trade offs

Key informant stories illustrate how the "trade off" is an effective strategic mechanism, since the EITC can help balance out otherwise regressive tax packages and did so for several innovator states. Sales tax increases impact poorer families disproportionately, and an EITC can help offset that impact. Both Louisiana and Ohio described "trading" increased sales taxes (on books and gas, respectively) for EITC expansion. Votes were needed to pass the tax legislation, and it was a "key moment to get an EITC through," according to one key informant.

Deep Dive convening participants also mentioned "trade offs" as a strategy, noting both economic feasibility and EITC refundability. A refundable EITC may benefit more people, but a nonrefundable EITC can serve as a more affordable starting point. Even though a nonrefundable EITC credit is unavailable to individuals with no tax liability, this sort of trade off is a form of strategic, incremental thinking—an approach that embraces the right size for political or fiscal realities of the moment.

### Competition for Revenue

Economic feasibility was the context underlying California's original approach to EITC. A large state, with a large number of qualified recipients, meant that California could not easily afford a typical state EITC modeled on the federal program while also providing a meaningful benefit to eligible recipients. Creating a unique EITC focused on those with the lowest incomes and enabled California to cross the critical threshold of getting EITC legislation on the books. Building on the established EITC structure, California was able to increase the size of the benefit and extend eligibility to additional populations in need.

### Relationships with Champions

Participants cited legislative or gubernatorial champions as critical to navigating political landscapes and facilitating EITC enactment and expansion. Champions were usually willing to introduce legislation multiple times in order to keep EITC in the legislative mix. Taking the time to understand influencers and their priorities can be what tips a "decision-maker" into a "champion."

Deep Dive convening participants further noted that legislators, particularly legislative leadership and those who had experienced poverty or benefited from EITC, were effective champions. Key informants in Louisiana described the importance of education and capacity building with decision-makers, until they "know the ins and outs of the credit as well as we do." New Mexico discussed tailoring data to speak directly to the priorities of the decision-makers in local districts. Influence can also grow, as shown in New Mexico, where advocates leveraged a preexisting relationship with an influencer who then became the governor.

## Role of Public Health in EITC

Key informant interviews and Deep Dive convening participants suggested that, up until now, public health had a limited role in EITC development, enactment, and implementation. Key informants described this in two ways. First, health advocacy organizations have long pursued other priorities including issues related to the Affordable Care Act and Medicaid. Second, EITC advocates did not recognize what public health could bring to the table. Some key informants further indicated public health was unaware of the need or opportunity to engage with the EITC. As one Louisiana informant noted, "I think [our state public health institute] may have helped us if we had asked, but they were not asked." There were some exceptions noted by key informants and Deep Dive convening participants. For example, in Ohio, public health stakeholders provided reports and evidence detailing the health benefits related to EITC. While public health did not participate in direct advocacy, these reports were instrumental to the passage of a state EITC in Ohio. In Massachusetts, the Boston Department of Public Health clearly articulated the health impact of the EITC, and the Mayor of Boston made EITC one of his priorities.[57] A key takeaway from both the Deep Dive convening and follow-up meeting was the importance of bringing people together. Collaboration across sectors promotes efficiency by identifying opportunities to share resources and reduce redundancies, thus potentially decreasing costs and improving performance and outcomes—particularly in times of increased pressure on government resources.[58] The two EITC-related convenings served to further engage the public health sector with the EITC and tax policy sector. Convening discussions and questionnaire responses strongly suggest that public health can play a more significant role and be a credible, non-partisan voice on the health impacts from EITCs, including health equity and increased quality of life. **The Deep Dive convening sessions generated practical ways public health can immediately contribute to EITC development, enactment, and implementation:**

> **"We can immunize against poverty just like we have immunized against other diseases."**
>
> - Deep Dive participant, June 2019

**Public health can build evidence.** A natural role for public health is research and evidence building. Deep Dive convening participants noted that health is not always a key driver in EITC policy, and health-related outcomes are not consistently tracked. Public health can identify appropriate metrics and data collection methods to demonstrate the impacts of EITCs on community and population health.

**Public health can be a policy accelerator.** Public health can support the creation of persuasive narratives on the value of poverty mitigation strategies and policies. They can then use these narratives to advocate for policy change in diverse policy arenas. Furthermore, public health can contribute to identifying windows of opportunity.

**Public health can promote EITC to increase uptake.** Through local health departments that serve low-income communities, public health can disseminate information related to the EITC and promote free tax preparation sites such as VITA.

### Capacities Needed for Public Health Contribution to EITC

The follow-up meeting was another opportunity to deepen the dialogue between public health and EITC stakeholders. Public health participants recognized that EITC has a connection to their work, but noted institutional barriers—namely competition with other priorities and the burden of work on local health units. In responses to the post-meeting questionnaire, EITC policy participants recognized that knowledge about EITC is "far less ubiquitous among people focused on the needs of low-income families outside of policy folks than I believed." According to public health participants, the necessary skills needed to enable meaningful contributions to EITC development are "all of Public Health 3.0"[59] including "advocacy, systems thinking, partnership building" as well as creativity and an "entrepreneurial attitude." Discussants also noted a need for EITC-related tools and resources that directly connect to public health.

## Lessons Learned from EITC and Public Health

Below are suggestions for how public health can be better equipped to contribute to EITC efforts and other relevant HI-5 Initiative CWIs or poverty mitigation policies:

### Infrastructural

- Provide training and technical assistance to public health staff to increase foundational skills in SDOH. For example, describe how poverty is a root cause for poor health and how the EITC directly addresses poverty.
- Allocate resources for public health staff to participate and support poverty reduction efforts.
- Encourage the adoption of the Health in All Policies (HiAP) approach and seek opportunities to incorporate health considerations into decision-making across sectors and policy arenas.
- Seek opportunities to integrate poverty reduction strategies such as the EITC into existing public health programs. For example, Street Cred places VITA tax preparers in clinics.

### Individual/Interpersonal

- Develop relationships with organizations that work to address poverty.
- Practice open-mindedness, curiosity, and humility in approaching new partnerships. Public health is still learning how to engage with anti-poverty efforts and policies, such as EITC. By being open to diverse perspectives and new partnerships, public health can learn how to contribute to SDOH by learning from people who have expertise in specific determinants.

## EITC Conclusion

EITCs offer a clear potential to benefit population health through upstream effects on reducing poverty, especially child poverty. Learnings from this project show that the EITC represents a strategic and often feasible idea due to the bipartisan appeal of the policy. Key informants and convening participants cited poverty alleviation as a primary motivating factor for the development of EITC policies in their respective states. EITCs help children as well as working low-income adults, two groups that are valued across party affiliations. This reasoning addresses the "personal responsibility" argument often levied at social safety net programs in that, as one key informant maintained, the credit "helps people who are working, really helps those who are helping themselves." In practice, EITCs require an ongoing cycle of development and enactment to create and sustain an environment that supports the policy and strengthens it over time.

The EITC is a high-impact strategy for improving population health and deserves public health's attention and advocacy. To develop and strengthen partnerships with EITC and poverty advocacy groups, public health practitioners will require time and tools. CDC Foundation and CDC developed the *Public Health Action Guide: EITC* (see Appendix F for a copy of the guide). This guide is an introduction to the EITC and provides a road map for public health practitioners to collaborate and strengthen policy and outreach partnerships for EITC expansion and uptake. By using tools such as the *Public Health Action Guide: EITC*, considering the contexts and mechanisms that contribute to successful outcomes, and implementing the recommendations outlined in this report, public health can make strides toward improving health and wellbeing through poverty reduction.

# PUBLIC TRANSPORTATION SYSTEMS

## Key Acronyms

**CDC**
Centers for Disease Control and Prevention

**CWI**
Community-Wide Intervention

**DOT**
Department of Transportation

**HI-5**
Health Impact in Five Years Initiative

**Thinking Group**
HI-5 Partner Consortium Thinking Group

**SDOH**
Social Determinants of Health

Public transportation systems consist of different modes intended for use by the public that can move groups of people to their destinations on scheduled, preplanned routes.[60] Modes of public transportation include buses, light rail, subways, trains, van pool services, ferries, among others,[61] and some passengers use a combination of the modes to reach their destinations. Public transportation systems support peoples' ability to safely and reliably reach everyday places, including work, school, shopping, and healthcare destinations.[62,63] Public transportation is viewed as a SDOH because of its multifaceted nature: contributions to pollution; motor vehicle–related deaths and injuries; mobility; access to employment, vital goods, and services; and active transportation.[64] Public transportation systems can be introduced or expanded by funding from federal, state, and local levels. Improving public transportation results in broad and significant health impacts.[65]

## DEFINITIONS

**Public transportation** (also called transit, public transit, or mass transit)
Transportation by bus, rail, subway, ferry or other mode that provides regular and continuing general or special transportation to the public – does not include school buses, charter, or sightseeing service.

**State Departments of Transportation (DOT)**
State DOTs coordinate transportation for all modes within a state. State DOTs are responsible for delivering highway, bicycle, and pedestrian projects. Their roles for other modes (such as transit) range from oversight and coordination to direct project delivery.

**Transit agency** (also called transit system, transit authority or transit administration)
An entity (public or private) responsible for administering and managing transit activities and services, usually at the local or regional level. Transit agencies can directly operate transit service or contract out for all or part of the service provided.

**Bus system**
A mode of transit service characterized by roadway vehicles powered by diesel, gasoline, battery, or alternative fuel engines. Buses operate on streets and roadways in fixed-route or other regular service and may stop every block or two along a route several miles long.

**Paratransit** (also called demand response or dial-a-ride)
Mode of transit service for seniors or individuals with disabilities. Passenger automobiles, vans or small buses respond to calls to pick up and transport passengers to their destinations. The vehicles generally do not operate over a fixed route or on a fixed schedule.

**Microtransit** (also called on-demand transit)
Small-scale, on-demand public transit services that can offer fixed routes and schedules, as well as flexible routes and on-demand scheduling. Designed for areas that lack the population to sustain regular bus routes.

*Table 4. Transportation system: Key terms and definitions*[66]

Adequate access to public transportation systems is associated with positive health outcomes and supports environmental health, economic security, and public safety. Public transportation passengers often have longer journeys to their desired destinations than private transport users and often walk or ride their bicycle on sections of the trip.[67] This movement between modes, or legs of the full journey, results in an average of 30% more steps walked each day than those who do not use public transportation.[68] These additional steps contribute to increased levels of physical movement that have the potential to improve overall health. For example, physical activity can help to combat chronic conditions such as cardiovascular disease and Type 2 diabetes.[69] Public transportation also has the potential to reduce greenhouse gases[70] by reducing the number of individual vehicles on the road, since vehicle-driven emissions have been linked to adverse health effects such as exacerbation of asthma as well as cardiovascular and respiratory illnesses.[71,72] Moreover, the use of public transit has also proven to be safer than the use of private vehicles, with fewer motor vehicle crashes and decreased crash rates among pedestrians, bicyclists, motorists, and transit passengers[7]. Public transportation services can result in per capita annual health benefits[73] due to increased walking and cycling and reduced emissions and crashes.

Despite the multiple health, environmental, and economic benefits connected to transit, inadequate access to public transportation systems can detrimentally impact those already most vulnerable. Access to public transportation can be viewed as a SDOH given that people with disabilities, the elderly, people with low income, and children remain more reliant on public transportation. Constraints to reach employment, health care, schools, food provisioning, and/or social interaction can result from the limitations of pre-set and scheduled (or "fixed") transit routes which may not be easily accessed in certain neighborhoods.[74]

Communities of color are especially impacted by disproportionate access to public transportation. Minorities are less likely to own a private car with 24% of African-American households, 17% of Latino households, and 13% of Asian-American households not owning a car, as compared to only 7% of white households.[75] Historically, policies of urban renewal (the clearing of "slum" neighborhoods to make way for new development) and prioritizing transportation infrastructure (such as highway or public transit development) have disproportionately disrupted communities of color while subsidizing transportation costs and property values in white communities.[76] Transportation infrastructure decisions impact public health and need to consider people most reliant on transit, particularly communities of color, given the detrimental health, social, and economic effects linked to inadequate access to public transportation. In this way, public transportation systems are directly tied to SDOH. Through increased access, this HI-5 CWI offers an immense potential to advance health equity.

## Bus Systems: A Focus

Given the breadth of public transportation implementation around the country, this project focuses on states that expanded community access to bus systems—a discrete aspect of public transportation planning policy that uniquely addresses health equity. Historically, prioritizing transportation infrastructure with little outreach to communities of color has resulted in detrimental social, economic, and health effects, but the argument for expanding bus systems is more inclusive of the concept of equity.[77] Expanding bus systems makes the most economical and environmental sense within the context of other modes of public transportation and also provides greater equity benefits since buses are used more by transit-dependent people.[78] An analysis by the Victoria Transport Policy Institute highlights the advantages of buses compared to rail (see Table 5).[79]

In addition to the advantages described in Table 5, many diesel buses are being replaced with zero emission (electric), natural gas, hybrid-diesel, and bio-diesel buses across the United States, which produce fewer pollutants and will ultimately improve air quality.[80,81] Since communities of color and low-income communities are more likely to live in areas with higher concentrations of air pollutants,[82] cleaner bus replacements may indirectly address health equity and improve respiratory health.

With a focus on expanding bus transportation, this section of the report on public transportation systems focuses on states' experiences in introducing or expanding bus systems or incorporating public health involvement into public transportation planning to improve community health.

### Advantages of Bus

(compared to rail)

- **Flexibility.** Bus routes can change and expand when needed. For example, routes can change if a roadway is closed, or if destinations or demand changes.
- **Requires no special facilities, such as rails.** Buses can use existing roadways, and general traffic lanes can be converted into a busway.
- **More suitable for dispersed land use,** and so can serve a greater rider catchment area.
- **Several routes can converge onto one busway,** reducing transfers. For example, buses that start at several suburban communities can all use a busway to a city center.
- **Lower capital costs.**
- **Used more by transit dependent people,** so bus service improvements provide greater equity benefits.

*Table 5. Advantages of the bus system as compared to rail*

## Public Transportation Systems Project Methods

Individuals representing five innovator states[83] participated in this project. Participants included public transportation and public health experts. Representatives from the five selected states were invited to participate in this project through key informant interviews as well as a Deep Dive convening. A follow up meeting, similar to what was done for the EITC project, was canceled due to the COVID-19 pandemic. Additional information on the methods for each project phase is provided below.

### Public Transportation Systems Innovator States

Similar to the methods for the EITC project, a systematic process was used to select "innovator states"[84] to partake in key informant interviews and a Deep Dive convening on public transportation systems. Ultimately, five states including Massachusetts, Michigan, Oregon, Tennessee, and Washington were selected. To do so, the Thinking Group drew from environmental scans to identify places that had explicit language in their policies (i.e., state statute) or had planning activities about the intersection of health and transportation. Specifically, the Thinking Group identified states that met the criteria in Table 6.

**Transportation Innovator State Selection Criteria**

State transportation laws that explicitly require their mass transportation systems to increase access to retail, services, jobs, and education.

Transportation laws that mention traffic congestion but also cite improving mass transportation access and emission reduction to reduce congestion.

Active/land use/redevelopment: Transportation laws that address zoning and land use in either state or local jurisdictions for the purpose of connecting to public transportation corridors, walking, and biking routes, and other services in urban or rural areas.

*Table 6. Criteria for selection of transportation innovator states*

### Public Transportation Systems Key Informant Interviews

Nine public health and public transportation experts (see Appendix G and H) from the five states of Massachusetts, Michigan, Oregon, Tennessee, and Washington were selected through further discussions with the Thinking Group. The primary goal for the key informant interviews was to identify the conditions that led to the development and implementation of community-wide transportation policies, specifically focusing on the expansion of safe, timely and affordable bus access to frequent destinations, such as work, school or shopping (excluding rides to wellness visits). Although not all five states had expanded bus routes, all were innovators, and some had incorporated public health aspects into either their planning or implementation of policies.

The majority of interviews took place between November 2019 and January 2020. Pivoting from the approach for the initial set of interviews with four states, the final interview with the state of Washington was conducted in June 2020 and mainly included questions about current issues faced by public transportation as a result of the COVID-19 pandemic.

### Public Transportation Deep Dive Convening

In late February 2020, a one-day, in-person Deep Dive meeting was convened with multiple stakeholders, including national and state-level representatives from the transportation and public health sectors. National stakeholder groups included the American Public Health Association (APHA), American Public Transportation Association, Association of State and Territorial Health Officials (ASTHO), National Association of County and City Health Officials (NACCHO), National Association of Development Organizations (NADO), and Transportation for America (T4A). State representatives were selected based on the criteria used for innovative state selection (see Table 6). In order to gather additional viewpoints, participants were from California, Georgia, Maryland, Massachusetts, and Pennsylvania. Other organizations including CDC Foundation, CDC, FHI 360, and RWJF also attended (see Appendix I for Deep Dive convening participants).

The Deep Dive convening process encouraged states to tell their stories, and the World Café Model [85] was used for smaller break-out sessions (see Appendix J for Deep Dive Design).[86] The goal of the convening was to build upon the findings from the key informant interviews and to:

- Collaborate and learn how partners can **create policies that increase health equity** and address social determinants of health in their communities
- Understand more about best practices and lessons learned when implementing programs to **increase bus access to everyday destinations** through innovative public transportation policy (both urban and rural)
- Learn about **innovative transportation policies to support improved health outcomes**
- Identify **public health's role in transportation policy**
- Discover how a **multi-sector collaboration** on public transit could greatly benefit both public health and public transportation goals

Results from the Deep Dive convening are discussed further below. Although a follow-up meeting occurred for EITC (described above), the public transportation systems project did not hold a follow-up meeting due to timing with the COVID-19 pandemic.

## Results: Public Transportation Systems

### Stories from Massachusetts, Michigan, Oregon, and Tennessee (presented in alphabetical order)

The stories below highlight a series of innovative activities described by key informants representing each innovator state. While not all four states were actively engaging in cross-sector collaboration, each was effective in creating change to benefit the health disadvantaged communities. These stories show that public health and transportation agencies are working together in a variety of settings in response to different circumstances. Some states have legislated mandates requiring collaboration between the two fields. Other states have funding mechanisms in place to ensure the inclusion of both public health and transportation—often revolving around equity and access for persons who are disabled, elderly, or need access to services such as food banks. Still others have developed relationships independent of mandates, whether in response to a crisis, a political change, or a window of opportunity recognized by an innovative leader.

Common themes emerged from the key informant interviews, including community engagement, innovation and thinking "outside the box," building relationships across sectors, the strategic use of data to influence policy change, and recognizing windows of opportunity. These themes were universal across the four states. Interviewees encouraged innovators to reach out to non-traditional partners and convene the right people to achieve a greater result within the public transportation space. There are four interventions related to public transportation systems highlighted in this section:

- Cross-sector coalition to advocate for funding for rural and suburban public transit (Massachusetts)
- Massive expansion of a work-related regional bus transportation program (Michigan)
- Implementation of a 0.1% payroll tax to fund introduction and large expansion of bus routes/public transportation and a formalized relationship between public transportation and public health (Oregon)
- Integration of health elements and active transportation into Metropolitan Planning Organization prioritization and funding (Tennessee)

## Massachusetts

In Massachusetts the formation of the Regional Transit Authorities Advocacy Coalition (RTAAC) has helped maintain funding for public transportation (including expanded bus access) outside of the metro Boston region. The forming of this central coalition involved coordinated advocacy campaigns and a combination of strong established partnerships, as well as the formation of new cross-sector relationships between public health and transportation organizations.

Created by Massachusetts state law in 1973, the now fifteen Regional Transit Authorities (RTAs) connect area residents to medical care, substance use treatment, groceries, jobs, and education. Despite their essential function, RTAs have suffered in recent years from chronic underfunding and year-to-year budget uncertainties, making it difficult to maintain existing services – and impossible to expand services to where they are most needed.[87] Massachusetts Public Health Association (MPHA) is a private, non-profit, statewide membership organization that promotes a healthy Massachusetts through advocacy, education, community organizing, and coalition building. MPHA is a member of Transportation for Massachusetts (T4MA), a diverse statewide coalition of more than ninety members and partner organizations with a common goal to improve transportation across the Commonwealth. This coalition advocates at the state, federal, and local levels for transportation policies that are innovative, sustainable, and environmentally friendly. When the T4MA first started in 2010, they primarily advocated for better public transit in the metro Boston area. As the coalition grew, the T4MA coalition was able to focus also on the need for better public transportation in the rest of the state – including Worcester, MA, the second largest city in New England. About the same time, MPHA was leading a multi-sector "Active Streets Working Group" that successfully advocated for a new statewide, $50 million "Complete Streets Funding Program" to be established by the Massachusetts Department of Transportation (MassDOT).

Increasingly, MPHA and T4MA were collaborating on shared goals, so when the governor proposed to level-fund RTAs in the FY19 state budget, they were able to respond strategically together. Without additional funds to pay for higher fuel and health insurance expenses, there would be bus service cuts and/or fare increases outside of metro Boston.

### Massachusetts

CONTEXT:

**Infrastructural**

- Economic climate: Chronic underfunding of rural/suburban transit authorities
- Political environment: Mixed. Governor proposed cuts, congress divided, local legislators and city planners supportive – compromise
- Regional (urban/rural) - Decentralized state

**Institutional**

- Historical institutional relationships - Public Health and Public Transportation
- Active advocacy organization - broad cross-sector relationships
- Capacity to produce or use evidence: transportation one of top three issues in the state – legislators could not ignore

**Interpersonal**

- Audience-specific communication
- Ability to share evidence in strategic way
- Strong partnerships/coalition - Good relationships with local legislators, multiple stakeholders

**Individual**

- Ability to identify decision makers and cultivate champions
- Ability to motivate and convene appropriate stakeholders
- Ability to recognize policy opportunities
- Ability to take on multiple roles
- Persistence, dedication, and perseverance

> **The whole process happened rather organically and quickly, in response to a threat to funding.**

- Massachusetts Key Informant

At the same time, data from scores of community health needs assessments – required by hospitals every three years by the Affordable Care Act – showed transportation as one of the top community concerns throughout the state. Outside of Metro Boston, people reported not being able to get to where they needed to be in a timely manner without access to a private vehicle. In some parts of the state there was no evening service and/or weekend or holiday service, as there is in metro Boston.

Motivated by both the threat of the governor's proposed budget cuts to RTAs and data showing the urgent need for public transportation throughout Massachusetts, MPHA and T4MA were compelled to act. Together, with many distinct partners, (community health networks, environmental organizations, academic institutions, municipal leaders) and broad connections among different jurisdictions, they were quickly able to convene (via conference calls) a growing number of stakeholders who also wanted to strategically advocate for RTAs.

## Regional Transit Authority Advocacy Coalition (RTAAC) – Growing a Coalition to Increase State Funding

- MPHA and T4MA named their growing conference calls the RTA Advocates Coalition (RTAAC).
- The RTAAC grew quickly in 2018 as it worked on the FY2019 budget, and then FY2020 as well. The coalition now has more than 50 organizational members.
- The RTAAC co-chairs hold monthly conference calls to provide legislative updates, share RTA concerns from around the state, and coordinate advocacy efforts (on average 15-20 people per call).
- A subgroup of policy experts, the RTAAC Strategy Team, convene pre-meetings to swap news and set monthly agendas identifying key topics to discuss and action plans. Topics include questions/concerns of RTAs and/or riders, announcements from MassDOT, and conversations with legislators or MassDOT staff.
- Ongoing strategic advocacy efforts include asking people to contact their state legislators at key times with specific requests, writing opinion pieces for local media outlets, and meeting with municipal leaders.

Stakeholders in the RTAAC include transportation experts (T4MA, RTAs), legislators, city planners, community-based advocacy groups, clinical providers, end users (i.e., riders) and representatives from the business community. The coalition first lobbied the Massachusetts Legislature for higher state funding for RTAs. In FY2019, the Massachusetts House of Representatives did not propose a higher amount, but the Senate did. Ultimately, lawmakers reached a compromise which resulted in a higher funding amount than the governor's initial budget. The RTAAC continues to advocate for better public transit. If a proposed statewide revenue bill goes through, there may be a window of opportunity to lobby legislators to vote for transportation and expand services. [Update: Due to COVID-19, this bill has been tabled and it is unknown whether it will be taken up in the next session].

> **To solve the underlying cause of hunger, it is important to examine why people are hungry in the first place. The answer is multi-pronged—transportation, health, housing, lack of employment, quality education.**

- Massachusetts Key Informant

One of the RTAAC's members is an advocate from the Western Massachusetts Food Bank, which has historically focused on food insecurity and protecting public programs. The advocate has a broader view of how food banks can expand policy to prioritize SDOH. In her view, Supplemental Nutrition Assistance Programs, school breakfast programs and food banks should be emergency services for people; they are the band-aids versus the long-term solutions.

> **"Sometimes it is just having everything aligned at the same time, serendipity. But often it just takes sending an e-mail or picking up the phone."**
>
> - Massachusetts Key Informant

Through her participation in the coalition, the food bank advocate noted a tendency for programs to work in silos with a lack of overall coordination, so she has been working to bring four counties together. She recently planned and hosted a forum, which included hospitals, disability advocates, city planners, advocacy groups, planning commissioners as well as transportation staff, MPHA, T4MA and end users. Every single one of the Western Massachusetts legislators attended the half-day discussion with the stakeholders. The forum process itself focused on building relationships, connecting faces to names, and developing trust, "so when they see your name they know about your work and have trust in you."

Massachusetts' key informants encouraged other states to find out who is doing what to avoid duplicative efforts and to build upon each other's work. They also encouraged collaboration in the form of bringing together those who do not always work together, as well as thinking outside of the box to form a broad coalition. They recommend focusing on shared values related to transportation, including health equity, social justice, poverty, health, jobs, food access, and healthcare. They also urge innovators to work with legislators by involving them at every step of the way.

## Michigan

The case of Michigan demonstrates a massive expansion of bus routes to transport workers from the town of Flint to neighboring communities with employment opportunities. The Flint Mass Transportation Authority (MTA) work-related regional transportation program began in the late 1990's. At that time, public policy makers were grappling with the issue of high unemployment in urban areas as businesses moved to cheaper land in the suburbs. Most people lived in the cities, so bus routes needed to expand. A federal initiative called Jobs Access Reverse Commute (JARC) awarded grant funds to transit agencies to provide bus transportation outside of their traditional service area. MTA began transporting workers to two neighboring counties. For almost twenty years, this remained the extent of the work-related transportation program.

Then in 2013, one of the "most egregious examples of environmental injustice and racism occurred in Flint," according to Paul Mohai, a professor at the University of Michigan School for Environment and Sustainability.[88] In response to a large deficit, Flint's water supply was switched from Detroit's system to the Flint River as a temporary cost-saving measure, while a new pipeline could be built from Lake Huron. "The Flint River, which flows through the heart of town, was notorious for being contaminated with industry pollution and has served as an unofficial waste disposal site for treated and untreated refuse from the many local industries that have sprouted along its shores, from carriage and car factories to meatpacking plants and lumber and paper mills."[89] Despite known contamination, the water was not treated, and lead leached out from aging pipes into thousands of homes for almost 20 months. The result was community-wide sickness and elevated blood-lead levels in children citywide—nearly tripling in certain neighborhoods.[90]

The Flint community, comprised of black (54%), white (37%), Latino (4%), and the rest mixed race,[91] was seeing direct health consequences of long-standing environmental and racial inequities. Residents noticed changes in water quality shortly after the switch of their water source and expressed concerns about impacts to their health. However, state officials dismissed their complaints and provided assurance that the water was safe even in the face of growing evidence to the contrary.[21] This lack of power in the decision-making process and the government's slow response may not have occurred in a similar context within a predominantly white community.

### Michigan

CONTEXT:

**Infrastructural**

- Economic climate: poor economy in Flint with high unemployment and poverty rates, strong economy in neighboring county with need for more workers
- Political environment: bipartisan political support due to water crisis
- Regional (urban/rural)
- Population shift (sociodemographic) - jobs moved from the cities to the suburbs/need for more bus routes

**Institutional**

- Capacity to produce or use evidence
- Historical institutional relationships
- Government agency involvement (local transit authority reached out to State Department of Transportation for funding and equipment)

**Interpersonal**

- Strong partnerships/coalition – new relationships - local transit authority and chamber of commerce and (initially) governor
- Ability to share evidence in strategic way

**Individual**

- Ability to identify decision makers and cultivate champions
- Ability to motivate and convene appropriate stakeholders
- Ability to recognize policy opportunities
- Ability to take on multiple roles
- Persistence, dedication, and perseverance
- Motivated by low community morale, health, and economic crises

At the same time, Flint's unemployment rate was high at 23.7% with a poverty rate of 41.9%. According to the 2012-2016 American Community Survey, almost 19% of households did not own a vehicle, compared with the state average of 8%. There was extremely low morale throughout the community.

In response to the crisis, the governor created "Mission Flint" with an immediate goal of providing safe drinking water to the community, and a secondary goal of creating 1,000 new jobs for Flint residents.

Knowing that it would be challenging to bring new companies to Flint, an alternative approach was considered: take residents OUT of Flint to work in neighboring communities.

During this same period in 2015-2016, the economy across the rest of Michigan began to recover from the great recession and the demand for unskilled labor increased in the manufacturing industry. The unemployment rate in neighboring Livingston County (about 90 minutes from Flint) was low at 5.5%, and the poverty rate was 5.9%. This was coupled with a manufacturing boom as companies, unable to find workers, were eliminating shifts and turning down orders. Employers contacted Howell's Chamber of Commerce in Livingston County and threatened to leave the county if they could not secure more workers. In response, the Chamber of Commerce surveyed employers and identified more than 800 unfilled jobs. In addition, 57 companies were willing to coordinate work shifts with bus schedules to bring employees to job sites, and 21 companies were willing to pay for the bus transportation.


> **"It was really important during the implementation phase to have everyone at the table, to meet in-person, to offer input at meetings and to work through things. This is a huge part of the reason that this worked out so well."**
>
> - Michigan Key Informant

The Chamber of Commerce reached out to the Flint Mass Transportation Authority (MTA) in late 2015. Flint MTA convened a meeting with the Chamber of Commerce, some company plant managers, a local workforce development agency and representatives from the Governor's office. The Chamber's request was clear and straightforward—"We [Livingston] have all these unfilled jobs, you [Flint] have all these workers, can public transportation [MTA] help us immediately?" MTA agreed to act if they received support from the Michigan Department of Transportation (MDOT) and the businesses. Both MTA and the Chamber of Commerce engaged potential stakeholders, meeting frequently and moving quickly.

Companies committed to purchase passes for full buses to ensure an adequate volume of riders. The workforce development agency identified potential employees through job fairs and community outreach. Companies were willing to hire ex-offenders and individuals on probation, increasing the pool of eligible workers. MTA realized that they would need more buses, so the State MDOT redirected some funding to redistribute used buses from another transit system.

Over the next six months, companies hired on a massive scale. Word spread within the Flint community about companies offering jobs with decent pay and benefits and willing to hire candidates with previous criminal convictions. The number of company requests to the MTA to expand their routes exploded, but the MTA had to balance the length of the trip for riders and cost of expansion. In 2017, they reached capacity (with routes, people, drivers) and created wait lists. In 2018, however, MTA continued to develop new partnerships with the business community.

> **"This all happened within a few weeks—speed of light in government time."**
>
> - Michigan Key Informant

Ridership increases ranged from 30 to 50%. In 2019, the MTA provided trips for an average of 32,517 riders each month to employment destinations in four neighboring counties. The service remains open to the public seven days a week and is funded through grants from the Federal Transit Administration (FTA), Michigan Department of Transportation (MDOT), Michigan Talent Economic Development Corporation, and passenger fares. The Department of Health and Human Services has also been a key funder, initially due to the health impacts of the water crisis (in the beginning public transit was used to help deliver safe water to people) but more recently because of the positive impacts they have seen through the partnership, including lowered reliance on public assistance.

In this way, Flint's work-related regional transportation program arose from multiple crises and innovative leadership. Intensive cross-sector collaborative efforts allowed for both speed and ease with implementation including important components such as regular in-person meetings and a heavy dose of creativity.

## Oregon

Oregon's story focused on two major components: a large expansion of funding for the state's public transportation system (including expansion of bus services) and a formalized partnership between the public health and transportation sectors. One key informant described the development, enactment, and implementation of a massive transportation funding increase to expand and improve Oregon's public transportation systems. The second key informant discussed her involvement in a formalized partnership between public health and public transportation.

Public transportation in Oregon has grown organically over the years starting primarily with a mission of serving elderly and disabled populations. In 1985, state legislation was passed to fund transportation services benefiting seniors and people with disabilities. Included in this law was a mandate for coordination between public transportation and human services to ensure equal access to services for all. This strong history and culture of coordination has persisted throughout the last 35 years and recently expanded to include public health. In 1990, transit was impacted greatly with the passage of the federal Americans with Disabilities Act, which required accessibility features on vehicles and provision of transportation services for those who cannot use existing fixed-route systems. In 2009, the state legislature directed a portion of the State's federal funds to public transportation ($25 million biennially).

> **"The road trip [taken by legislators and transportation authorities around the state] really resulted in a unified vision: the communities had been universal in their responses that more public transportation was needed. It was a perfect storm – where it all came together quickly."**
>
> - Oregon Key Informant

### Oregon

CONTEXT:

**Infrastructural**

- Economic climate
- Political environment: governor vision for transportation + public health. Bipartisan support after community engagement
- Regional (urban/rural)
- Population shift (sociodemographic) – more seniors and young people wanting public transportation options

**Institutional**

- Capacity to produce or use evidence
- Historical institutional relationships - formalized between public transportation and human services
- New relationships from multi-sector advisory group
- Government agency involvement – Department of Transportation – broad authority to implement policy

**Interpersonal**

- Legislative champions
- Ability to share evidence in strategic way
- Strong partnerships/coalition

**Individual**

- Ability to identify decision makers and cultivate champions – governor with vision
- Ability to motivate and convene appropriate stakeholders – DOT brought multiple stakeholders together
- Ability to recognize policy opportunities
- Ability to take on multiple roles – transportation + health + governor
- Persistence, dedication, and perseverance

As part of the Governor's vision in 2016, legislators and the Joint Committee of Transportation took a pre-session road-trip across the state to talk to citizens and constituents. They held open houses, arranged meetings, and collected input. The top two issues identified were: 1) congestion and traffic and 2) the need for more public transportation (expanded bus routes and increased frequency of existing bus routes).

This input set the stage for the legislature to come back and figure out how to make the increase in public transportation feasible. In 2016, the governor's office created *One Oregon, A Vision for Oregon's Transportation System*,[92] which outlined the status of transportation, challenges/future needs, priorities for each region and potential strategies to finance the identified opportunities. There was a unified voice from the road-trip experience, and the State provided the data to the legislators to make the case for increased funding.

The key players involved in the development of the policy were the governor, a bipartisan group of legislators, the Oregon Transit Association and other transit agencies, and the Oregon Department of Transportation (ODOT), whose staff provided information and analysis. There were also advisory committees and lobbyists. Notably, public health was not actively involved in the development stage of the funding policy. In 2017, the state legislature passed a 0.1% payroll tax for every single person working in Oregon (regardless of where they live), increasing the state budget from $100 million to $300 million biennially.

The focus of this payroll tax, or Statewide Transportation Improvement Fund (STIF), is on improving and enhancing public transportation, with an emphasis on serving low-income populations and students. STIF recipients are regional transit agencies, and each must have an advisory committee that includes diverse interests, perspectives, geography, and reflects the population demographics of the area. The funding can be used for creating new transit systems and services (increasing frequency and number of bus routes) and improving or enhancing existing service. [Update: In a special session called to address COVID-19 and other issues, in July 2020, the Legislature passed SB1601, allowing STIF formula funds to be used to maintain existing services, immediately, and directing ODOT to develop rules to consolidate the Special Transportation Fund and the Statewide Transportation Improvement Fund into a single program effective July 1, 2023.]

> **"It is very important to keep the vision clear - accomplishing good work towards a common goal versus individual piece of the pie."**
>
> - Oregon Key Informant

Once the legislation was passed, the hard work of developing the rules began. The statute itself was broad so it needed to be defined with input from multiple stakeholders. ODOT formed a Rail & Public Transit Division Statewide Transportation Improvement Fund Rules Advisory Committee,[93] hired a project manager, and used outside consultants to manage the process. The Committee consists of advocates representing transportation, health equity, farmworkers, food banks, seniors, people with disabilities, county and city officials, tribal representatives, and the business community. The Committee met monthly for about a year to reach consensus on rules, a tedious but important and ultimately successful process. When there were conflicting priorities among the advocacy groups, the Rules Advisory Committee, through outreach and community engagement, was able to get participants to focus on the common goals for the greater good.

Since this was the first new public transportation funding in nearly forty years—representing a huge opportunity for improvement and expansion—most were willing to compromise. This group continues to be involved with implementation at the local level.

This funding will transform access to public transit, as well as the ability to leverage federal funds. If the plans are implemented as written, by the end of the 2019-2021 biennium, outcomes would include [note: pre-COVID-19 predictions]:

- 38 million new transit passenger riders (biennial)
- 300 miles of filled gaps/connections between communities
- Over 300 new transit vehicles (1/3 of which will be low or no emission)
- Many transitions to Zero Fare or low-income fare since a lot of transit is subsidized anyway (fares only recover 20-40% of costs to run). Some routes in tribal areas are donation only.

Data from the first quarter of implementation was reported to the Oregon Legislative Assembly in January 2020.[94]

In 2011, following up on the passage of Oregon's major health system transformation legislation, House Bill 2020, the Oregon governor at the time appointed a county commissioner who had been a key health care and public health advocate to the Oregon Transportation Commission. Oregon's governor felt that linking health and transportation was critical to achieving her health transformation agenda. Having someone on the Oregon Transportation Commission with experience in both health and local government helped to develop relationships across the two sectors. A memorandum of understanding (MOU) was developed between the Oregon Health Authority (OHA) and the Oregon Department of Transportation (ODOT) and was first signed in 2013. This MOU created a structure by which the two entities could develop common goals and objectives. The goals of the partnership are more than just public transit, attempting to address outcomes relevant to both sectors. The current MOU has five goals:

## Goals

5

- Address equity/social determinants of health
- Improve traffic safety
- Increase active transportation (physical fitness benefits)
- Improve environmental health (air quality)
- Improve preparedness for emergencies

For more information about this collaborative effort and for a link to the MOU please visit https://www.oregon.gov/ODOT/Programs/Pages/ODOT-OHA.aspx [95]

One of the roles of the key informant's position within the Public Health Division is to serve as a liaison between OHA and state agencies like ODOT. Her role is to co-facilitate quarterly meetings between the two entities and implement action plans. Different experts participate depending on the agenda, and topics discussed can include safety, public transportation, active transportation, policy and planning, research, emergency preparedness, chronic disease, and injury prevention.

**OUTCOMES OF THIS COLLABORATION, TO DATE, INCLUDE:**

- Coordination with non-emergent Medicaid transportation (NEMT) agencies, who provided access to service area data to identify bus routes used by recipients to get to medical appointments. This helps transportation identify additional needs (to extend a route or add a stop) or direct people to regularly scheduled routes (the most cost-effective way to transport people).
- Support for local public health authority involvement in local planning initiatives for active transportation, parks and recreation and land use. In 2018, more than half of local public health authorities were involved in local initiatives, ensuring that health is a consideration in local land use and transportation planning.
- Data collection and reporting—OHA public health accountability metrics report[96] includes American Community Survey on mode of transportation—provides data to the community.
- Bike share programs throughout the community
- Increased access to carpooling

## Tennessee

The city of Nashville, Tennessee integrated health and quality of life elements into the Nashville Area Metropolitan Planning Organization's (MPO)[97] long-term transportation planning processes. While this did not impact the expansion of local bus systems, Tennessee's story provides a compelling example of incorporating health aspects related to a community's built environment into transportation planning. As defined by the CDC, the built environment includes all of the physical parts of where we live and work (e.g., homes, buildings, streets, open spaces, and infrastructure).[98] The built environment also influences a person's level of physical activity. For example, inaccessible or nonexistent sidewalks or bicycle paths contribute to sedentary habits, mainly due to safety concerns. Providing safe routes for walking and bicycling increases the likelihood of engaging in these activities.

Nashville, the capital of Tennessee, has the second highest prevalence of adult inactivity in the nation, with 62% of adults failing to meet aerobic physical activity guidelines.[99] Lack of exercise can also contribute to higher prevalence of chronic disease, such as heart disease, Type II diabetes, stroke, or some types of cancer.

Additionally, many adult Tennessee residents are overweight (37%) or obese (29%), which increases health risks as well.[100] In 1998, to address traffic congestion in Nashville and unhealthy lifestyles, a bicycle and pedestrian advocacy group was created, resulting in the city's first link between health and transportation. In 2003, with a RWJF grant, this same advocacy group partnered with the Nashville Community Health and Wellness Coalition (which later merged with Walk Bike Nashville) and the Metro Nashville departments of Health and Planning to initiate health-oriented transportation planning in the region. While primarily focused on active transportation alternatives and improving the built environment (of sidewalks, bike lanes, etc.) the coalition also sought to increase mass transit as a way of decreasing obesity, alleviating traffic congestion, and improving air quality.

### Tennessee

CONTEXT:

**Infrastructural**

- Economic climate – MPO regional plans determine priorities for millions of federal dollars. Autonomous body with flexible ability to prioritize projects.

**Institutional**

- Historical institutional relationships
- Capacity to produce or use evidence: survey linking health and transportation
- Government agency involvement

**Interpersonal**

- Audience-specific communication
- Ability to share evidence in strategic way

**Individual**

- Ability to identify decision makers and cultivate champions
- Ability to recognize policy opportunities - frame health in a "quality of life" context for integrating into transportation policy
- Ability to take on multiple roles
- Persistence, dedication, and perseverance

These established relationships between health and transportation provided a natural segue for incorporating health elements into long-range transportation plans. Metropolitan Planning Organizations (MPOs) were created in the 1960s after the beginning of the interstate system, which was originally designed to move armed forces from one place to another across the United States. As these routes began to serve as civilian transportation and deliver goods across the country, local governmental oversight was needed to determine priorities, prepare growth forecasts, and conduct regional planning. Thus, federally designated regional transportation planning agencies called MPOs were created for every metropolitan area with 50,000 people or more.[101]

There are currently 285 MPOs nationwide staffed by federally funded employees. These MPOs create mandatory 20-year plans and dictate policy and funding for implementation. Each plan must be updated every four to five years depending on air quality status, and plans are often amended midway through completion, as needed. A typical transportation intervention takes 10 to 15 years to implement.

MPOs are unique in that they engage with local communities and state leaders. The importance of MPOs is that the local and regional transit authorities are members, and in some states, MPO staff can sit on the transit authority board.

In general, MPO members include:

- Local government officials within each municipality within each MPO region. (Municipalities must have a minimum population of 5,000 to be a member.)
- Technical Advisory Committees—city planners of member jurisdictions
- Public transit agencies (regional transit authorities)
- State Department of Transportation staff

Due to the autonomy of MPOs, there has historically not been much cross-sector collaboration. In 2009, however, Nashville Area MPO staff began to view transportation as a SDOH and wanted to link the built environment with equal access to transportation and physical activity. With this vision, they allocated funds to gather and present data strategically and ultimately integrated health indicators into Nashville's regional plans for 2035 and 2040. With this, four key activities were implemented to increase the role of health within public transportation in Nashville.

## Activities

1. Collection of data. A telephone-based public opinion survey found clear results: lack of options for public transit, walking, and bicycling were ranked highest, while lack of sufficient roads was the least important transportation problem. After this survey, MPO staff conducted the Middle Tennessee Transportation and Health Study,[102] one of the first surveys in the nation to link transportation with health status. This data produced localized health data to help with modeling for the Integrated Transport and Health Impact Modeling (ITHIM) tool.[103]

2. Integration of health priorities into MPO scoring criteria for roadway projects. In 2010, Tennessee's MPO was among the first to incorporate quantitative measures of potential health impacts into this process. Before the scoring criteria were used, approximately 2% of funded projects contained health transportation and planning elements. After the new scoring criteria were adopted, 67% (2035 plan) and 77% (2040 plan) of funded projects contained these elements.[104]

3. Allocation of funding for Active Transportation (bicycle and pedestrian-specific) projects identified under the new scoring criteria. By using the weighted scoring system, MPO staff were able to show the importance of the health and environmental benefits and reallocate U.S. Department of Transportation funds.

4. Implementation of Integrated Transport and Health Impact Model (ITHIM), which estimates and monetizes population-level health impacts of shifting transportation trips from motorized personal vehicles to active transportation modes. The ITHIM is a complex model that can predict improvements in health outcomes (decreased chronic conditions and deaths averted) as well as financial impacts (significant cost reductions) of improved health.[105]

In addition to surveys, the MPO conducted meetings with stakeholder groups, live webcasts of public meetings, and met with citizen-based advisory committees. The MPO also partnered with stakeholder groups around housing, health, food access, disabilities, the elderly, and others to gather and disseminate information.

MPO staff have one hour per month to discuss (often complicated) potential projects with the MPO Executive Board, which is comprised of elected officials from a variety of professional backgrounds. MPO presented the data in easy-to-understand terms, emphasizing the economic benefits and community "quality of life" issues. They showed that public transit and walkability were prioritized over road expansions or accommodations for automobile travel. Ultimately, the data from these public opinion surveys led the way to guiding the 2035 and 2040 Regional Transportation Plans.

The Tennessee key informant emphasized that even if states do not have the money to do a large population-based survey or conduct modeling, they can still work with MPOs to ensure the inclusion of active transportation and other health-related models. MPOs are drivers of municipal transportation policy that impacts millions of people and can help drive processes that incorporate health into all policies.

**The Active Communities Tool (ACT)** is a resource to assist communities in developing an action plan to create and improve inclusive built environments to promote physical activity. The ACT provides an action planning guide and a series of assessment modules. The action planning guide emphasizes the importance of building diverse cross-sector teams to understand the community's context. The ACT assessment modules assess the quality and comprehensiveness of community plans, policies and resources for improving community built environments for physical activity. The modules focus on the strategies to achieve activity-friendly routes as well as everyday destinations.

## Results Continued: Public Transportation Systems Stories from the Deep Dive Convening

In order to gather viewpoints beyond the key informant interviews, a Deep Dive convening took place in February 2020 with participants from California, Georgia, Maryland, Massachusetts, and Pennsylvania. The approach, including aims for the Deep Dive convening are described above (see Public Transportation Project Methods). More general results from the Deep Dive convening can be found in the following section (see Role of Public Health in Public Transportation).

### Maryland

The first two convening goals of creating policies to increase health equity and increase bus access were illuminated by Maryland's story of revamping an outdated bus system. Baltimore's neighborhoods are racially and economically segregated, with communities of color facing disproportionate disadvantages and social inequities. Bus routes in Baltimore had not been changed substantially in over forty years, and post-recession ridership was low.

In 2015, a new governor canceled a light-rail project, freeing up funding to update bus routes in response to changing needs. At the same time, gentrification had changed the demographics of downtown, and extensive job growth was evident in hard-to-serve areas beyond the existing transit system. After 18 months of planning, these conditions, as well as a supportive Acting Director of the Maryland Department of Transportation (MDOT), led to a successful reorganization of bus routes to better meet the needs of transit-dependent riders in 2017. As seen among other innovator states, Baltimore's process involved extensive community outreach to advocacy and education groups (though not public health) and responding to input. One community concern was that a proposed "hub and spoke" model would result in wasted time in transfers; MDOT listened and revised their model. Ultimately, they made several route changes and continue to refine routes. According to the MDOT website, "the Maryland Transit Administration has pursued a data-driven approach to identify opportunities in the system, focusing on reliability, bus speeds, and travel delays at bus stops. Potential targeted investments to the roadway that prioritize transit riders include curb-extensions at bus stops, transit signal priority, dedicated bus lanes, queue jumps, and more."[106]

Results of the massive network redesign have been mixed. During the first weeks there were many curious, confused, and disgruntled conversations among riders (and between riders and operators) as hundreds of thousands of people learned to navigate the new routes.[107] Additional refining will happen throughout the year as data is analyzed. One Deep Dive participant also noted accomplishments to date: 32% more people have access, ridership has increased, and weekend service has increased.

### Pennsylvania

York County, Pennsylvania, also linked SDOH with transportation in a rural area with an innovative policy to improve health outcomes. 3P Ride is a nonprofit organization advancing affordable and convenient mobility solutions for Central Pennsylvania's residents to connect to their most basic needs. With an initial goal of getting patients to healthcare visits, 3P Ride uses funding from a health system community foundation to coordinate rides for Medicaid/Medicare patients either through fixed public transit routes, paratransit shared rides, a subcontractor or taxi (last resort). 3P Ride has broad community stakeholders including the housing authority, a county coalition, and the business community. This public-private partnership has shown great potential; the healthcare system has seen fewer no-shows to appointments, a decrease in emergency department visits, and an increase in the number of primary/preventive health visits. These results translate into desperately needed reductions in healthcare spending. One cancer patient was unable to find a ride to receive her chemotherapy treatment and almost had to cancel the appointment, but this program enabled her to get to the hospital, resulting in a cost savings of $45,000. Next steps for this pilot program include expanding to include food access.

## Emergent Patterns from Public Transportation Systems Stories

Recognizing the variability in community contexts across the United States, the project on public transportation systems used a realist evaluation lens to identify ways to engage in multi-sector collaboration within different settings.[108] There is no "one size fits all" CWI, but each innovator state's story provides a deeper look into the contexts and mechanisms influencing outcomes from public transportation system policies and practices. Identifying these patterns helps better contextualize potential interventions, resources, changes to reasoning, choices, and outcomes in selected innovator states. Visual depictions of these patterns for public transportation are summarized in Figure 5 and Table 7 followed by more detailed explanations.

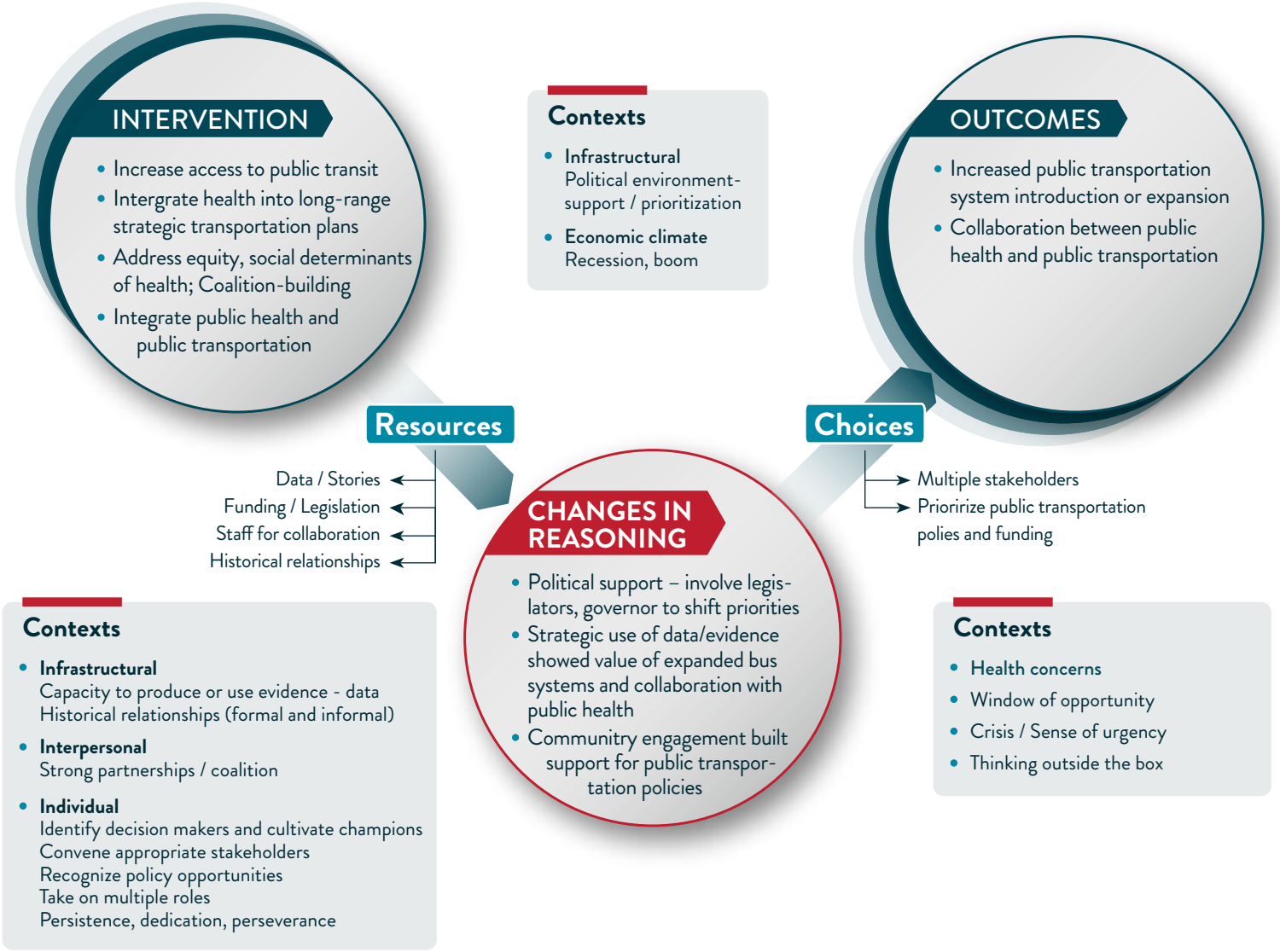



*Figure 5. Summary of Public Transportation and Public Health Contexts and Mechanisms (Anderson Smith Consulting LLC. All Rights Reserved)*

### Contexts

Contexts are "the broader individual and social circumstances into which a program is introduced that likely influence whether and to what extent certain mechanisms will be activated."[109] Interventions include activities generated through the program. Resources are produced or identified by program agents and spur changes in reasoning. These changes, in turn, inform individual and collective choices. The combination of resources, changes to reasoning, and choices embody the program mechanism, which "[explains] what it is about a program that makes it work."34 Once contexts and mechanisms are understood, it is then possible to assess how different components interact to produce outcomes, which are "the intended and unintended consequences of programs resulting from the activation (or not) of different mechanisms in different contexts."[34]

### INFRASTRUCTURAL

Key informants and Deep Dive convening participants all noted the importance of political and economic climates. Transportation funding can be bipartisan when legislators hear the stories of everyday riders and connect access to transit to quality of life. Transportation was prioritized in states with and without supportive governors; sometimes it was the local legislators that made a difference, even when not in alignment with the politics at the state level. The interventions were usually implemented in response to a health or economic crisis or an individual's recognition of a problem (such as an outdated transportation policy).

### INSTITUTIONAL / INTERPERSONAL

Having historical relationships to build upon was often crucial. Some states, like Oregon and Massachusetts, had formalized relationships and dedicated staff to serve as a liaison between public transportation and public health. Others, such as the MTA director in Flint, Michigan, developed new relationships with the business community and created interagency agreements with neighboring county transit authorities in response to a health and economic crisis. Building on past relationships and programs gave organizers a "head start" in bringing different stakeholders together. As the Massachusetts' interviewee noted, "being able to make warm introductions goes a long way." The ability to facilitate coalition-building and cross-sector collaboration is key to successful implementation. The capacity to produce or use evidence, whether through traditional data collection methods (Massachusetts, Michigan, Tennessee), or conducting listening sessions with the community and advocacy groups (Oregon), was key to these states' success. The ability to package the information in a strategic way to make the case for policy change was also universal.

### INDIVIDUAL

Ultimately, the individual champions involved were able to recognize a political or economic window of opportunity, engage the community or key stakeholders to identify priorities, and respond with appropriate interventions. These champions played multiple roles, often not specified in their job description, and were able to identify and convene the appropriate people to accomplish their goals.

## Mechanisms

### WHO IS REACTING?

Within the above contexts, interventions were implemented in reaction to certain conditions. Sometimes it was the governor or legislators who were reacting, as in Oregon where the governor had a vision and facilitated a "listening" road trip across the state with legislators. Other times it was the individual champion, such as the Michigan transit authority director motivated by her community's extremely low morale or the Tennessee MPO staff member who sought the integration of health policy into long-range transportation planning.

### WHAT ARE THEY REACTING TO?

Often, people reacted to either a crisis, such as the Flint Water Crisis, or a long-standing issue, such as a chronically underfunded transit system and public support for change (Oregon, Massachusetts, Maryland). Community engagement and data were often the factors that drove the change.

### HOW ARE THEY REACTING?

All of the stories from the key informant interviews and Deep Dive reflected innovative thinking and creative solutions. For example, Tennessee's MPO staff member made the connection between health outcomes and long-term transportation planning; Massachusetts' Food Bank advocate linked transportation, food, housing, employment, and health; Michigan's transit authority created a long-standing relationship with the business community and other county transit authorities; Oregon's governor presented a vision to bring the two sectors together and create a collaborative to address equity and transportation.

## CONTEXT, MECHANISM, AND THEMATIC OVERVIEW

| | | Massachusetts | Michigan | Oregon | Tennessee |
|---|---|---|---|---|---|
| CONTEXTS | **Infrastructural** | | | | |
| | Economic climate | ☆ | ☆ | ☆ | ☆ |
| | Political environment | ☆ | ☆ | ☆ | |
| | Regional (urban/rural) | ☆ | ☆ | ☆ | |
| | Population shifts (sociodemographic) | | ☆ | ☆ | |
| | **Institutional** | | | | |
| | Active advocacy organization | ☆ | | | |
| | Capacity to produce or use evidence | ☆ | ☆ | ☆ | ☆ |
| | Historical institutional relationships | ☆ | ☆ | ☆ | ☆ |
| | Government agency involvement | | ☆ | ☆ | ☆ |
| | **Interpersonal** | | | | |
| | Audience-specific communication | ☆ | | | ☆ |
| | Legislative champions | | | ☆ | |
| | Ability to share evidence in strategic way | ☆ | ☆ | ☆ | ☆ |
| | Strong partnerships/coalition | ☆ | ☆ | ☆ | ☆ |
| | **Individual** | | | | |
| | Ability to identify decision makers and cultivate champions | ☆ | ☆ | ☆ | ☆ |
| | Ability to motivate and convene appropriate stakeholders | ☆ | ☆ | ☆ | |
| | Ability to recognize policy opportunities | ☆ | ☆ | ☆ | ☆ |
| | Ability to take on multiple roles | ☆ | ☆ | ☆ | ☆ |
| | Persistence, dedication, and perseverance | ☆ | ☆ | ☆ | ☆ |
| MECHANISMS | Response to advocacy | ☆ | | | |
| | Response to competing priorities (trade offs) | ☆ | | | ☆ |
| | Response to competition for revenue | ☆ | | ☆ | ☆ |
| | Response to crisis | ☆ | ☆ | ☆ | |
| | Response to data and evidence | ☆ | ☆ | ☆ | ☆ |
| | Response to education | | | ☆ | ☆ |
| | Response to existing relationships | | ☆ | ☆ | ☆ |
| | Response to absence of relationships | ☆ | ☆ | | |
| | Response to political support | | ☆ | ☆ | |
| | Response to political opposition | ☆ | | | |
| | Response to regional/SDOH needs | ☆ | ☆ | ☆ | |
| | Response to relationship cultivation | ☆ | | ☆ | ☆ |
| THEMES | Community engagement | ☆ | ☆ | ☆ | ☆ |
| | Innovation / thinking outside the box | ☆ | ☆ | ☆ | ☆ |
| | Relationship building / cross-sector partnerships | ☆ | ☆ | ☆ | |
| | Strategic use of evidence | ☆ | ☆ | ☆ | ☆ |
| | Shared values / unified vision | ☆ | ☆ | ☆ | ☆ |
| | Trade offs | ☆ | | ☆ | ☆ |
| | Windows of opportunity | ☆ | ☆ | ☆ | ☆ |

*Table 7. Context, Mechanism, and Thematic Overview in Transportation Innovator States*

## Role of Public Health in Public Transportation Systems

Both key informants and Deep Dive convening participants agreed with the literature that public transportation is a SDOH.[110] By incorporating public health into public transportation, states can improve the quality of life among disadvantaged communities. Moreover, mirroring the EITC findings, a key theme from the Deep Dive convening was the importance of bringing people together through formal gatherings. It was stated that collaboration across sectors has the opportunity to promote efficiency by identifying opportunities to share resources and reduce redundancies. This increased efficiency could potentially decrease costs, improve performance, and result in better outcomes, particularly in times of pressure on government resources.[111] The Deep Dive convening helped connect public health with public transportation, and many participants said they would like to see another such meeting in the future.

When asked to think about how public health could emerge as a partner with public transportation, experts at the Deep Dive convening echoed themes learned from the key informants: there needs to be a cultural shift to institutionalize working together because continued conversations and inclusion can lead to real outcomes. Simply inviting each sector to be at the table was the first step mentioned–public health can educate transit and vice versa. Other ideas were to share existing MOUs, join each other's advisory groups, committees, mailing lists, and submit agenda items to elevate relevant issues. Participants advocated for flexible funding in grants or federal or state-supported efforts, creating staff positions to serve as cross-sector liaisons, applying for joint funding opportunities, and ensuring that Metropolitan Planning Organizations and long-term transportation planners incorporate public health policies into their long-range strategic plans.

Deep Dive convening sessions also generated additional themes for collaboration between public health and public transportation:

### Themes

1 Both sectors were acutely aware that they **speak different "languages"** and that a shared vocabulary is necessary for moving forward. It takes time to learn the acronyms and lingo specific to each sector. In addition, there can be a wide spectrum of knowledge and life experience among the participants. Key informants noted that it is important to stay focused on the shared values of the group and remind people that the end goal is to bring everyone together to a common understanding and next steps. As the Deep Dive convening progressed, participants created a list of unfamiliar terms used by the other sector that needed more explanation. These phrases could contribute to a leadership and learning collaborative training.

2 Deep Dive convening participants from both sectors are **unaware of what quantitative and qualitative data exists within each sector**. Participants encouraged an open dialogue between state departments of transportation and departments of health to identify existing data or co-design new data collection efforts that can be mutually beneficial in securing funding and advocating at the legislative level. Data was a key element for success noted by most of the interviewees, whether it was collected via survey, listening sessions, or forums. Data can be used to share with the community, to get buy-in from legislators, or to identify a need when applying for funding opportunities.

*Continues on next page*

## Themes cont.

3 Some recommended that **epidemiologists meet with engineers (and not only planners) to design and implement safety features**. Transportation and infectious disease connections could promote written and video messages on buses and trains to wash hands and practice good hygiene. Mass ad campaigns were also mentioned, for example Vision Zero,[112] a strategy to eliminate all traffic fatalities and severe injuries while increasing safe, healthy, equitable mobility for all. Some national representatives at the Deep Dive convening recommended stronger linkages with land use planning, which could result in more effective built environments and health outcomes. Linking public transportation planners with environmental and public health experts could facilitate discussion on the trade offs between higher initial costs (e.g., investment in alternative fuel bus fleets, such as hybrid-electric buses, plug-in electric buses, and compressed natural gas vehicles) and the potential to reduce respiratory illness among vulnerable communities through lower greenhouse gas emissions. One example of connecting air quality, health, and transportation is California's cap-and-trade law that requires large polluters to contribute a certain percentage to public transportation. Grants are then distributed to local transit authorities to specifically decrease greenhouse gas emissions in areas of poor air quality.

4 **Healthy People 2030**, which provides science-based, 10-year national objectives for improving the health of all Americans,[113] could be a collaborative way to establish increased transit mode sharing (the proportion of trips by various means, such as by bicycle, private vehicle, public transportation or by foot)[114] as a leading health indicator. Currently, the only goal related to transportation is to "increase trips to work made by mass transit."[115] Conversely, including health as a leading indicator in scoring criteria and prioritizations was encouraged.

Overall, the Deep Dive convening participants were enthusiastic about being co-conveners and continuing the conversation between the two sectors. At the end of the day, participants were asked to imagine what might be possible if public health and public transportation collaborated more closely together. The general response was that the two sectors could apply relative strengths, identify common values and metrics, and ultimately benefit disadvantaged communities while increasing overall quality of life.

A practical method to institutionalize the connections would be to develop some sort of **cross-sector leadership training**. A cultural shift will be necessary to succeed in integrating the two sectors. Participants were asked to identify skills and competencies that might be included in a cross-sector learning collaborative and it was suggested that the National Center for Mobility Management could hold regional meetings for the peer exchange. From the brainstorming session, ideas for potential topics included:

- Knowledge of equity
- Data skills – knowing what the data is, how to use it and mapping data skills
- Participatory facilitation processes
- Convening outreach skills, community engagement skills
- Shared language/vocabulary

While not an exhaustive list, these ideas could serve as a base for a cross-sector course, in addition to a sector-specific module, e.g., "Public Transportation 101" as a way of informing the other sector of terminology and process.

Approximately three months after the Deep Dive convening, participants were sent a follow-up Online survey about their plans and actions since the meeting (see Appendix K for more details on the survey and results). Among all seventeen respondents, thirteen (76%) had made plans or taken action to engage with the other sector in some way. Barriers to this collaboration noted by both sectors were lack of resources or dedicated staffing, COVID-19 response efforts, and that collaboration was "not an agency priority."

## Challenges for Public Transportation Systems and Public Health

Key informants and Deep Dive convening participants discussed challenges along the way to implementing change. Some of the trade offs or unintended consequences that were universal across the states include the following:

### RURAL / URBAN DISCONNECT

Urban and rural regions have different needs. Many states noted the challenge in addressing the needs of rural communities, since they are more spread out and have low population density. Economically, it is hard to fund buses to pick up only a few riders. Some states are encouraging more **micro-transit** in rural areas. In Georgia, "a suburban community had no public transit and, due to the economic downturn, needed to transport people to better paying jobs in the Atlanta area. They implemented a six-month pilot for free on-demand transportation to everyday destinations and to connect riders to the regional transit hub so they could get into the city. The pilot, using an app and 12-passenger buses, was incredibly successful, transporting 250-350 riders per day."

In Western Massachusetts, there are many food deserts in suburban and rural areas, resulting in a greater need to connect reliable and frequent transit with improved access to groceries and food banks, and ultimately better nutrition. Also, there are few community-based organizations in rural regions, making it challenging to find advocates without going door to door.

In Oregon, rural jurisdictions have less sophisticated systems and require more technical assistance to plan and write their grant proposals, manage the funding, and implement their plans. In Tennessee, funding for rural areas is funneled down from the State DOT, which may not always be in touch with, or able to address, the issues and needs of rural communities.

### CONFLICTING PRIORITIES

When working across sectors, or within a coalition, there can be a broad range of expertise and opinions on how the multiple organizations fit together. It is important to set specific goals and tasks to create a common understanding when there are different drivers. In the end, inclusion and diversity make a stronger coalition and lead to better outcomes. In addition, there needs to be a balance between targeted transportation efforts for certain groups (veterans, seniors, medical appointments, students) and increased access for all other riders to get them efficiently and safely to their everyday destinations.

### STAFF TURNOVER AND PREVENTING BURNOUT

When a key player, such as a supportive governor, staff member or legislative champion, leaves a position, it is important to re-establish a connection with the replacement in order to not lose momentum. This happened in Michigan, where the Chamber of Commerce Director left, and in several other innovator states, where new legislators needed to be educated about the connection between health and transportation. In addition, change can be a slow process and burnout can occur if little or no progress is made. Dedication and persistence are key, and advocates should recognize even the smallest progress to avoid fatigue and frustration.

### CHRONIC UNDERFUNDING

Funding was often a limiting factor in what could be done. Sometimes it took an emergency, like the Flint water crisis, to force a shift in funding to address historical inequities experienced by underserved communities. In other cases, funding is designated for implementation but not for doing the hard work of demonstrating the value of change or expansion.

> **"It's hard to get unrestricted funding (for advocacy). Usually funders are interested in a product not the process."**
>
> - Massachusetts Key Informant

### KEEPING IT PARTICIPATORY

When working with multiple stakeholders from different backgrounds, it can be challenging to help people feel a part of the process, and deeply engaged.

### LACK OF EVIDENCE-BASED DECISION-MAKING

Sometimes transportation decisions are made without sound data or evidence. There are no outcome evaluations to assess transportation decisions and, historically, some decisions have been made based on political or individual pressures. This, again, highlights the need for data to show the connection between transportation and health outcomes.

### LONG-TERM PLANNING CAN RESULT IN BEING STUCK WITH AN OLD PLAN

A challenge with having to plan so far in the future (20 years), as transportation does, is that the projects being implemented are not necessarily relevant to what is needed currently. For example, the original plans may not have sidewalks or bicycle lanes incorporated. However, once a project is underway for ten years, it is too late to go back and add new ideas; planners and engineers are not usually willing to go "back to the drawing board." On the flip side, once projects in the plan get funded, their future is relatively secure.

## Lessons Learned from Public Transportation Systems and Public Health

The HI-5 Initiative website outlines the importance of incorporating health in all policies (HiAP), a collaborative approach that integrates and articulates health considerations into policymaking across sectors to improve the health of all communities and people.[116] HiAP recognizes that health is created by a multitude of factors beyond healthcare and, in many cases, beyond the scope of traditional public health activities.

Transportation is a SDOH because it impacts many community-level aspects of life: air quality, physical activity, safety from motor vehicle accidents. Transportation also provides crucial access to employment, school, healthcare, and frequent destinations.[117] If designed well, a public transit system can provide a better quality of life to transit-dependent riders by taking them where they need to go in a safe, affordable, and timely manner. Since low-income communities and communities of color are more likely to use public transit, expansion of affordable, environmentally friendly bus systems can address some of these health equity issues. As evidenced from the key informant interviews and the Deep Dive convening, public health professionals now have the opportunity to:

- Continue the cross-pollination of ideas in a multi-sector leadership collaborative.
- Conduct state-level or regional training with both sectors.
- Assign a point of contact or liaison within public health to reach out to transportation groups, attend meetings, identify potential areas for collaboration.
- Learn from the transportation model, with its long-range planning and larger view.
- Identify shared values and set clear goals.
- Promote data collection and share existing data to inform policy. Identify overlapping goals and metrics available.
- Bring land use planners into the conversation.
- Collaborate in community engagement efforts.
- Identify windows of opportunity, even if there is no "crisis".

Other ways for public health practitioners to engage with the public transportation sector are highlighted in the Public Health Action Guide: Public Transportation (Appendix L).

## Public Transportation Systems Conclusion

Increasing access to public transportation can impact people's physical, mental, and economic health while also improving the communities where they live, work, learn, and play.[118] Communities without public transit or those with access issues may experience more motor vehicle crashes, lower rates of physical activity, and reduced air quality from increased traffic congestion—directly impacting public health.

Although all modes of public transportation are important, improving access to bus systems in particular can provide greater equity benefits, since buses are used more by transit dependent people. Timely and affordable access to bus systems ultimately helps people with food provisioning, accessing employment, healthcare, etc. Inadequate access to bus routes can detrimentally harm disadvantaged communities, and thus planners, policymakers and public health professionals should view public transportation as a SDOH and collaborate to address the needs of the most vulnerable.[119]

Ongoing advocacy efforts are required for the development and enactment of policies to sustain and expand bus access systems. The benefits of cross-sector collaboration were universally highlighted by key informants and Deep Dive convening participants. Public health professionals can collaborate with existing public transportation networks, such as local transit authority boards, advocacy groups, Metropolitan Planning Organizations, or statewide coalitions to identify shared goals. The process of relationship building (attending a meeting or conference, reading a report, e-mailing with a transportation expert) can identify opportunities for collaboration and connection, such as data sharing or other resources. The Deep Dive convening was a first step in bringing the two sectors together, and similar gatherings in the future could be smaller and more regionally-focused. These training sessions could include both individual sector-specific information (for example vocabulary and acronyms) well as topics common to both, such as health equity, collaboration skills and participatory processes. Developing and sustaining these connections can only strengthen both sectors and ultimately incorporate health into all policies and improve the public's health.

The universal themes identified by the participants of this project were identifying windows of opportunity, building upon historical relationships, reaching out to non-traditional partners (or "thinking outside the box"), and collecting appropriate and effective data to highlight the benefits of an intervention. Community engagement was stressed as key to addressing SDOH and ensuring better results. Regardless of political or economic environment, key informants stressed that there is always a way to strategically advocate for better policies.

The Public Health Action Guide: Transportation (see Appendix L for a copy of the guide) highlights actions that public health practitioners can take to collaborate and strengthen partnerships with public transportation. By using tools such as the Public Health Action Guide: Public Transportation, considering the contexts and mechanisms that contribute to successful outcomes, and implementing the recommendations outlined in this report, public health can make strides toward improving health and wellbeing through public transportation access.

# POSTSCRIPT:

## Public transportation systems in the time of COVID-19

## Public Transportation Systems Conclusion

At the time of writing, the United States is facing unprecedented challenges from the COVID-19 pandemic, which has further thrown into stark relief how SDOH, particularly poverty, underpin health. It is more important than ever for public health to contribute to initiatives that directly address poverty and other SDOH. Developing and strengthening partnerships around EITC and public transportation systems alongside poverty advocacy groups, public health practitioners, and others will require time and resources.

For the public transportation sector, the COVID-19 pandemic has resulted in mass reductions in ridership across the nation. In general, higher income commuters or "choice riders" who usually commute to an office have shifted to working from home, while essential workers who are required to be physically present continue to use public transit (unless they own a car). Now more than ever, low-income communities and communities of color that have long relied heavily on public transit are being hit hardest. More than 2.8 million essential workers depend on public transit, representing approximately 36% of transit riders.[120]

### Washington

Since the start of the COVID-19 pandemic, the state of Washington focused less on bus expansion activities and more on the state's reaction to the pandemic as it applies to ridership. Since the onset of COVID-19, King County's Metro Transit (KCMT) ridership is down by about 75%, but the crisis has resulted in a strong collaboration between transportation and public health, as well as community-based organizations.

With public health financial backing and swift coordination between KCMT, the Department of Public Health, and the Department of Community and Human Services, the KCMT took the following actions: *Continued on the next page.*

Many others are dependent on public transit to get to work, pick up groceries, or care for loved ones during this pandemic. The Amalgamated Transit Union, the largest union for transportation workers in the U.S., surveyed more than 200 local unions and business agents and found that 50% of transit unions report that bus operators are not being provided masks and many transit agencies still lack mandatory mask policies for riders.[121] This unprecedented time can serve as an opportunity to reassess how things are done. As seen in Flint, Michigan, a crisis can result in innovative policy change in a relatively short time frame, and it is even more important to improve conditions affecting those with the greatest need. There are many opportunities for collaboration highlighted in the recent DreamCorps brief: Securing Safe Transit: Before and After COVID-19.[122]

Creative solutions have been implemented to accommodate individuals with transportation needs. This section highlights some measures that have been taken that relate directly to public health or social determinants of health.

- Suspended fares with customers boarding at the rear door (unless they required ADA assistance) to support physical distancing
- Disinfect all vehicles daily
- Implemented passenger capacity limits to support physical distancing
- Partnered with public health to create health messaging on buses and other vehicles, at bus stops, Online and social media and in paid advertising

  Created a community partner toolkit to provide multilingual resources and news on Metro's change in services
- Asked customers to take essential trips only
- Required masks
- Collaborated with community-based organizations to distribute thousands of masks
- Distributed cloth masks, hand sanitizer, disinfect wipes/sprays, face shields, and safety glasses to frontline staff
- Employed new physical distancing measures at all bases and facilities
- Created new vanpool options for essential workers
- Opened an "Access Paratransit" program for all customers with disabilities, including those who were not already certified to use the program

People with disabilities have been especially impacted by the pandemic and the collaboration described above established a fully separated subset of its Access Paratransit service to provide transportation for COVID-19 positive or potentially positive individuals. Similarly, it also responded to requests to transport residents of local homeless shelters to new sites in order to support COVID-19 social distancing requirements and prevent overcrowding.

# KEEPING PUBLIC TRANSPORTATION RIDERS SAFE AND HEALTHY ACROSS THE COUNTRY

## Public Transportation Systems Conclusion

### Transit Activities to Protect Employees and the Public from COVID-19 Transmission

**Engineering Controls**

*reduce exposure to hazards without relying on worker behavior and can be the most cost-effective solution to implement*

- Install physical barriers, such as clear plastic sneeze guards, plexiglass safety shields for drivers
- Reduce seating capacity to help with social distancing
- Keep-Your-Distance Decals: large yellow circle decals on the ground at bus station to encourage physical distancing

**Administrative Controls**

*require action by the worker or employer. Typically, administrative controls are changes in work policy or procedures to reduce or minimize exposure to a hazard*

- Encourage sick workers to stay at home
- Educate and train on COVID-19 risk factors and use of protective barriers (e.g. cough etiquette and Personal Protective Equipment)

**Safe Work Practices**

*procedures for safe and proper work used to reduce the duration, frequency, or intensity of exposure to a hazard*

- Provide hand sanitizer to riders and workers
- Temperature checks of transit workers
- No-touch payment options / eliminate cash transactions
- Rear-door boarding
- Post hand washing and public health messages
- Prioritize COVID-19 testing for transit workers

**Personal Protective Equipment (PPE)**

- Require face masks for drivers and riders

**Addressing Social Determinants of Health**

- Add more buses to routes at peak times so no passenger is left behind
- Food delivery via door-to-door service for paratransit customers
- Food delivery to low-income students while sheltering in place
- Adjust routes, fares, and on-demand options to serve essential workers
- Modified routes or re-tasked vehicles and drivers to serve hospitals, grocery stores or food banks
- Installed WiFi on buses to be parked at schools so the public can drive up and connect to the internet
- Door-to-door service for healthcare workers
- Transporting high-risk homeless persons to designated community facilities

**CDC Guidelines to Public Transit Riders**

- Practice hand hygiene and respiratory etiquette (wash hands, use hand sanitizer, avoid touching face, cover cough/sneezes into elbow)
- Practice social distancing (6 feet) while waiting and during travel
- Wear cloth face covering
- Stay home if sick
- Avoid touching surfaces

When surveyed three months after the Deep Dive, COVID-19 was noted as the main barrier to following through with collaborative plans at this time. While many acknowledged the crisis may have created opportunities to collaborate, only a third of respondents stated they would like to collaborate during the crisis as opposed to 58% who preferred to take action after the pandemic has ended. One transportation respondent stated that it will most likely take a long time to get ridership back up, since public health has encouraged the use of private vehicles as the safer option. The transportation sector needs to assure the public that it is safe to ride transit, and that adequate protections are put into place within each region. When asked about ways they had collaborated with public health to establish policies and practices to keep the transit employees and riders safe, the top three responses were: *Continued on the next page.*

1. Established cleaning and disinfecting protocols (63%)
2. Developed social distancing guidelines (50%)
3. Disseminated health and safety information for drivers and other transit employees (50%)

One respondent stated that they had created special transportation programs for homeless and sheltered populations needing testing, shelter, and food. Another respondent shared that it is time for a "new normal" with collaborations and shared policy on prevention and protection and noted that funding should be allocated to implement this work.

Overall, this is a time of uncertainty for the future of public transportation. The relationship with public health and this CWI will be important in terms of preventing further outbreaks in the future as well as addressing inequities in transportation policies affecting low-income populations and communities of color.

> **"Thinking about the already insufficient public transportation system in [my community] for many populations, how will budget shortfalls impact this even further, in addition to likely requirements to decrease capacity on trains and buses. This requires more of a health in all policies approach...COVID offers places to innovate, but it requires a host of decision-makers at multiple levels and across sectors to identify some potential new innovations to meet the challenges COVID brings with it."**
>
> - Deep Dive participant

# CROSS-CASE ANALYSIS OF EITC AND PUBLIC TRANSPORTATION SYSTEMS

## Cross-Case Analysis of EITC and Public Transportation Systems

A cross-case analysis was conducted that draws findings from the two HI-5 CWIs (EITC and public transportation systems) and the eight innovator states (California, Louisiana, Massachusetts, Michigan, New Mexico, Ohio, Oregon, and Tennessee). This analysis yields insight into the contexts, mechanisms, and overall themes associated with successful implementation of the two HI-5 CWIs. Appendix M provides an overview of the contexts, mechanisms, and themes identified for each case in the project. Key findings are summarized below.

## Contexts

Several contextual elements appear to be vital factors contributing to successful implementation of the two HI-5 CWIs. Interpersonal and individual contexts appeared most frequently, with key informants in every state mentioning the importance of four specific elements: the interpersonal context of "**strong partnerships and coalitions**", and the individual contexts of "**ability to identify decision makers and cultivate champions**", "**ability to recognize policy opportunities**", and "**persistence, dedication, and perseverance.**" Two infrastructural contexts also appeared to be important factors of success: the importance of "**economic climate**" and "**political environment**." These contexts appear to be those most likely to influence the extent to which mechanisms will be activated and outcomes will be achieved for EITC and public transportation systems.

### Taking Action: Shaping Contexts for Success

Some of these contexts, especially the interpersonal and individual contexts, can be intentionally developed within communities to increase the likelihood of achieving desired outcomes. For example, knowing that strong partnerships and coalitions are key aspects of the successful implementation of CWIs empowers communities to assess their readiness to implement a HI-5 intervention. If strong partnerships and coalitions do not yet exist, it may be wise to build and/or strengthen this interpersonal context before attempting to implement a CWI. Knowing which individual contexts are most strongly associated with successful outcomes enables CWI leaders and funders to focus educational opportunities on areas of greatest impact, such as teaching people how to identify leaders and cultivate champions, recognize policy opportunities, and persist and persevere until outcomes have been achieved.

## Mechanisms

Several mechanisms appeared to help explain how outcomes were achieved in the eight innovator states, but none of the identified mechanisms appeared to be vital factors across all cases. Three mechanisms stood out as important factors of success across states and the two CWIs: "**response to existing relationships**", "**response to political support**", and "**response to data and evidence**." Each of these mechanisms appeared in 75% of cases (n=6), however, there was no mechanism that appeared to be an explanatory factor across all innovator states. Even so, each of the mechanisms listed below was identified by key informants as an important factor influencing outcomes, with the mechanism appearing in 63% (n=5) of the innovator states included in this project:

| Response to competing priorities (trade offs) | Response to education | Response to regional/SDOH needs |
|---|---|---|

### Taking Action: Understanding Mechanisms that Work

When exploring the feasibility of implementing any CWI in a specific community, a first step could be identifying existing sources of data and evidence related to the CWI. If none exists, generating relevant data and evidence could be an important starting point for the successful launch of a CWI. Gaining a deep understanding of the landscape of relationships and levels of political support related to a CWI could also be valuable lines of inquiry when exploring feasibility of a CWI in a certain community.

## Themes

Several themes were identified across innovator states and two HI-5 CWIs, but one theme appeared across all cases: the importance of "**windows of opportunity.**" Additional themes that frequently appeared were **strategic use of evidence** and **shared values / unified vision**.

- Windows of opportunity
- Strategic use of evidence
- Shared values / unified vision

### Taking Action: Building on Themes that Lead to Outcomes

The cross-case analysis showed which themes are commonly associated with positive outcomes. This information can be used by CWI funders and leaders to promote practices that are known to be positively associated with successful CWI implementation. For example, there may be educational opportunities for community leaders who desire a better understanding of how to identify and act on windows of opportunity. Similar opportunities may exist for helping CWI leaders understand how to build relationships across sectors, how to use evidence to inform their strategy, or how to build shared values and a unified vision across diverse stakeholders.

# REPORT CONCLUSION

## Conclusion

Public health professionals remain committed to addressing health disparities and inequities rooted in social determinants of health (SDOH), the conditions in which people live, work, and play.[125] The HI-5 Initiative highlights 14 community-wide interventions (CWIs) that have the potential for population health impact often through policy change.[126] This report focused on two CWIs: the Earned Income Tax Credit (EITC) and public transportation systems. Both interventions have clear potential benefits to population health through upstream impacts. Through collaboration with those outside of traditional public health domains, public health can build increased capacity for policy development, enactment, and implementation in order to better address SDOH and have the greatest potential impact on health.[127]

At the time of publication, the future of state EITCs and public transportation remains uncertain given the COVID-19 pandemic. The relationship between both CWIs and public health will continue to be critical in terms of preventing future outbreaks as well as addressing inequities in transportation policies affecting low-income populations and communities of color.

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# APPENDIX

# Appendix A. HI-5 Partner Consortium Thinking Group

## Andrea Azuma

Andrea Misako Azuma is Director of Community Health Improvement at Kaiser Permanente. Andrea works across Kaiser Permanente's eight geographic regions to collaboratively develop strategies and partnerships that create community conditions that promote health equity. Prior to joining the national office, Andrea worked for nearly eight years in Kaiser Permanente's Southern California Region on Healthy Eating Active Living and Thriving Schools partnerships and grant making. Before joining Kaiser Permanente, Andrea worked on other healthy community efforts and was involved in planning, executing and evaluating a range of initiatives related to school wellness, farm to school, parks and open space and healthy food access. Andrea received a bachelor's degree from Occidental College and a master's degree in nutritional sciences from Cornell University.

## Kate Blackman

Kate Blackman is the group director for the health program at the National Conference of State Legislatures (NCSL). Kate previously served as a program director at NCSL, managing projects focused on opioid misuse, injury and violence prevention, health disparities and other public health topics. She also specialized in access to care and rural health issues, such as telehealth. Before joining NCSL in 2014, Kate directed a CDC-funded public health research project in rural, eastern North Carolina, and worked at several nonprofits. She holds a B.A. in journalism from the University of North Carolina at Chapel Hill, where she later earned her master of social work and master of public health.

## Caroline T. Brunton

Caroline T. Brunton is a program officer for the W.K. Kellogg Foundation in Battle Creek, Michigan. As part of the Food, Health & Well-Being team, she provides leadership and oversight for on-the-ground execution of programming efforts by evaluating grant proposals, conducting background research, preparing funding documents, grant portfolio monitoring, promoting community connections and providing grantee technical assistance.

Prior to joining the foundation, Caroline was with the Centers for Disease Control and Prevention (CDC) in Atlanta, Georgia for 13 years. Most recently, she was associate director for policy for the Division of Environmental Hazards and Health Effects where she led strategic partnerships and policy initiatives for many of CDC's environmental health programs. Prior to that, she was a public health analyst, responsible for program evaluation, strategic planning and Congressional relations for many of CDC's chronic disease, community and children's health programs. She also participated in emergency response for the 2009 H1N1 influenza outbreak and Hurricane Katrina. She was also a genetic epidemiology intern at the Michigan Department of Community Health in Lansing, Michigan.

Caroline holds a bachelor's degree in microbiology from the University of Rhode Island, as well as a master's degree in epidemiology from the University of Michigan and a Juris Doctorate from Georgia State University.

## Brian Castrucci

Brian Castrucci is a disruptor, instigator and fierce advocate for public health. Inside Philanthropy once described him as a "fount of knowledge and passion when it comes to health" who speaks with "sound-bite-perfect urgency" on the social determinants of health. Over the past six years, Brian has helped build the de Beaumont Foundation into a national powerhouse in public health philanthropy and advocacy, and he now serves as the Foundation's Chief Executive Officer. An award-winning epidemiologist with 10 years of experience in state and local health departments, Brian brings a unique background that allows him to shape and implement visionary and practical initiatives and partnerships that bring together research and practice to improve public health.

Under his leadership, the de Beaumont Foundation is driving change to improve population health, foster collaboration between public health and other sectors and strengthen the nation's public health infrastructure. CityHealth, the BUILD Health Challenge, and the Public Health Workforce Interests and Needs Survey are among the national projects he has helped to create while at the Foundation.

## Laura Harker

Laura Harker is the health policy analyst at Georgia Budget and Policy Institute where she is responsible for researching and reporting on Georgia's health policies and related spending. Prior to joining GBPI in 2016, Laura conducted public health research, policy analysis and advocacy on food insecurity and poverty issues as a fellow with the Congressional Hunger Center in Washington, D.C. She produced policy briefs and reports to provide evidence-based recommendations for state and national lawmakers. She worked with the Office of the Associate Director for Policy at the Centers for Disease Control and Prevention as a graduate student to conduct policy assessments and impact analysis in support of the National Prevention Strategy. Laura graduated from the University of North Carolina at Chapel Hill and holds a master's degree in public health policy from Emory University.

## Shelley Hearne, DrPH

Shelley Hearne serves as president of CityHealth, an initiative of the de Beaumont Foundation and Kaiser Permanente designed to catalyze policy solutions for cities' success. In addition, she is executive director of the Forsythia Foundation and a visiting professor at Johns Hopkins Bloomberg School of Public Health. Most recently, Shelley helped reestablish the Big Cities Health Coalition, a forum for the health officials of the nation's largest metropolitan areas. Previously, Dr. Hearne was managing director of The Pew Charitable Trusts' Health Group, overseeing its food safety, medical safety, financial security and biomedical programs. She was founding executive director of Trust for America's Health, a national nonprofit dedicated to optimal health for every person and community. Shelley has also held leadership positions on national commissions and in state government.

Shelley serves on the Radiation Effects Research Foundation board, which monitors atomic bomb and Fukushima nuclear accident health impacts. She is also a trustee of Bowdoin College. Shelley has received wide-ranging recognition for her work, including Bowdoin College's Common Good Award, the Rutgers Senator Frank Lautenberg Award in Public Health and APHA's Executive Director Citation as a champion of public health and the public interest. Shelley has a B.A. with honors from Bowdoin College and a doctorate in environmental health science from Columbia University's School of Public Health.

## Moniquin Huggins

Moniquin Huggins serves as the Division Director, Oversight and Accountability, Office of Child Care, Administration for Children and Family, Department of Health and Human Services. She has over 25 years of experience in the Office of Child Care, working to support States in their administration of the Child Care and Development Fund (CCDF). In her current role she oversees the activities to assess and monitor State, Territorial and Tribal grantees' compliance with and implementation of CCDF requirements. Ms. Huggins also serves as the Office of Child Care lead on numerous areas related to the health of young children and was instrumental in spearheading partnerships between child care and health professionals at the national, regional and state level. Prior to joining the Office of Child Care, she held positions with the Department of Defense as the Director of Family Child Care and as Chief of Programs for Military Families.

## Allison Friedman-Krauss, PhD

Allison Friedman-Krauss is an Assistant Research Professor at the National Institute for Early Education Research (NIEER) at Rutgers University. At NIEER she leads work on the State of Preschool Yearbook, previously worked on the State(s) of Head Start Report, and is an author of the Early Childhood Education: Pathways to Better Health policy brief. Dr. Friedman-Krauss also oversees collection of physical and mental health data from preschoolers and their teachers within the context of a larger study of New Jersey's preschool programs. She contributes to other work at NIEER including evaluations of state-funded preschool programs and state preschool policy research.

Broadly, Dr. Friedman-Krauss's research interests include cognitive and social emotional development and health of children growing up in poverty, evaluating early childhood education programs and understanding how preschool classrooms and teacher characteristics influence children's development. She received her Ph.D. in Developmental Psychology from the Steinhardt School of Culture, Education and Human Development at New York University and was an IES-Predoctoral Interdisciplinary Training Fellow.

## Adam Lustig, MS

Adam Lustig is the Manager, Promoting Health and Cost Control in States (PHACCS) at Trust for America's Health (TFAH). The PHACCS Initiative seeks to promote the adoption and implementation of effective, evidence-based state public health policies in a relatively short time period of five years. Prior to joining TFAH, he was the Senior Manager of Health Systems Transformation at the National Network of Public Health Institutes, where he developed strategies related to improving healthcare systems, alternative payment models and supporting people-centered health systems. Mr. Lustig has also held positions at the Advisory Board Company, the National Pharmaceutical Council and the University of Pennsylvania. He received his BA in Public Policy from the State University of New York at Albany and a MS in Health Policy from the Thomas Jefferson University College of Population Health.

## Hannah Martin

Hannah Martin is a registered dietitian and a Senior Policy Analyst with the Bipartisan Policy Center's Prevention Initiative where her work focuses on improving nutrition and public health policies to prevent and reduce the burden of chronic diseases. Previously, she worked on Child and Adult Care Food Program and WIC policy as a Nutrition Policy Fellow at the Food Research and Action Center. She currently serves on the Board of Directors for the DC Metro Academy of Nutrition and Dietetics and the University of North Carolina Gillings Alumni Association. Hannah holds an MPH and BSPH with honors, both in nutrition, from the UNC Gillings School of Global Public Health and is currently pursuing a DrPH in Health Policy from the George Washington University Milken Institute School of Public Health.

## Von Nguyen, MD, MPH

Von is the Deputy Associate Director for Policy and Strategy at the Centers for Disease Control and Prevention (CDC). In this capacity, he supports the policy agenda across CDC and manages the CDC's efforts to promote collaboration between the public health and health care delivery systems. Prior to joining CDC, Dr. Nguyen worked as a senior advisor at the Center for Medicare and Medicaid Innovation focused on population health and value-based payment initiatives. He is a primary care provider who continues to see patients at a federally qualified health center and serves on the Board of Heluna Health, a population health focused non-profit organization. Dr. Nguyen also worked as a management consultant, medical underwriter for health insurance companies and medical director for Doctors Without Borders. He received his Medical Doctorate and Master of Public Health from the University of Texas. He completed his internal medicine residency training at New York-Presbyterian Hospital and served as an Epidemic Intelligence Service Officer with the CDC.

## Marcus Plescia, MD, MPH

Dr. Marcus Plescia is the Chief Medical Officer for the Association of State and Territorial Health Officials (ASTHO). He provides medical leadership and expertise across the agency and oversees ASTHO's portfolio of chronic disease prevention and control programs. ASTHO is the national nonprofit organization representing the public health agencies of the United States, U.S. territories, and District of Columbia, as well as the more than 100,000 public health professionals these agencies employ. ASTHOs opioid-related work is supported by CDC and focused on supporting state surveillance and prescription drug monitoring programs. The past two ASTHO Board Presidents have used their leadership position to promote greater public health engagement in addressing this epidemic.

Dr. Plescia has served in public health leadership roles at the local, state and federal level for the past fifteen years in North Carolina and at the Centers for Disease Control and Prevention. In these roles he has led successful efforts to enact systemic public health interventions including expanded cancer screening coverage, prescription drug and disease reporting requirements, revised clinical guidelines and state and local tobacco policy. He has been prominent in nationwide efforts to transform public health practice to a more population-based, strategic framework, and led the implementation of the CDC's national colorectal cancer screening program based on this approach.

Dr. Plescia received his Bachelor of Science, Master of Public Health, and Medical Degree from the University of North Carolina at Chapel Hill. He trained in Family Medicine at Montefiore Medical Center in the Bronx, NY. He is Board Certified in Family Medicine and has practiced in a variety of settings serving homeless, urban poor and rural underserved populations. He has published extensively in the public health and family medicine literature.

## Marjorie Sims

Marjorie serves as Managing Director at the Aspen Institute. She has more than 20 years of experience in advancing the status of women and families at local, state, national and international levels. She formerly served as a program officer at the W.K. Kellogg Foundation with a specific focus on family economic security programs and managed a $65M grant portfolio. Prior to joining the Kellogg Foundation, Sims held the positions of chief operating officer, interim president and vice president of programs and operations at the Washington Area Women's Foundation. During her tenure in Washington, Sims helped launch Stepping Stones, a $5 million, multi-year, regional initiative to increase the income and assets of women-headed families. Stepping Stones received national recognition as a model public-private partnership. In addition, Sims served as the executive director of the California Women's Law Center and as a policy analyst with the International Center for Research on Women. She is a co-founder of Women's Policy, Inc., an organization that emerged from the Congressional Caucus for Women's Issues to provide unbiased analyses and educational briefings about federal legislation affecting women and families. Sims has additional expertise in expanding women's philanthropy and managing leadership transitions.

## Paul P. Skoutelas

Paul P. Skoutelas is president and chief executive officer of the American Public Transportation Association (APTA). His entire career has been in public transportation, with more than 40 years spent in both the public and private sectors. He served as CEO of public transit systems in Pittsburgh and Orlando and as senior vice president for WSP USA, one of the world's largest architectural and engineering firms.

Skoutelas also has served in leadership positions on numerous boards and committees for transportation organizations, including on APTA's Board of Directors and Executive Committee, the Transportation Research Board, National Transit Institute, Pennsylvania Transportation Institute and the Transit Cooperative Research Program.

Most recently, he was national director of WSP USA's Transit & Rail Technical Excellence Center where he provided strategic direction with a focus on growing the firm's transit and rail business, enhancing marketing capabilities and strengthening client relationships.

Prior to WSP, Skoutelas was the chief executive officer at two prominent public transportation agencies - the Port Authority of Allegheny County, Pittsburgh, Pennsylvania, and the Central Florida Regional Transportation Authority (LYNX), Orlando, Florida. His achievements at these agencies include the successful implementation of major capital programs including the South Hills Stage II Light Rail Program, the North Shore Rail Connector, a comprehensive rail station improvement program, major rail rolling stock acquisitions and three Bus Rapid Transit projects; the Airport/West Busway, the Martin Luther King, Jr. East Busway Extension and the Orlando/Lymmo BRT.

Skoutelas received bachelor's and master's degrees in civil engineering from Penn State University and a master's degree in business administration from the University of Pittsburgh. He is a licensed professional engineer.

## Brian D. Smedley, PhD

Brian D. Smedley is Executive Director of the National Collaborative for Health Equity, a project that connects research, policy analysis and communications with on-the-ground activism to advance health equity. From 2008 to 2014, Dr. Smedley was Vice President and Director of the Health Policy Institute of the Joint Center for Political and Economic Studies, a research and policy organization focused on addressing the needs of communities of color. Formerly, Dr. Smedley was Research Director and co-founder of a communications, research and policy organization, The Opportunity Agenda, and was a Senior Program Officer at the Institute of Medicine (IOM), where he served as Study Director for several IOM reports on health disparities.

## Jennifer Sullivan

Jennifer Sullivan is a Senior Policy Analyst on the State Fiscal Policy team at the Center on Budget and Policy Priorities, where she leads a project to advance population health and equity through state budget and tax policy. Prior to joining the Center, Jennifer was Director of Policy and Programs at the Alliance for Health Policy. From 2011-2017 she served in leadership roles at Enroll America, where she worked with national and state stakeholders to identify, develop and disseminate information about outreach and enrollment best practices for Medicaid, the Children's Health Insurance Program and the Health Insurance Marketplaces. She has also held positions at the Centers for Medicare and Medicaid Services and at Families USA, where she worked

on federal policies to strengthen health coverage programs for low-income people. Jennifer holds a B.A. in Sociology from Kalamazoo College and Master of Health Science in Health Policy from the Johns Hopkins Bloomberg School of Public Health.

## Sandra Wilkniss

Sandra Wilkniss serves as a program director for the National Governors Association(NGA) Center for Best Practices' Health Division. Dr. Wilkniss' work focuses on policies in behavioral health and social determinants of health and the innovative integration of these into health system transformation efforts. She also leads the NGA Center's technical assistance work with states advancing programs for high-need, high-cost populations.

Prior to joining NGA, Dr. Wilkniss served as senior legislative assistant for health care to U.S. Senators Jeff Bingaman (NM) and Martin Heinrich (NM), and was the director of Thresholds Institute at Thresholds Psychiatric Rehabilitation Centers. She also held an adjunct assistant professorship at Dartmouth Medical School, an assistant clinical professorship at the University of Illinois, Chicago, and was chief psychologist of the inpatient psychiatry unit at the University of Illinois Hospital in Chicago.

Dr. Wilkniss holds a BS in Psychology from Princeton University and a PhD in clinical psychology from the University of Virginia.

## Ben Wood

Ben Wood is the Director of the Division of Community Health Planning and Engagement for the Massachusetts Department of Public Health (MDPH), Bureau of Community Health and Prevention. In that role, he works with communities, state agencies and other stakeholders to increase knowledge of how policies, projects and plans of all types impact health and to develop capacity for collaborative community health improvement planning. This work includes building capacity for the practice of Health Impact Assessment and Health in All Policies, oversight of the Mass in Motion Municipal Wellness and Leadership Program and the development and implementation of tools for the Community Health Initiative (CHI) component of the Determination of Need program which influences how hospitals conduct community health planning activities and includes oversight of the CHI Statewide Initiative Fund. Previous to working for MDPH, Ben was most recently the Director of Public Health for the City of Northampton. Among other accomplishments he led Northampton's participation as a beta-test site for the newly formed Public Health Accreditation Board. He has significant experience in community health assessment, health improvement planning and policy development. He has presented at numerous state and national public health conferences on topics ranging from emergency preparedness and aging and disability issues, Health Impact Assessment and health care reform. He was a member of the executive leadership team of the first permanent steering committee of the Society of Practitioners of Health Impact Assessment and received the Public Service Award from the Massachusetts Public Health Association in 2015. He received a Bachelor of Arts from Hampshire College and his MPH from the University of Michigan, School of Public Health. Ben lives in Northampton, Massachusetts.

## Fred Zimmerman

Dr. Zimmerman is Professor of Health Policy and Management in the UCLA Fielding School of Public Health, where he also co-directs the Center for Health Advancement with Jonathan Fielding, and is President-Elect of the Interdisciplinary Association for Population Health Sciences. Dr. Zimmerman's research illuminates how economic structure—including poverty and inequality—influence population health. His work has been distilled into the multi-level theory of population health.

In one of the earliest agent-based models in economics, Dr. Zimmerman showed why it is rational for low-income people in a developing country to manage assets so conservatively that they end up with low returns—and remain stranded in poverty. Dr. Zimmerman has also published extensively on the effects of child media use on subsequent health and development. His recent research topics include simulated comparative effectiveness of public health policies through the Win-Win project, which he directs. He also continues to research the effects of social and economic policy on population health and has developed a measure of health equity that can be used to track performance on health equity over time and across jurisdictions. In addition, Dr. Zimmerman has a long-standing interest in ethics in public health, and has published pieces on the ethics of behavioral economics and a re-examination of autonomy in public health.

## Appendix B. List of EITC Key Informants

### EITC KEY INFORMANTS

| STATE | ORGANIZATION | DISCUSSANTS |
|---|---|---|
| California | California Budget and Policy Center | Chris Hoene, Executive Director<br>Alissa Anderson, Policy Analyst<br>Sara Kimberlin, Policy Analyst |
| Louisiana | Louisiana Budget Project | Jan Moller, Executive Director<br>Davante Lewis, Public Affairs Outreach Coordinator |
| | Louisiana Partnership for Children and Families | Susan Nelson, Executive Director |
| New Mexico | New Mexico Voices for Children | Bill Jordan, Lobbyist |
| Ohio | Policy Matters Ohio | Amy Hanauer, Founder<br>Kalitha Williams, Project Director |

# Appendix C. Key Informant Interview Guide

## Introduction

Thank you for taking the time to speak with me today! I am with the Public Health Institute, and we are speaking with state and local stakeholders about community-wide interventions that improve health. This project is a collaboration between the Public Health Institute, the Centers for Disease Control and Prevention, and the Centers for Disease Control and Prevention Foundation. The goal of our project is to identify best practices and lessons learned about implementation of policy-level, community-wide interventions. We would like to speak with you today about your experience with successfully implementing [name of CWI here[1]].

I expect this interview to take 1 hour. Does that work for you? (Y/N)

Is it OK to record this interview? The recordings will not be shared with anyone outside of our team. (Y/N)

Do you have any questions for me before we begin?

1. **Please tell me a little bit about yourself and your role in [name of CWI here].**
   a. What was your role during policy development?
   b. What was your role during policy implementation?

2. **Can you tell me some of the main reasons (catalysts) for developing (or expanding) legislation on this issue?** *(Problem Identification Question #1)*

   a. Law, policy, resolution, referendum, strategic plans?
   b. Awareness of information/evidence to move the issue forward?
   c. Stakeholder engagement, coalitions?
   d. Media attention or special event that increased interest?

3. **Were there any public health developments that brought this issue to the forefront?** *(Problem Identification - Question #4)*
   a. What was your role during policy development?
   b. What was your role during policy implementation?

4. **What departments, organizations, groups, or individuals played key roles in passing [insert name of CWI] in your jurisdiction?**
   We are interested both in groups that helped and those that may have made passage more difficult.
   a. Non-profits, advocacy groups such as labor, other branches of government including the department of health

5. **Did any federal policies or activities play a role in the passage of this legislation?** *(Policy Enactment – Question #1)*

6. **What were the most persuasive arguments for moving legislation on this issue forward? Who made them?** *(Policy Enactment – Question #3)*
   a. Health Impact - decreasing injuries, illness or deaths?
   b. Timeliness of the results?
   c. Cost effectiveness? Cost savings?
   d. Economic benefits (e.g., growth)?
   e. Connecting people to services (e.g., health systems, retail, employment, education)?

7. **What efforts are in place to ensure (that ensured) that full implementation of [insert name of CWI here] occurs?** (e.g., enforcement, funding, support) *(Policy Implementation – Question #1)*

[1] *Add specific name of CWI, such as universal pre-kindergarten, within the three CWIs of interest: Earned income tax credit, early childhood education, or public transportation.*

**8. Across your organization/community/state, have you noticed variation in implementation of [insert name of CWI here]?**
*(Policy Enactment – Question #3, adapted)*
a. Is it more or less similar, or are there pockets of particularly good (or poor) uptake?
b. What are some characteristics of those places that stand out to you?

**9. Were there any conflicts or barriers related to implementing this legislation/policy?**
*(Barriers and Facilitators – Question #1)*
a. Obtaining funding?
b. Data collection and analysis?
c. Training of stakeholders (ex: data collection, program/policy implementation)?
d. Time or work required by practitioners?

**10. How did your public health department become involved (or do you think could be involved) in policy planning or implementation?**
*(Collaboration/Partnership Roles, Structures) – Question #12)*

a. Processes/frequency that partners met
b. Provided subject matter expertise of staff (e.g., Community Health Needs Assessments, and strategic planning, evaluation, data demonstrating need for legislation)
c. Convened partners
d. Engaged decision-makers and/or stakeholders
e. Signed a memorandum of understanding
f. Offering technical assistance during the writing of the legislation
g. Providing advocacy or phone call support for the legislation
h. Making a local or regional presentation in support of the legislation
i. Serving as a member of a coalition or task force for the legislation

**11. What advice would you give other jurisdictions interested in enacting similar policies?**
*(Lessons Learned – Question #4)*

**12. What parts of your experience do you think can be replicated elsewhere? What parts of your experience do you believe would be difficult to replicate?**
*(Lessons Learned – Question #2)*

**13. Have you seen improvements in health outcomes related to this issue?**
*(Policy Evaluation – Question #4)*
a. In what ways do you think legislation on this issue has the potential to impact interrelated health outcomes?
b. Did you see similar improvements on other inter-related indicators? Why or why not was that the case?

**14. During your time as (insert position here), which peers did you look to for guidance?**
(Ex: other states, other cities, other counties)?
*(Lead Organization – Question #7)*

**15. That was my last question. Thank you very much for your time and for answering my questions. Would you be interested in speaking with people in other states who are interested in implementing CWIs like the one you did?**
If yes - invite to Deep Dive Meeting

# Appendix D. CDC Foundation HI-5 EITC Convening

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# Appendix E. EITC Deep Dive Meeting Agenda

## CDC FOUNDATION HI-5 EARNED INCOME TAX CREDITS CONVENING

### Agenda

1. **8:30a.m. – Registration and breakfast**
2. **9:00a.m. – Morning session**
    a. Welcome and introduction
    b. Initial response to EITC Public Health Action Guide
    c. Earned income tax credits orientation
3. **11:45a.m. – Lunch**
4. **12:15p.m. – Afternoon session**
    a. Revisit the EITC Public Health Action Guide
    b. Small group work and whole group discussion
5. **4:00p.m. – Closing remarks**

PUBLIC HEALTH ACTION GUIDE

# EITC

## One of the most effective public health interventions you've never heard of.

**PROBLEM** When working families struggle to make ends meet on low wages, that can lead to poor health outcomes such as increased risk for disease and premature death.[1] If only public health practitioners could find an intervention that would put more money in people's pockets, enabling them to buy healthier foods, pay bills, or afford dependable transportation!

**SOLUTION** For some working families, there is an intervention: the **Earned Income Tax Credit** (EITC).

**RESULTS** Research shows EITCs can significantly improve health outcomes in five years or less, especially maternal and child health.[2] Black mothers historically have higher risk for worse birth outcomes. State EITCs are one policy option that helps address this disparity.[3]

**EITCs are one of the best public health interventions available, and public health can play a key role increasing EITC availability, size, and participation.**

### What is an EITC?

The earned income tax credit helps eligible low- to moderate-income working people keep more of the money they earn by reducing the taxes they owe.[4]

The EITC provides a financial boost for households based on their income and family size.

**Many states and the federal government offer a refundable EITC, which may be larger than what a household owes in taxes, resulting in extra income for the family.**

### How can EITCs help reduce poverty and improve health outcomes?

| PEOPLE | COMMUNITIES |
|---|---|
| Put money back in the pockets of working people | Put more money back in local economies |
| Reduce food insecurity | Reduce healthcare costs |
| Free up money for childcare expenses, medical care, and healthy food | Improve maternal and child health outcomes |

**Mothers who receive the largest EITC increases have greater improvements in their own health, including high blood pressure and inflammation.[6]**

EITCs lift people of all races and ethnic groups out of poverty.

**1 IN 5** **people who could get the credit doesn't claim it.[4]**

Children in families receiving the EITC showed fewer behavioral health problems, including anxiety and depression.[5]

**Babies born to mothers eligible to receive the largest EITC increases had the greatest improvements in birth outcomes.[7]**

CDC Foundation
Together our impact is greater

# Frequently Asked Questions About the EITCs and Public Health

## What's the evidence behind EITC's impact on health?

The Centers for Disease Control & Prevention (CDC) has identified EITCs as one of **14 key evidence-based interventions** that can improve health in five years or less and has been shown to be cost effective. Direct health benefits include improved infant and maternal health, such as increased birth weight and reduced risk for death and poor childhood health.[8] Indirect effects may include increased test scores, graduation rates, and college enrollment, with subsequent impact on future employment rates and earnings, all associated with improved health outcomes across the lifespan.

## Why should public health take on EITC?

EITCs can accelerate every other goal you have for reducing health disparities. Putting money back into people's pockets can directly improve numerous social determinants of health. EITCs benefit people of all racial/ethnic backgrounds by decreasing poverty and improving health outcomes, particularly for infants and mothers. Public health often works with the very populations who would benefit from EITCs, so you can raise awareness, refer people to tax assistance resources, and find people to share EITC success stories.

## What role can public health play?

EITCs require key players across different sectors including public health. Public health can:

- **Raise awareness among key medical and public health officials and state and local agencies such as public health associations, boards of health, and WIC offices.**
- **Refer people to free tax assistance for low-income working families via Volunteer Income Tax Assistance (VITA) programs.**
- **Provide EITC-related health data to build evidence for partners, community groups, legislators, and others working to pass EITCs.**

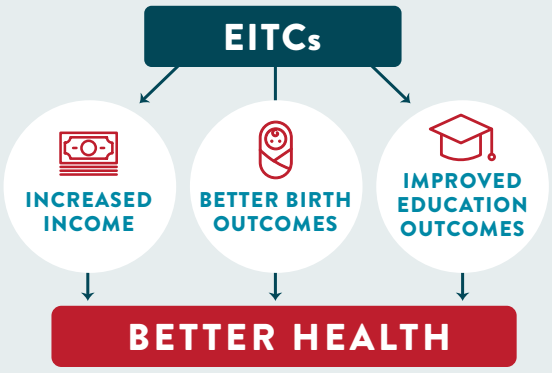
**7.5 MILLION**

families lived in poverty in 2018, according to the U.S. Census Bureau.[10]

In 2018, EITCs kept

**5.6 MILLION**

people — over half of them children — out of poverty.[11]




**EITC SUCCESS STORY**

MASSACHUSETTS

### Public Health Success

Massachusetts adopted an EITC in 2015 by convening a statewide coalition of community action agencies, anti-poverty agencies, and sectors including housing, education, and public health. Massachusetts recognized the need to message health and EITC together, framing EITC as a medicine that can improve health and reduce stress. Following initial success, Massachusetts expanded its EITC in 2018.

## Why is EITC such an effective poverty intervention?

**EITCs adjust for earning:** They gradually increase with earnings, and then taper off, which boosts earnings from work.

**EITCs are a win-win for states and municipalities:**

- EITCs are good for the economy.
- EITC dollars can have large multiplier effects and increase tax revenues.

For example, in San Antonio, Texas, it is estimated that $1.00 of EITC spending results in $1.58 in local economy activity.[9]

## Make the case to people eligible for EITC to use it:

**Use EITC outreach materials:** Raise awareness among families with free materials from **www.eitcoutreach.org**.

**Build trust in EITCs:** People may think that EITCs are too good to be true. Help them understand there's no catch.

**Refer people you serve to free, high-quality tax help:**

Internal Revenue Service locator for Volunteer Income Tax Assistance (VITA) sites

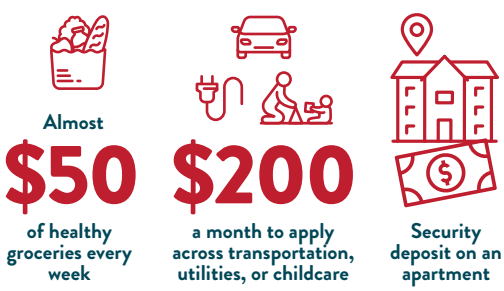
Free File Alliance offers free online tax prep software to low-income taxpayers

## How much of a difference does the EITC make for a family?

Average amount per tax filer in 2017[4]

**$2,488**

**THIS COULD PAY FOR**



Almost **$50** of healthy groceries every week

**$200** a month to apply across transportation, utilities, or childcare

Security deposit on an apartment

**EITC SUCCESS STORY**

JASMINE'S STORY

### Small Boost, Big Impact

Thanks to their $2,800 EITC refund, Jasmine and her husband were finally able to repair their car, enabling Jasmine to drive between her two part-time jobs. Able to get to prenatal visits and to the grocery store for healthy food options without having to constantly rely on friends and family, she managed her high blood pressure better than in her first two pregnancies, and their son was born full-term, at a healthy weight.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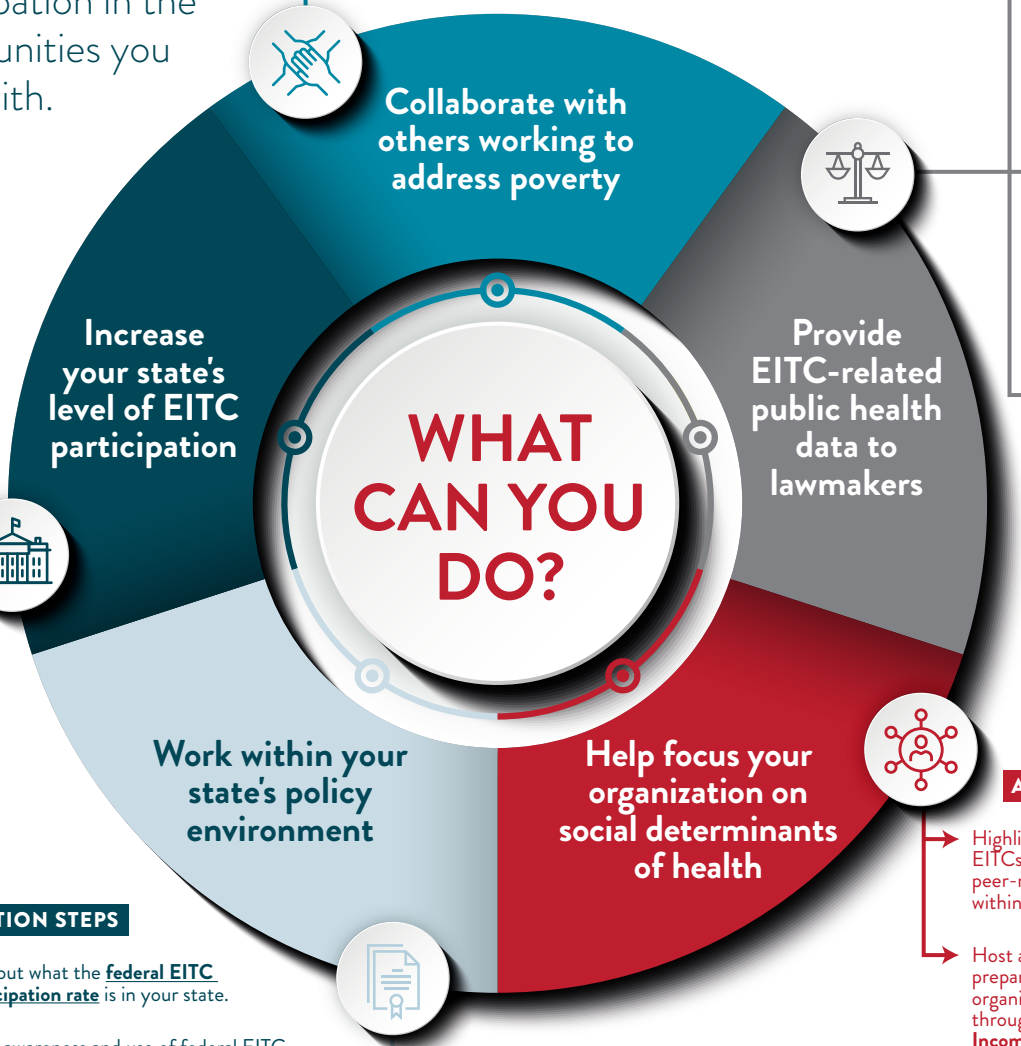
# Actions for Public Health Practitioners to Increase EITC Participation

Identify action steps you can take to increase EITC participation in the communities you work with.




**ACTION STEPS**

- Reach out to anti-poverty and child-serving groups or local economic development organizations.
- Search online to determine which potential EITC partners are active in your state.

**ACTION STEPS**

- Educate lawmakers with data on how EITCs are one of the most effective ways to improve health. Reference local data if possible.
- During the legislative session, connect with policy-focused partners to support the EITC. You may be able to provide valuable testimony or share expertise in other settings.
- Build relationships with lawmakers by providing data and resources outside the busy legislative session.

**ACTION STEPS**

- Highlight health impacts of EITCs by sharing peer-reviewed literature within your organization.
- Host a volunteer tax preparation service at your organization. Learn how through the **Volunteer Income Tax Assistance (VITA) grant program**.

**ACTION STEPS**

- Find out what the **federal EITC participation rate** is in your state.
- Raise awareness and use of federal EITC with reminders, flyers, social media messages, and referrals.
- Use tax season as an opportunity to inform people about **free tax assistance**.
- Mention EITCs when you interact with people who receive other benefits or who have just entered the workforce.
- Provide EITC awareness material to state and local education and public health agency networks.

**ACTION STEPS**

- Focus on what messages resonate best in your community:
  - *EITCs provide a tax cut to struggling working families.*
  - *EITCs have lifted more kids out of poverty than any other tax policy.*
  - *EITCs can help keep people on the job by allowing working families to make ends meet.*
  - *EITCs help mothers and children: EITCs mean better birth outcomes, better health, better educational attainment, and more.*
- Highlight the public health impacts of EITCs.
- Focus on evidence-based literature that highlights the positive return on investment related to public health spending.

## Appendix G. Transportation: List of Key Informants

### HI-5 TRANSPORTATION AND PUBLIC HEALTH KEY INFORMANTS

| STATE | ORGANIZATION | KEY INFORMANTS |
|---|---|---|
| **Massachusetts** | Massachusetts Public Health Association<br>Food Bank of Western Massachusetts | Andrea Freeman, Field Director<br>Laura Sylvester, Legislative and Community Partnership Coordinator |
| **Michigan** | Flint Mass Transportation Authority<br>Michigan Department of Transportation | Harmony Lloyd, Chief Operating Officer, Planning<br>Jean Ruestman, Administrator |
| **Oregon** | Oregon Department of Transportation<br>Oregon Health Authority, Public Health Division | Marsha Hoskins, Public Transportation Manager<br>Cara Biddlecom, Director of Policy and Partnerships |
| **Tennessee** | Nashville Area Metropolitan Planning Organization | Leslie Meehan (former Director of Healthy Communities for MPO, currently with Tennessee Department of Health) |
| **Washington** | King County Metro Transit | Christina Rusillo, Managing Director, Customer Communications and Services<br>Tessa McClellan, Mobility Policy Program Manager |

# Appendix H. Key Informant Interview Guide

## Introduction

Thank you for taking the time to speak with me today! I am with the Public Health Institute, and we are speaking with stakeholders about community-wide interventions included in the CDC's Health Impact in 5 years initiative. This is a collaboration between the CDC Foundation, the CDC, and the Public Health Institute. Our goal is to identify the conditions that led to the development and implementation of community-wide transportation policies. I will be asking you questions about how and why these policies came about. By "policy" we are referring to a law, regulation, or administrative action implemented by government or another institution. I'd like to speak with you today about your experience with policies in your state/city that have increased safe, timely and affordable bus access to frequent destinations, such as work, school or shopping. Please note we will NOT be addressing rides to wellness visits (non-emergency medical transportation providing door-to-door service for riders going to medical appointments).

I expect this interview to take 60-90 minutes. Does that work for you? (Y/N)

Is it OK to record this interview? The recordings will not be shared with anyone outside of our team. (Y/N)

Do you have any questions for me before we begin?

I will first ask you about development and enactment of the policy, and then switch to implementation. By "development" I mean the strategies used to identify the problem, and the policy options considered. Then I'd like to know about the process of enacting the policy.

1. **We reviewed the information provided and I understand that your city/state has been working on [CWI] to [X] and has been successful. We would love to learn more about how and why this [CWI] came about. Here's what I understand about your process [describe] – is there anything I am missing? How were you involved in the development [CWI]?**

2. **I'm now trying to understand why your city/state developed this policy. What were you trying to accomplish?** What was the need you were hoping to address? Why was this important and to whom?

   a. Leadership, e.g. governor/mayor
   b. Partnerships? Peer state?
   c. Political environment/ legislative priorities, economic issues
   d. Health outcomes, PH involvement?
   e. Emergency preparedness and response initiative
   f. Advocacy groups or community-based requests, end-users (riders)
   g. Legal obligation e.g., compliance with the American with Disabilities Act

3. **Who were the key players in developing and passing this policy> What was their role? What was their motivation?** Organizations? Government agencies or departments? Individuals? Advocacy or community-based groups? Did you look to any peers for guidance?

4. **Specifically, we are interested in how public health was involved – to assist other states that may be in the development phases. Do you have any structures in place to encourage collaborations with public health or other government entities?** [Probe for specific public health involvement]:
   - Injury prevention (traffic safety, decrease motor vehicle accidents)
   - Chronic disease – obesity prevention, physical activity
   - Health equity – increasing access for all groups
   - Environmental health: improve air quality, decrease exposure to air pollution, lower asthma rates
   - Epidemiology – sharing data (add or use population-based questions addressing this topic)
   - ASTHO
   - Contributed data or conducted research for example they conducted a Health Impact Assessment
   - Other?

**5. What relationships were necessary and how were these partnerships formed?**
*[If not covered in #3]*
Had these parties worked together in the past (history of relationship)?
Who led the process? Why? How?
How did you work together (e.g. quarterly meetings, create a cabinet or counsel, MOU)?

**6. In your opinion, who was missing? And why?**
Probe for role of public health, if not mentioned above

**7. What were the challenges in getting this policy passed?**
a. How did you overcome them? How did you maintain momentum?
b. What were the barriers to working together with public health (e.g., used different language, time frames, didn't understand each other's organization culture, or other?)

**8. What else do we need to know to really understand why and how you developed and enacted X?**
**Any key advice for other states working on similar policies?**

Now let's talk about how the policy was implemented. By implementation I mean putting the law into practice. For example, who was responsible for setting goals and objectives, appropriations, as well as the rules, standards, and policies to guide the implementation stages.

**9. What is your role in implementing this policy? Has your role changed over time, if so, how?**
**(If covered previously: is there anything else you would like to tell me about your role in policy implementation?)**

**10. Now let's talk again about key players - who led the implementation of [CWI] in your city/state?**
**Did the key players differ at all from those who developed it?**
a. Were there specific organizations? Government agencies? Individuals?
b. Tell me about their roles. How did you work together (e.g. quarterly meetings, create a cabinet or counsel)?
c. What sectors were missing? [Probe for public health]

**11. What is it about the way the policy was implemented that made a difference to how it worked?**
a. What challenges have you encountered?
b. Has your approach been adapted/evolved throughout the process? If so, how?
c. If you could change something about how this policy was implemented, what would you change and why?
d. Probe: How do you think public health could help promote the use of public transportation in your City?

**12. How do you think this policy has helped to increase access to bus transportation in your city/state?**
a. How do you know that?
b. In what ways has access been increased? (Ridership? Frequency of service? Dedicated bus lanes?)
c. Can you provide examples? [probe: data?]

**13. What outcomes are you tracking in relation to this policy? How are you tracking them?**
If not covered in above] Was public health considered?

**14. What advice would you give other states and jurisdictions interested in developing, enacting and implementing similar policies?**

Closing **That was my last question. Thank you so much for your time and for answering my questions.**

# Appendix I. CDC Foundation HI-5 Public Transportation Convening

## THURSDAY, FEBRUARY 27, 2020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# Appendix J. Public Transportation Policy Deep Dive Design Document

**FEBRUARY 27, 8AM BREAKFAST 8:30-5:00 PM**

**CDC FOUNDATION**
**600 PEACHTREE STREET NE, SUITE 1000**
**ATLANTA, GEORGIA 30308**

## Purpose Statement

Convene and connect public transportation and public health leaders to:

- Collaborate and learn how partners can create policies that increase health equity and address SDOH in their communities,
- Increase understanding of the public transportation policy development process and discover PHs potential role in supporting public transportation,
- Collect learnings to inform Early Stage Communities interested in developing innovative transportation policies to support improved health outcomes, wellbeing and quality of life.

## Draft Objectives

1. Gather lessons learned and best practices to increase bus access to everyday destinations through innovative public transportation policy (both urban and rural)
2. Identify enabling conditions and policy components that lead to effective transportation policy
3. Identify Public Health's roles in transportation policy
4. Discover how a multi sector collaboration on public transit could greatly benefit both public health's and public transportation goals

## Internal Project objectives

Convene and connect public transportation and public health leaders to:

- Get Public Health more involved in (Transportation) Policy that address SDOH
- New way of doing work - through multisector learning (policy and public health +?) to drive health outcomes; bring policy and ph stakeholders together to
- Capture stories of end users - really make the case for how these policies impact sdoh
- Interaction is intervention
- Create a bridge (connection) between transportation and poverty and other SDOH
- Integrating lessons learned from EITC DD what else do we know is needed here? Context - what works from who and what context?
- Documentation and strategic listening reflects what we are learning - case studies?
    - Health messaging 101 transportation policy intersection of health / what does it mean?

# Appendix K. Transportation Deep Dive Convening Follow Up Survey & Results

**JULY 2020**

## Transportation Deep Dive Convening Follow Up Contents



## Survey

**1.** Please take a moment to think back to the HI-5 Public Transportation Convening held on February 27, 2020. Remembering some of the people you talked to, the examples you heard, and some of the similarities and differences we uncovered between public health and public transportation...

**Did you make any plans or take any actions to engage with the public health sector?**

○ Yes ○ No

**2.** **How did you engage with the public health sector?**

Please check all that apply.

☐ Did further reading or research
☐ Had a conversation about shared goals or challenges
☐ Started a shared initiative
☐ Worked together on the COVID 19 response
☐ Other (please specify)

**3.** **What are the barriers to your or your agency's participation in a public health program?**

Please check all that apply.

☐ Not an agency priority
☐ Lack of funding
☐ Lack of resources (staffing, time, etc.)
☐ Wouldn't know how to get involved/ where to start
☐ Other (please specify)

**4.** **In your opinion, what skill sets does public health need to contribute to the development or implementation of a transportation program?**

**5.** **Are you able to offer technical assistance, training, or other learning opportunities to the public health sector about transportation programs?**

○ Yes (specify) ○ No

Please specify

# Appendix K. Transportation Deep Dive Convening Follow Up Survey & Results

**JULY 2020**

**6. As a result of COVID 19, how have you or your agency collaborated with public health to establish policies and practices to keep the transportation system, riders, and employees safe?**

Please check all that apply.

- ☐ Establish cleaning and disinfection protocols
- ☐ Establish social distancing protocols
- ☐ Create health and safety information for passengers
- ☐ Create health and safety information for drivers and other employees
- ☐ Not applicable, have not collaborated with the public health sector on COVID 19 response
- ☐ Other (please specify)

**7. In what ways have you adapted your services in response to the COVID 19 epidemic?**

- ☐ Adjusted routes and fares to serve essential workers
- ☐ Modified routes or re-tasked vehicles and drivers to serve hospitals, grocery stores or food banks
- ☐ Repurposed transit drivers and vehicles for delivery of vital goods
- ☐ Other (Specify)

**8. Are there (other) ways you would like to engage with the public health sector during or after this crisis?**

○ Yes, during this crisis (please specify) ○ Yes, after this crisis (please specify) ○ No

Please specify

**9. Please share any comments or thoughts you have about the Deep Dive Convening.**

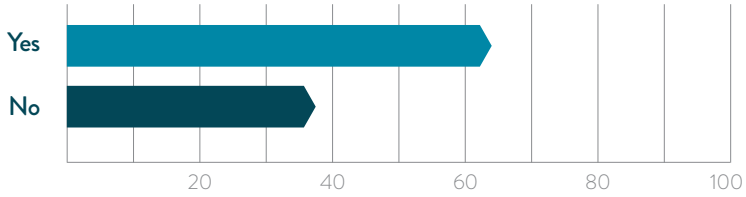
# Appendix K. Transportation Deep Dive Convening Follow Up Survey & Results

**JULY 2020**

## Results

### 1. Did you make any plans or take any actions to engage with the public health sector?

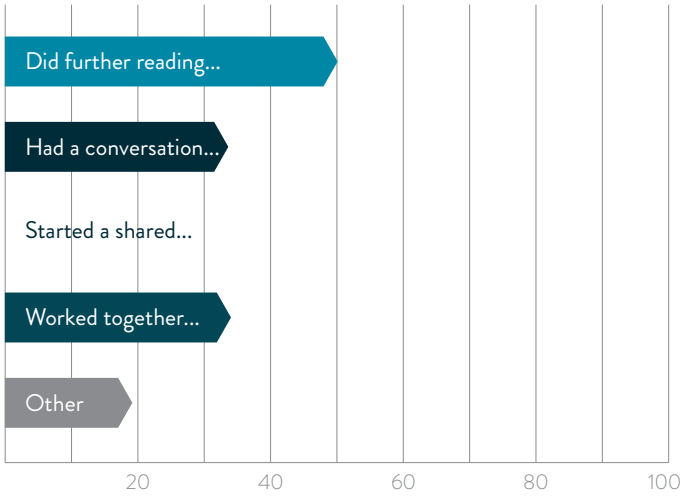
Answered: 11 Skipped: 0




| RESULTS | | |
|---|---|---|
| **ANSWER CHOICES** | **RESPONSES** | |
| Yes | 63.64% | 7 |
| No | 36.36% | 4 |
| **TOTAL** | | **11** |

### 2. How did you engage with the public health sector?

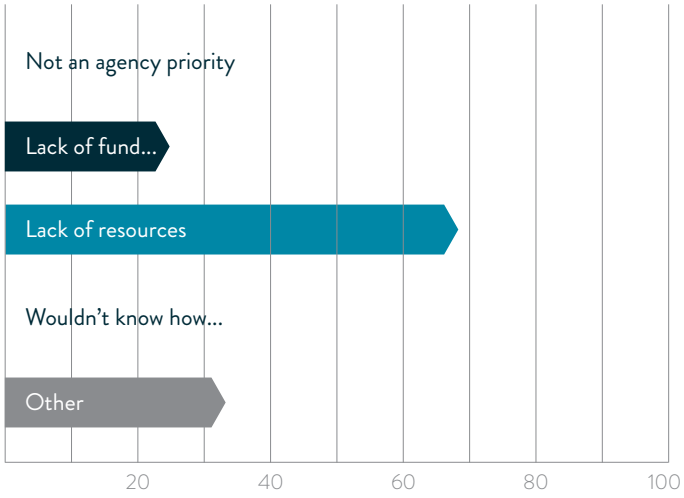
Answered: 6 Skipped: 5




| RESULTS | | |
|---|---|---|
| **ANSWER CHOICES** | **RESPONSES** | |
| Did further reading or research | 50.00% | 3 |
| Had a conversation about shared goals or challenges | 33.33% | 2 |
| Started a shared initiative | 0.00% | 0 |
| Worked together on the COVID 19 response | 33.33% | 2 |
| Other (please specify) | 16.67% | 1 |
| **TOTAL RESPONDENTS: 6** | | |

### 3. What are the barriers to your or your agency's participation in a public health program?

Answered: 9 Skipped: 2




| RESULTS | | |
|---|---|---|
| **ANSWER CHOICES** | **RESPONSES** | |
| Not an agency priority | 0.00% | 0 |
| Lack of funding | 22.22% | 2 |
| Lack of resources (staffing, time, etc.) | 67.67% | 6 |
| Wouldn't know how to get involved /where to start | 0.00% | 0 |
| Other (please specify) | 33.33% | 3 |
| **TOTAL RESPONDENTS: 9** | | |

# Appendix K. Transportation Deep Dive Convening Follow Up Survey & Results

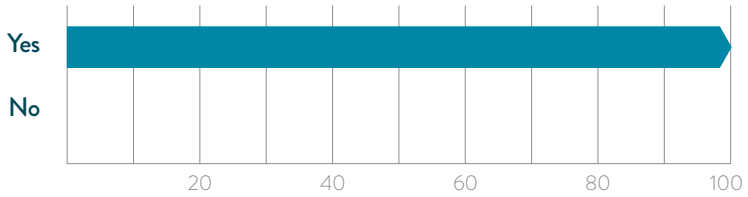
## JULY 2020

**4. In your opinion, what skill sets does public health need to contribute to the development or implementation of a transportation program?**

Answered: 11 Skipped: 0

**5. Are you able to offer technical assistance, training, or other learning opportunities to the public health sector about transportation programs?**

Answered: 8 Skipped: 3

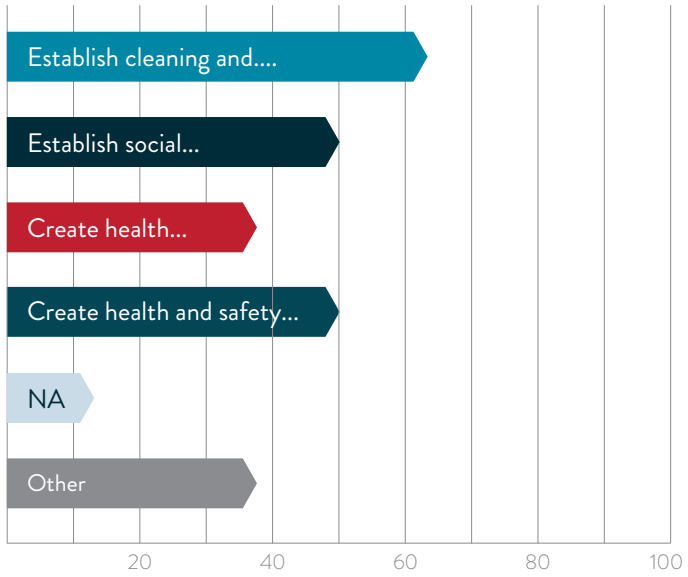



**RESULTS**

| ANSWER CHOICES | RESPONSES | |
|---|---|---|
| Yes | 100.00% | 8 |
| No | 0.00% | 0 |
| TOTAL | | 8 |

**6. As a result of COVID 19, how have you or your agency collaborated with public health to establish policies and practices to keep the transportation system, riders, and employees safe?**

Answered: 8 Skipped: 3




**RESULTS**

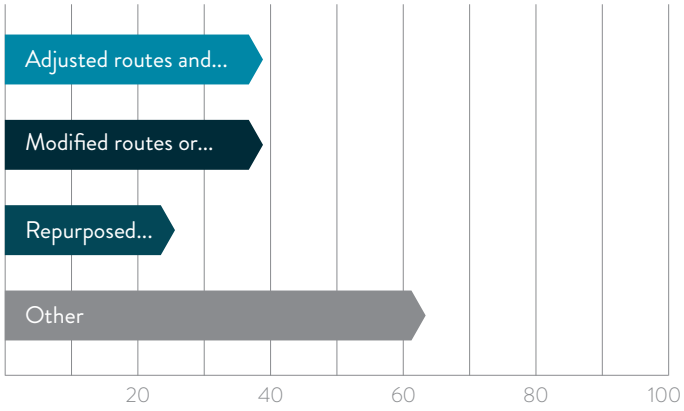
| ANSWER CHOICES | RESPONSES | |
|---|---|---|
| Establish cleaning and disinfection protocols | 62.50% | 5 |
| Establish social distancing protocols | 50.00% | 4 |
| Create health and safety information for passengers | 37.50% | 3 |
| Create health and safety information for drivers and other employees | 50.00% | 4 |
| Not applicable, have not collaborated with the public health sector on COVID 19 response | 12.50% | 1 |
| Other (please specify) | 37.50% | 3 |
| TOTAL RESPONDENTS: 8 | | |

# Appendix K. Transportation Deep Dive Convening Follow Up Survey & Results

**JULY 2020**

**7. In what ways have you adapted your services in response to the COVID 19 epidemic?**

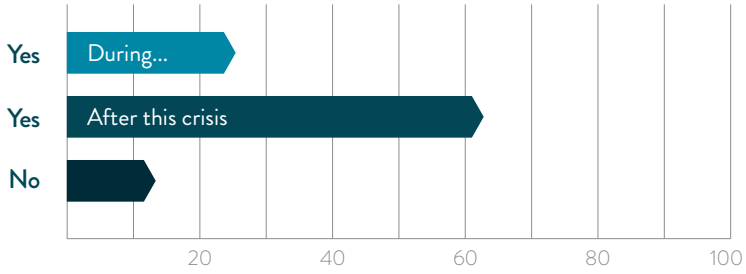
Answered: 8 Skipped: 3




| RESULTS | | |
|---|---|---|
| **ANSWER CHOICES** | **RESPONSES** | |
| Adjusted routes and fares to serve essential workers | 37.50% | 3 |
| Modified routes or re-tasked vehicles and drivers to serve hospitals, grocery stores or food banks | 37.50% | 3 |
| Repurposed transit drivers and vehicles for delivery of vital goods | 25.00% | 2 |
| Other (Specify) | 62.50% | 5 |
| **TOTAL RESPONDENTS: 6** | | |

**8. Are there (other) ways you would like to engage with the public health sector during or after this crisis?**

Answered: 8 Skipped: 3




| RESULTS | | |
|---|---|---|
| **ANSWER CHOICES** | **RESPONSES** | |
| Yes, during this crisis | 25.00% | 2 |
| Yes, after this crisis | 62.50% | 5 |
| No | 12.50% | 5 |
| **TOTAL** | | **8** |

**9. Please share any comments or thoughts you have about the Deep Dive Convening.**

Answered: 7 Skipped: 4

# Appendix K. Transportation Deep Dive Convening Follow Up Survey & Results

**JULY 2020**

## Survey

**1.** Please take a moment to think back to the HI-5 Public Transportation Convening held on February 27, 2020. Remembering some of the people you talked to, the examples you heard, and some of the similarities and differences we uncovered between public health and public transportation...

**Did you make any plans or take any actions to engage with the transportation sector?**

○ Yes ○ No

**2.** **How did you engage with the transportation sector?**

Please check all that apply.

- ☐ Did further reading or research
- ☐ Had a conversation about shared goals or challenges
- ☐ Started a shared initiative
- ☐ Worked together on the COVID 19 response
- ☐ Other (please specify)

**3.** **What are the barriers to your or your agency's participation in a transportation program?**

Please check all that apply.

- ☐ Not an agency priority
- ☐ Lack of funding
- ☐ Lack of resources (staffing, time, etc.)
- ☐ Wouldn't know how to get involved/ where to start
- ☐ Other (please specify)

**4.** **As a result of COVID 19, have you or your agency collaborated with transportation to establish policies and practices to keep the transportation system, riders, and employees safe?**

Please check all that apply.

- ☐ Establish cleaning and disinfection protocols
- ☐ Establish social distancing protocols
- ☐ Create health and safety information for passengers
- ☐ Create health and safety information for drivers and other employees
- ☐ Not applicable, have not collaborated with the public health sector on COVID 19 response
- ☐ Other (please specify)

**5.** **Are there (other) ways you would like to engage with the transportation sector during or after this crisis?**

○ Yes, during this crisis (please specify) ○ Yes, after this crisis (please specify) ○ No

Please specify

**6.** **Thinking about a "Post COVID new normal," what training or support do you or your agency need to participate in transportation program development or implementation ?**

**7.** **Please share any comments or thoughts you have about the Deep Dive Convening.**

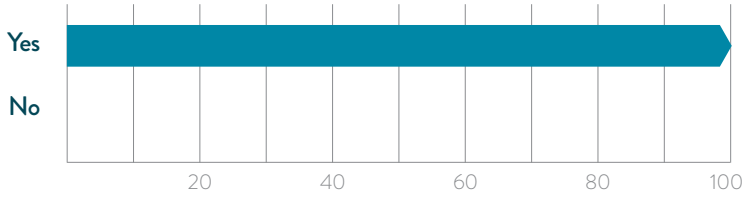
# Appendix K. Transportation Deep Dive Convening Follow Up Survey & Results

**JULY 2020**

## Results

### 1. Did you make any plans or take any actions to engage with the transportation sector?

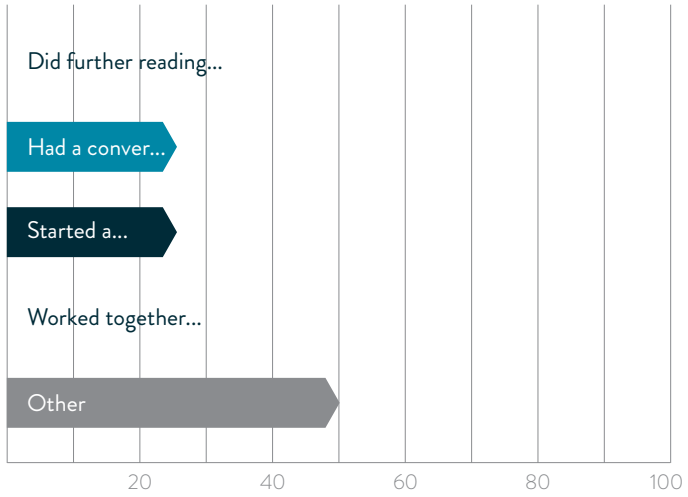
Answered: 6 Skipped: 0




| RESULTS | | |
|---|---|---|
| ANSWER CHOICES | RESPONSES | |
| Yes | 100.00% | 6 |
| No | 0.00% | 0 |
| TOTAL | | 6 |

### 2. How did you engage with the transportation sector?

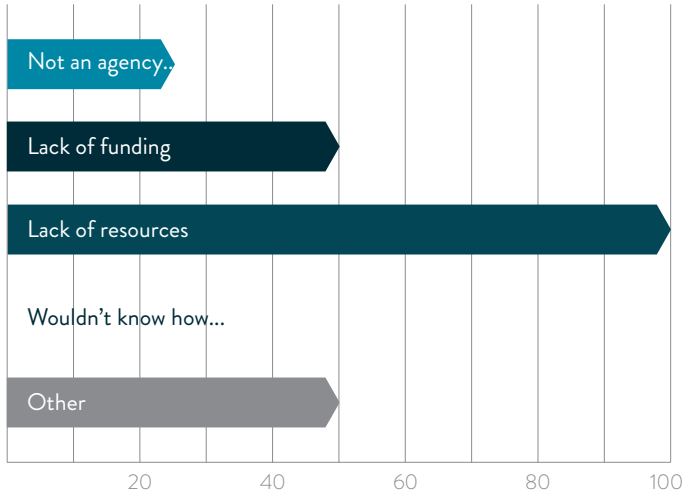
Answered: 4 Skipped: 2




| RESULTS | | |
|---|---|---|
| ANSWER CHOICES | RESPONSES | |
| Did further reading or research | 0.00% | 0 |
| Had a conversation about shared goals or challenges | 25.00% | 1 |
| Started a shared initiative | 25.00% | 1 |
| Worked together on the COVID 19 response | 0.00% | 0 |
| Other (please specify) | 50.00% | 2 |
| TOTAL RESPONDENTS: 6 | | |

### 3. What are the barriers to your or your agency's participation in a transportation program?

Answered: 4 Skipped: 2



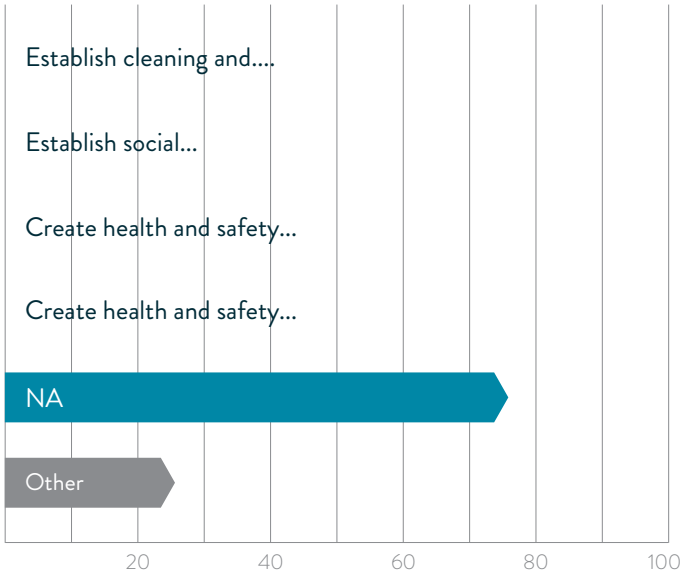

| RESULTS | | |
|---|---|---|
| ANSWER CHOICES | RESPONSES | |
| Not an agency priority | 25.00% | 1 |
| Lack of funding | 50.00% | 2 |
| Lack of resources (staffing, time, etc.) | 100.00% | 6 |
| Wouldn't know how to get involved /where to start | 0.00% | 0 |
| Other (please specify) | 50.00% | 2 |
| TOTAL RESPONDENTS: 4 | | |

# Appendix K. Transportation Deep Dive Convening Follow Up Survey & Results

**JULY 2020**

**4. As a result of COVID 19, have you or your agency collaborated with transportation to establish policies and practices to keep the transportation system, riders, and employees safe?**

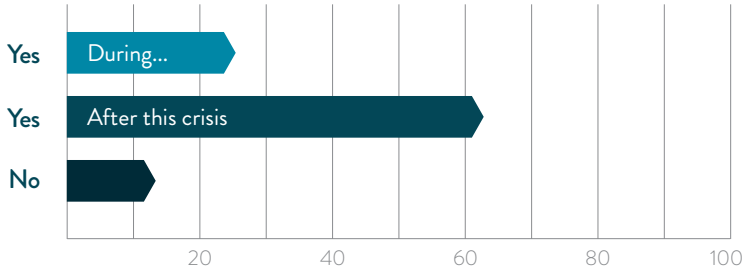
Answered: 4 Skipped: 2




| RESULTS | | |
|---|---|---|
| ANSWER CHOICES | RESPONSES | |
| Establish cleaning and disinfection protocols | 0.00% | 0 |
| Establish social distancing protocols | 0.00% | 0 |
| Create health and safety information for passengers | 0.00% | 0 |
| Create health and safety information for drivers and other employees | 0.00% | 0 |
| Not applicable, have not collaborated with the public health sector on COVID 19 response | 75.00% | 3 |
| Other (please specify) | 25.00% | 1 |
| TOTAL RESPONDENTS: 4 | | |

**5. Are there (other) ways you would like to engage with the public health sector during or after this crisis?**

Answered: 8 Skipped: 3




| RESULTS | | |
|---|---|---|
| ANSWER CHOICES | RESPONSES | |
| Yes, during this crisis | 25.00% | 2 |
| Yes, after this crisis | 62.50% | 5 |
| No | 12.50% | 5 |
| TOTAL | | 8 |

**6. Thinking about a "Post COVID new normal," what training or support do you or your agency need to participate in transportation program development or implementation ?**

**7. Please share any comments or thoughts you have about the Deep Dive Convening.**

PUBLIC HEALTH ACTION GUIDE

# PUBLIC TRANSPORTATION

## Public transportation drives health by moving people.

**PROBLEM** In the United States, 45% of people have no access to public transportation,[1] making it difficult to access jobs, food, education, healthcare services, and social connections.

**SOLUTION** All modes of public transportation are important, but bus routes play a special role in the lives of Americans. Frequent and reliable bus routes allow for service to more destinations over a larger area and can adapt to meet the changing needs of communities. Buses are also used by more people who depend on public transportation, thereby providing greater equity benefits.[2]

**RESULTS** Increasing access to frequent, reliable public transportation can lead to fewer traffic vehicle crashes, reduced air pollution and associated respiratory illnesses, and increased physical activity levels.[3] Even people who don't use public transportation benefit from less traffic congestion, less pollution, and lower community costs for healthcare. Buses can connect more people to everyday destinations by allowing riders to get closer to their final destinations.

### What is Public Transportation?

Public transportation varies by community and includes many mobility options for the public such as:

- BUSES
- LIGHT RAIL
- PARATRANSIT
- SUBWAY SYSTEMS

### How Can Public Transportation Improve Economic Development and Health?

**PEOPLE**

- Increases access to jobs, schools, grocery stores, and medical care
- Increases physical activity
- Reduces respiratory symptoms including asthma
- Helps conserve limited resources for families who would struggle to pay for a private vehicle
- Provides personal mobility and freedom

**COMMUNITIES**

- Improves air quality by reducing pollution
- Reduces injuries and deaths from motor vehicle crashes
- Reduces traffic congestion, improving air quality and quality of life for all
- Revitalizes communities and stimulates local economies

Minorities are more likely to depend on public transportation.

**HOUSEHOLDS THAT DO NOT OWN A CAR:[4]**

**24%** African-American households

**17%** Latino households

**13%** Asian-American households

**7%** White households

Over **two thirds** of riders walk to their stop or station.[1]

**87%** of trips on public transit directly affect the local economy.[1]

CDC Foundation
Together our impact is greater

# Frequently Asked Questions About Public Transportation and Public Health

## What's the evidence behind public transportation and the impact on health?

The Centers for Disease Control & Prevention (CDC) has identified introducing and expanding public transportation as one of **14 key evidence-based interventions** that can improve health in five years or less and is cost effective. Direct health benefits include reducing injuries associated with motor vehicle crashes[5] and reducing adverse health impacts associated with exposure to air pollution.[6]

Public transportation use is associated with increased physical activity levels.[7,8] Physical activity can

- lower the risk of chronic conditions;
- improve aerobic fitness, mental health, and cognition; and
- help prevent weight gain.[9]

Public transportation also plays a critical role during emergencies like the COVID-19 pandemic by

- transporting first responders and essential employees,
- evacuating vulnerable populations, and
- revitalizing the economy after emergencies.

## Why should public health join forces with public transportation?

Public transportation improves access to jobs, schools, healthy food options, and medical care. It can also improve mental health and well-being by giving people of all abilities the independence to get around and connect with others in their communities. Working toward shared goals with allies from the public transportation sector is a win-win for public health practitioners and for transportation planners.

## How can public health practitioners collaborate with transportation planners?

Although public health and transportation are two very different disciplines, many similarities exist between them. Both disciplines use data to make decisions and pilot projects to inform future efforts. Both have similar goals, such as improving public safety and connectedness. Contact local transportation planners to exchange information about your goals and projects to identify opportunities to collaborate.

## What role can public health play?

Transforming the public transportation system to ensure more people who need it have access to it requires a multi-sectoral approach including public health. Public health can:

**Bring public health, transportation, and land use decision makers together regularly to learn about upcoming projects and engage with the community before ground is broken.**

**Provide health data to decision makers that you already collect to build evidence for the need to increase access to public transportation.**

**Invite transportation planners and mobility managers to offer their perspectives on interventions you are planning, including what data to collect.**

**PUBLIC TRANSPORTATION SUPPORTS JOBS**

**430,000 JOBS** Supported in total[1]

**50,000+ JOBS** Supported for every $1 billion invested[1]

**SUCCESS STORY**

### MICHIGAN
### Public Transportation Success

In 2015, Flint, Michigan had high unemployment but neighboring counties such as Livingston, 40 miles away, had a labor shortage and jobs to fill. The problem: Flint residents didn't have reliable transportation to get to these jobs. The solution: A new bus service. Now more than 30,000 riders take buses each month to job destinations in four neighboring counties.

# Why is Public Transportation Such a Cost-effective Health Intervention?

### Public transportation saves money

The average household spends about 15 cents of every dollar on buying, maintaining, and operating cars, the largest expenditure after housing.[1] In the United States, transportation expenditures are inversely correlated with income.[10] When localities fail to provide transportation options, cars may be a necessity to get to work or school or access basic services, leaving low-income households with fewer options and greater financial burden.

### Public transportation is a win-win for states and municipalities

- Each $1 invested in public transportation generates **4x** as much in economic returns.[1]
- Every $10 million of capital investment in public transportation earns **$30 million** in increased business sales.[1]

### Public transportation is a win-win for riders and drivers

Public transit investment has wide-ranging economic benefits for both those who ride it and those people who continue to drive, reducing health impacts of pollution, traffic congestion, and overall community health costs.

### Public transportation comes with options

Public transportation comes in many shapes and forms, allowing decision makers to pursue the options that work for their residents. Buses are often an ideal introductory public transportation solution. Existing road infrastructure allows bus transit to be easily be added, expanded, or changed as needs evolve.

## Why Should Your Community Strengthen Support for Buses?

**Buses are on one of the easiest modes to implement. Buses can operate on existing roads, which means lower capital costs and can allow for dedicated bus lanes.[2]**

**Sidewalks to bus stops can also increase physical activity and lead to more people meeting the Active People, Healthy Nation℠ goal of getting 27 million people more physically active by 2020.**

**Buses can reduce traffic congestion, which can improve air quality.**

**While many Americans may never have ridden a train or a subway, many are familiar with or have experience riding a bus.**

**$355**

Expanding public transportation to include bus rapid transit or high-quality urban rail generates nearly $355 in per capita annual health benefits[11]

**10x SAFER**

**Public transportation is ten times safer per mile than traveling by car[12]**

SUCCESS STORY

### Maria's Story

Maria is a mother of two who could not reliably get her children to school and make it to her job across town when her older car needed too many repairs. When a city bus route added a reliable crosstown express service, she had another option to get around dependably. The added physical activity reduced her stress levels and brought her weight to healthy levels for the first time in years.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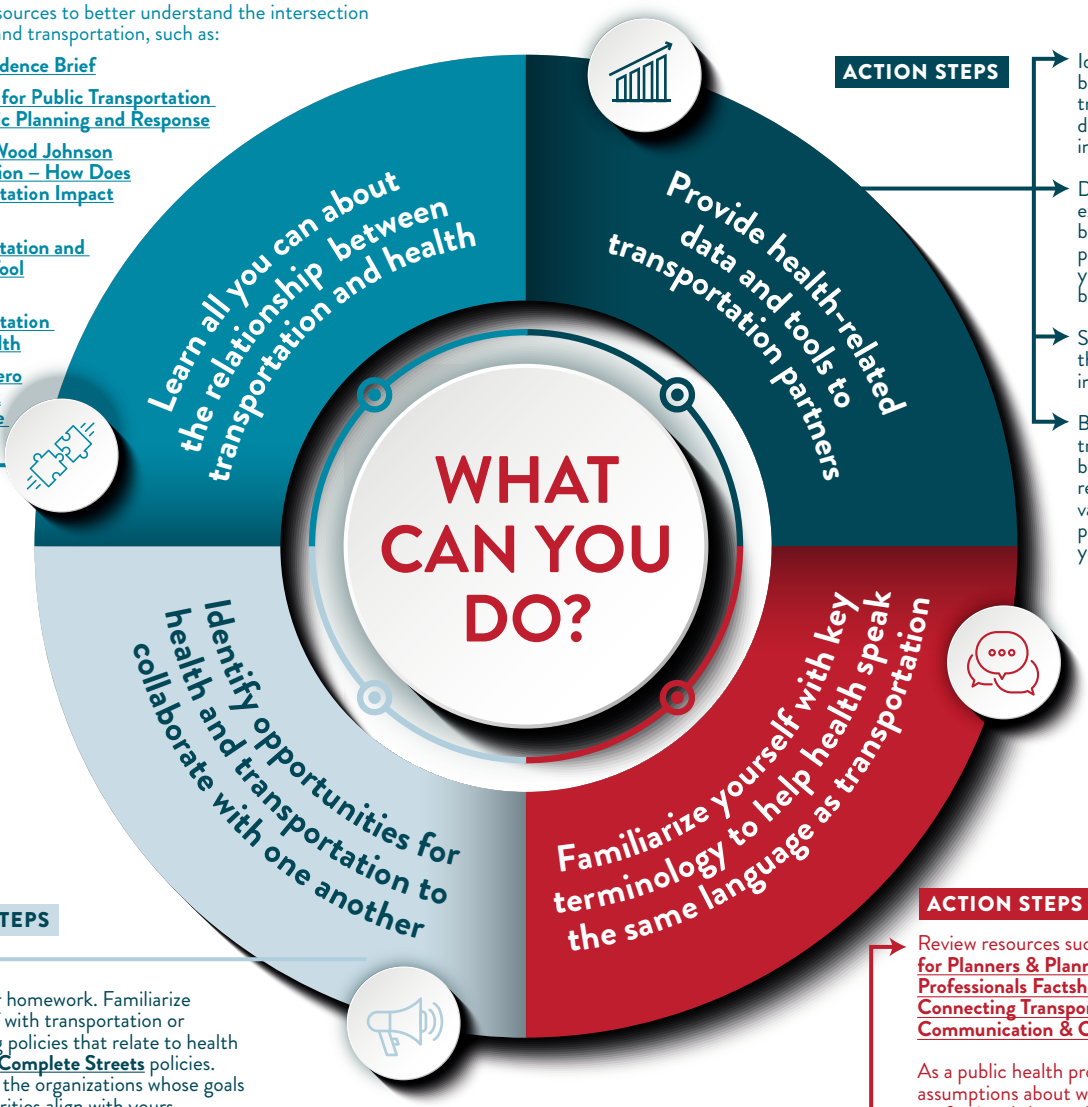
# Actions for Public Health Practitioners

Identify action steps you can take to increase access to public transportation in the communities you work with.




**ACTION STEP**

Review resources to better understand the intersection of health and transportation, such as:

- HI-5 Evidence Brief
- A Guide for Public Transportation Pandemic Planning and Response
- Robert Wood Johnson Foundation – How Does Transportation Impact Health?
- Transportation and Health Tool
- APHA Transportation and Health
- Vision Zero Network Resource Library

**ACTION STEPS**

- Identify data familiar to both sectors such as traffic-related injuries and discuss opportunities to intervene together.
- Determine how to translate existing public health data to be useful for transportation planning or identify what data you can collect in the future to benefit transportation partners.
- Share research that highlights the role transportation plays in health.
- Build relationships with transportation stakeholders by providing data and resources that may be valuable for addressing their priorities, such as GIS maps you have prepared.

**ACTION STEPS**

- Do your homework. Familiarize yourself with transportation or planning policies that relate to health such as **Complete Streets** policies. Identify the organizations whose goals and priorities align with yours.
- Look for shared priorities to collaborate on such as improving safety and air quality.
- Follow public transportation and public works agencies on social media and sign up for email notifications to stay up to date on their priorities.
- Attend transportation or planning conferences or invite potential partners to public health conferences and trainings to network.
- Attend transportation-focused community events to identify the transportation priorities and concerns of the people you serve, which can influence the type of transportation partners you reach out to.
- Bring together allies in the business community who may benefit from transportation improvements.
- See **Connecting Transportation & Health: A Guide to Communication & Collaboration** for more ideas to connect with transportation stakeholders in your area.

**ACTION STEPS**

- Review resources such as the **Public Health Terms for Planners & Planning Terms for Public Health Professionals Factsheet** and the key terms in **Connecting Transportation & Health: A Guide to Communication & Collaboration.**
- As a public health professional, don't make assumptions about what public transportation professionals know about public health and vice versa. Instead explain what public health is and how it may differ from sectors such as healthcare.
- Clarify terms that are used by both sectors but may have different meanings such as *environment*.
- Explain what you mean. Public transportation and public health often use different terms to describe similar underlying priorities and goals. For example:

**Public health uses *evidence* to create *interventions* that can increase health equity for target populations, leading to improvements in *social determinants of health*.**

**Public transportation uses *data* to build *projects* to increase *access* for *customers/riders*, leading to improvements in *quality of life*.**

# Appendix M. Context, Mechanism, and Thematic Overview across CWIs and Innovator States

## CONTEXT ACROSS CWIS AND INNOVATOR STATES

CONTEXTS

| | EITC Innovator States | | | | Transportation Innovator States | | | |
|---|---|---|---|---|---|---|---|---|
| | Calif | Louis | N Mex | Ohio | Mass | Mich | Oregon | Tenn |
| **Infrastructural** | | | | | | | | |
| Economic climate | ☆ | ☆ | ☆ | | ☆ | ☆ | ☆ | ☆ |
| Political environment | | ☆ | ☆ | ☆ | ☆ | ☆ | ☆ | |
| Regional (urban/rural) | | | | | ☆ | ☆ | ☆ | |
| Population shifts (sociodemographic) | | | | | | ☆ | ☆ | |
| **Institutional** | | | | | | | | |
| Active advocacy organization | | ☆ | ☆ | | ☆ | | | |
| Active policy center | ☆ | | ☆ | | | | | |
| Evidence generator | ☆ | | | | ☆ | ☆ | ☆ | ☆ |
| Historical institutional relationships | | | | | ☆ | ☆ | ☆ | ☆ |
| Government agency involvement | | | | | | ☆ | ☆ | ☆ |
| **Interpersonal** | | | | | | | | |
| Audience-specific communication | | | ☆ | | ☆ | | | ☆ |
| Legislative champions | ☆ | | ☆ | ☆ | | | ☆ | |
| Organized "evidence-builders" | | | | ☆ | ☆ | ☆ | ☆ | ☆ |
| Strong partnerships/coalition | ☆ | ☆ | ☆ | ☆ | ☆ | ☆ | ☆ | ☆ |
| **Individual** | | | | | | | | |
| Ability to identify decision makers and cultivate champions | ☆ | ☆ | ☆ | ☆ | ☆ | ☆ | ☆ | ☆ |
| Ability to motivate and convene appropriate stakeholders | | | | ☆ | ☆ | ☆ | ☆ | |
| Ability to recognize policy opportunities | ☆ | ☆ | ☆ | ☆ | ☆ | ☆ | ☆ | ☆ |
| Ability to take on multiple roles | | | | | ☆ | ☆ | ☆ | ☆ |
| Persistence, dedication, and perseverance | ☆ | ☆ | ☆ | ☆ | ☆ | ☆ | ☆ | ☆ |

*Table 1. Context across CWIs and Innovator States*

## MECHANISM AND THEMATIC OVERVIEW ACROSS CWIS AND INNOVATOR STATES

| | | EITC Innovator States | | | | Transportation Innovator States | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | Calif | Louis | N Mex | Ohio | Mass | Mich | Oregon | Tenn |
| MECHANISMS | Response to advocacy | ☆ | | ☆ | ☆ | ☆ | | | |
| | Response to competing priorities (tradeoffs) | | ☆ | ☆ | ☆ | ☆ | | | ☆ |
| | Response to competition for revenue | ☆ | | | | ☆ | | ☆ | ☆ |
| | Response to crisis | | | | | ☆ | ☆ | ☆ | |
| | Response to data and evidence | | | ☆ | ☆ | ☆ | ☆ | ☆ | ☆ |
| | Response to education | | ☆ | ☆ | ☆ | | | ☆ | ☆ |
| | Response to existing relationships | | ☆ | ☆ | ☆ | | ☆ | ☆ | ☆ |
| | Response to absence of relationships | | | | | ☆ | ☆ | | |
| | Response to partnership funding | | | ☆ | | | | | |
| | Response to partnership structure | | ☆ | | ☆ | | | | |
| | Response to political support | | ☆ | ☆ | ☆ | | | ☆ | ☆ |
| | Response to political opposition | | | | | ☆ | | | |
| | Response to regional/SDOH needs | | ☆ | ☆ | | ☆ | ☆ | ☆ | |
| | Response to relationship cultivation | | ☆ | | ☆ | ☆ | | ☆ | ☆ |
| THEMES | Community engagement | | | | | ☆ | ☆ | ☆ | ☆ |
| | Incremental approach | ☆ | | ☆ | ☆ | | | | |
| | Innovation / thinking outside the box | ☆ | | | | ☆ | ☆ | ☆ | ☆ |
| | Passage of time | | ☆ | ☆ | ☆ | | | | |
| | Relationship building / cross-sector partnerships | ☆ | | ☆ | | ☆ | ☆ | ☆ | |
| | Strategic use of evidence | | | ☆ | ☆ | ☆ | ☆ | ☆ | ☆ |
| | Shared values / unified vision | | ☆ | | ☆ | ☆ | ☆ | ☆ | ☆ |
| | Trade offs | | ☆ | | ☆ | ☆ | | ☆ | ☆ |
| | Windows of opportunity | ☆ | ☆ | ☆ | ☆ | ☆ | ☆ | ☆ | ☆ |

*Table 2. Mechanism and Thematic Overview across CWIs and Innovator States*