METROPOLITAN AREA TRANSPORTATION PLANNING FOR HEALTHY COMMUNITIES

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14. ABSTRACT

Based on research including four best practice studies, the report proposes a framework for Metropolitan Planning Organizations (MPOs) and partners to use to integrate health into metropolitan area transportation planning. The framework addresses both how MPOs can approach health as a direct, broadly-based goal for their interdisciplinary planning, and how they can consider health during all stages of the metropolitan area transportation planning process. The report identifies a "holistic" approach to health, including consideration of active transportation, safety, air pollution, and access to opportunities for healthy lifestyles. The report includes summaries of Federal and State regulations, policies, and funding programs; available technical tools; applicable research and reports; four MPO case studies and a broad scan of additional MPO examples; and a synthesis with observations. This research demonstrates that although each MPO may have a unique experience, approach, and set of actors involved in incorporating health into their planning activities, the planning processes, strategies, and challenges are very similar.

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This study and others in the series are posted on the FHWA-FTA Transportation Planning Capacity Building web-site (http://www.planning.dot.gov/).

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Executive Summary

Purpose and Background

The purpose of this white paper is to identify an integrated and flexible approach to how metropolitan planning organizations (MPOs) and their partners can successfully consider aspects of health during the transportation planning process. Based on research including four best practice studies, the white paper proposes a framework for MPOs and partners to use to integrate health into metropolitan area transportation planning. The report develops a comprehensive approach both to how MPOs can approach health as a direct, broadly-based goal for their interdisciplinary planning, and how they can consider health during all stages of the metropolitan area transportation planning process. The report identifies a "holistic" approach to health, including consideration of:

1. **Active transportation:** Transportation systems that encourage walking or bicycling can help people to increase their levels of physical activity, resulting in significant potential health benefits and disease prevention. Transportation planners can increase opportunities for active transportation by planning regional and local transportation systems that are safe, convenient, affordable, and attractive for system users.
2. **Safety:** The critical step for MPOs to move from traditional measures of reduced injuries and fatalities to a more holistic approach is to include safety as part of an overall goal for transportation plans and projects that lead to a "healthier community."
3. **Air pollution:** This paper focuses on transportation-related air pollution emissions and their impacts on human health, such as asthma or bronchitis, and transportation planning processes that consider improved air quality as part of a holistic approach to health, in addition to meeting Federal air quality requirements.
4. **Access to opportunities for healthy lifestyles:** Community design and transportation systems can support or inhibit residents in their pursuit of health-related activities. These activities may include access from residences and workplaces to: stores selling healthy food, medical offices, social service centers, and active recreation facilities. Access to health-related activities is especially critical for vulnerable and disadvantaged populations, such as the elderly and children, as well as designated Environmental Justice communities (specifically low-income and minority populations) with limited transportation options.

The report also includes summaries of: Federal and State regulations, policies, and funding programs that provide the foundation or context for MPOs nationwide to engage in health-related transportation planning; available technical tools; and applicable research and reports.

The four MPOs featured in the best practice studies produce visible and significant results through connecting transportation planning activities to health considerations. However, they differ in their sources of motivation, their focus on different aspects or stages of the planning process, and the steps they are taking to consider health. The research team incorporated insights from the case studies and other research to develop a four-part, flexible framework for

MPOs and partners nationwide to use to successfully incorporate health within metropolitan area transportation planning processes. The framework is summarized as follows:

1. **Motivation**: MPOs must identify an initial source of motivation for expanding traditional approaches to transportation planning to consider health. Motivations can include: political leadership, partner initiatives, community interest, local and State government initiatives, national priorities and programs, or research and analysis.
2. **Transportation planning process**: MPOs can formally integrate health at any stage in the transportation planning process -- regional vision and goals, development of twenty-year metropolitan transportation plans (MTP), development of a Transportation Improvement Program (TIP), and ongoing performance monitoring and reporting.
3. **Early actions** are outreach and communications activities that occur within the established MPO planning process. Over time, these actions can establish the relationships and support necessary for improved understanding of health-related activities that will allow MPO leadership to engage in more structural changes that can lead to the continuity essential to convert interest and ideas into decisions.
4. **Structural changes** in the on-going metropolitan area transportation planning process result in concrete, measurable, and institutionalized integration of health considerations into the core stages of the planning process. Examples include incorporating health into MTP goals, establishing standing committees for health topics, using health for TIP project screening or selection criteria, and developing and applying performance measures that capture and communicate the broad impacts of transportation plans, strategies, and investments on community health.

Case Studies

The white paper assesses how four MPOs are integrating consideration of public health benefits and impacts into on-going metropolitan area transportation planning and decision-making. The MPOs are the Nashville Area MPO in Tennessee, the Puget Sound Regional Council (PSRC) in the Seattle metropolitan area, the Sacramento Area Council of Governments (SACOG), and the San Diego Association of Governments (SANDAG). The project team selected the case study areas as part of a scan of MPOs considering different aspects of public health. The scan revealed that the MPOs are engaged in: establishing active transportation as part of the regional transportation system; the application of health impact assessments, or similar assessment; analysis of options for access to food; and programs to support aging in place. The identified MPOs frequently include health-related goals in their MTPs; receive Federal grants to study health; or analyze health impacts of transportation projects.

The four best practice MPOs are leaders in: institution of health considerations in transportation plans and programs; supporting active staff roles in health activities; and participation in health-related partnerships and grants. Each of the case studies outlines the background and structure of the MPO, motivations for its transportation and health activities, and the health-related focus areas for the MPO, including how the MPO defines the relationship between transportation and health. The case studies summarize and provide links to plans, studies, and programs that have resulted from planning activities and describe the

roles of partner organizations in these initiatives. Finally, each case study summarizes the MPO's evolution in integrating health within transportation, with a timeline of health-related activities, and identifies observations, challenges, and a focus on future evolution.

Conclusion

The four case studies and the broad scan of additional MPO examples demonstrate that although each MPO may have a unique experience, approach, and set of actors involved in incorporating health in their planning activities, the planning processes, strategies, and challenges are very similar. The case studies identify cross-cutting themes including:

- MPOs form partnerships with local or State organizations with health-related missions, in some cases leading to later establishment of formal roles and responsibilities such as membership in MPO committees.
- All of the case study MPOs are developing internal capacity to conduct quantitative assessment of health benefits of transportation plans and projects, and are providing training and tools to community members, including those with responsibility for land use decisions.
- The MPOs emphasize the importance of building support from their boards and the community for the incorporation of health into MPO planning and activities.
- All of the case study participants have made substantial progress through an incremental approach. This helps build interest and support within the MPO staff and Board as well as with metropolitan stakeholders for health to be added as a priority without adversely affecting pursuit of core transportation goals.

Chapter 1: Introduction and Overview

Public health and transportation practitioners are increasingly recognizing the relationship between the built environment and the physical, social, and mental health of communities. As one important component of the built environment, transportation has a significant influence on physical activity and well-being, safety, and the ability of community members to access destinations that are essential to a healthy lifestyle. Metropolitan Planning Organizations (MPOs) have the responsibility to work collaboratively with their partners to plan multimodal transportation systems within their metropolitan planning areas (MPAs). This responsibility presents tremendous opportunities to capitalize upon established and emerging linkages between transportation and public health. The Federal Highway Administration (FHWA), in its efforts to offer technical assistance to MPO planners and partners, is examining how MPOs throughout the United States can effectively consider the health impacts and benefits of transportation projects to help achieve healthy communities.

Purpose

The purpose of this white paper is to identify an integrated and flexible approach to how MPOs and their partners can consider aspects of health during the transportation planning process. In addressing this purpose, the U.S. Department of Transportation (USDOT) Volpe National Transportation Systems Center (Volpe Center) developed a framework for how MPOs and partners can successfully approach health within metropolitan area transportation planning. Applying research from case studies of four MPOs, the white paper provides this framework on how to approach successful consideration of health, focusing on a "holistic" or comprehensive approach to health integrated into key points in the MPO planning process. Other products from this white paper include the identification of innovations, successes, challenges, and lessons learned that can serve as a resource for MPOs across the country.

The audience for the white paper is MPOs and their partners, nationwide, who are interested in incorporating direct and substantial consideration of public health into their transportation planning and decisions. The case studies contribute to an expanded understanding of successful approaches that MPOs and their transportation and health partners might take. The white paper is also a resource guide for MPOs and their partners, and for FHWA to use in developing technical assistance.

A Holistic Approach to Transportation and Public Health

In examining the implications of metropolitan area transportation planning for healthy communities, this white paper takes a specific focus on planning for transportation and related community design with explicit consideration of health-related impacts. The project team defines a holistic approach that MPOs might take to consider community health across the broad set of health topics identified above. This report considers both how MPOs can approach

health as an explicit and direct goal for their broad, interdisciplinary planning, and how they can consider health during all stages of the metropolitan area transportation planning process. The white paper research examines how MPOs can consider health in planning for the regional multimodal transportation system through collaboration with traditional and non-traditional partners, refinement of institutional roles and responsibilities, and technical analysis.

The research assesses how MPOs are applying this approach to ensure that transportation policies, strategies, and investments contribute to community health. MPOs with such a holistic approach would explicitly and directly identify health as a long range regional goal for transportation, going beyond related goals that are universally considered by MPOs, such as safety and air quality. The MPOs in the case studies are distinguished from their peers in that they go beyond consideration of safety as a core transportation topic and air quality as a Federal requirement to reduce emissions. Instead, these MPOs consider these topics alongside others with health implications, such as physical activity or access to health-related destinations. This broader approach adds healthy communities to the purpose of transportation planning and investments, and to the mission of the MPO and its partners.

The holistic approach to health for transportation planning involved consideration of the following areas:

1. **Active transportation**

   Transportation systems that encourage walking or bicycling can help people to increase physical activity, resulting in significant potential health benefits and disease prevention. Transportation planners can increase opportunities for nonmotorized or "active" transportation by planning for infrastructure that is safe, convenient, and attractive to transportation system users. They can also plan for highway and transit modes that have strong intermodal connections to active transportation to encourage the use of multiple modes. Although the link between activity and related illnesses (such as obesity, diabetes, and heart disease) is important to an MPO focus on physical activity, MPO planners can focus on measures of transportation-related outcomes, such as increases in nonmotorized mode share or minutes spent walking or bicycling. The public health partners of MPOs can then use these transportation measures in further technical analysis of medical outcomes, such as levels of obesity or to calculate changes in community-level morbidity (disease) or mortality (death), for example, using the Health Economic Assessment Tool.[1]

2. **Safety**

   Users of all modes of transportation should be safe with minimal risks of injury or fatality. Injuries related to vehicle crashes are one of the most significant and immediate threats to human safety. Planners can ensure that safety measures extend to all transportation modes, and to intermodal connections, so that all system users can benefit from a safe transportation system. Planners can also focus on protecting vulnerable road users,

[1] World Health Organization, Health Economic Assessment Tool (HEAT) for walking and cycling.

including older and younger residents who rely on walking or bicycling. The critical step for MPOs to move from traditional consideration of injury and fatality measures to a more holistic approach to health is the inclusion of safety goals in combination with the other broad community health considerations.

3. Air pollution, with specific implications for human health

Under the Clean Air Act Amendments (CAAA) of 1990,[2] the U. S. Environmental Protection Agency (EPA) has established standards for transportation-related pollutants: ground level ozone formed by volatile organic compounds and oxides of nitrogen, the primary ingredients of smog; carbon monoxide; particulate matter; and nitrogen dioxide. The standards are based upon EPA's assessment of the health risks associated with each pollutant on at-risk groups, including "children, the elderly, persons with respiratory illnesses, and even healthy people who exercise outdoors."[3]

Transportation conformity ensures that Federal funding and approval goes to those transportation activities that are consistent with air quality goals. Conformity applies to transportation plans, transportation improvement programs (TIPs), and projects funded or approved by the FHWA or the Federal Transit Administration (FTA) in areas that do not meet or previously have not met the air quality standards in areas known as "nonattainment" or "maintenance" areas.[4]

Although MPOs have well-established planning procedures to meet conformity requirements, MPOs that take the comprehensive approach described in this paper might go further to explicitly recognize that transportation plans and decisions produce air quality outcomes that have health implications and consequently, that air quality is an important component of transportation planning for healthy communities. An MPO's public health partners might use air quality and transportation data as inputs into health-specific analysis of local health impacts.

4. Access to opportunities for healthy lifestyles

Community design and transportation systems can support or inhibit residents in their pursuit of health-related activities. These activities may include access from neighborhoods and places of employment to stores or markets selling healthy food, medical offices, social service centers, and parks and active recreation facilities.

Access to health-related activities is especially critical for vulnerable populations, such as the elderly and children, as well as designated Environmental Justice communities (specifically low-income and minority populations). These populations often have low car

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[2] Clean Air Act Amendment 42 USC §85. Accessed 6 June 2012: http://www.gpo.gov/fdsys/pkg/USCODE-2008-title42/pdf/USCODE-2008-title42-chap85.pdf.

[3] FHWA, "Transportation Conformity: A Basic Guide for State and Local Officials, Appendix A: Health Effects of Pollutants." http://www.fhwa.dot.gov/environment/air_quality/conformity/guide/guide12.cfm

[4] FHWA, "Transportation Conformity: A Basic Guide for State and Local Officials, Appendix A: Health Effects of Pollutants." http://www.fhwa.dot.gov/environment/air_quality/conformity/guide/guide12.cfm

ownership or high transit dependency, which planners must consider to target resources and develop transportation systems that assist these groups to access healthy destinations.

Community design integrated with transportation can also help people to age safely in place, or to safely access all of their nutrition, exercise, and medical needs throughout each lifecycle stage. This aspect considers changing mobility, health needs, safety, and the contribution of multi-modal transportation systems to offering a broad range of affordable transportation and housing options.

The white paper focuses on approaches to metropolitan area transportation planning that consider the topics explicitly and in combination, but does not include technical analyses of these topics individually, which would be beyond the scope of this white paper. The paper applies these topics in combination to consider how MPOs and their partners can collaborate in transportation planning to accomplish health-related goals, introducing a new explicit emphasis on community health for the metropolitan area's transportation planning and system.

Methodology

As part of the goal of providing a technical resource for MPOs and partners, the report researches and summarizes relevant policies, regulations, literature, and technical tools to identify opportunities for integrating health considerations within MPO transportation planning. Using these regulations and policies as a foundation, the project team establishes a hypothetical framework for MPOs to incorporate health into the metropolitan planning process. The project team then tests and refines the framework by applying it to case studies of a range of MPOs to identify actual experiences in metropolitan area transportation planning.

The project team considered 12 MPOs that are leaders in linking health and transportation and selected the following four MPOs as case studies for this white paper: Nashville Area MPO; the Puget Sound Regional Council, responsible for the Seattle metropolitan area; the Sacramento Area Council of Governments; and the San Diego Association of Governments. The four case studies showcase innovative MPOs that demonstrate success at broadly and holistically considering public health in the metropolitan area transportation planning process. Their selection is on the basis of a history of transportation and health activities, institutionalization of activities into transportation plans and programs, leadership of MPO staff, receipt of health-related grants, and relationships with partners. Additional details on criteria for scanning and selecting MPOs are included in Chapter 3: Case Studies.

The project team conducted structured discussions (see Appendix B: Sample MPO Discussion Questions) by telephone for each case study with one or more MPO staff, generally the Executive Directors and Planning Directors. In some cases, the project team also conducted discussions with the MPO's health-related partners. The project team also reviewed relevant plans, studies, and assessments from each MPO to inform the case studies.

Structure

The white paper starts with an overview of actors and roles relevant to metropolitan area transportation planning and consideration of health. The white paper then provides context for linking transportation and health, including current transportation regulations, policy initiatives by the Federal government and national non-governmental organizations (NGOs) and data and tools. The project team provides each of these analyses as a resource for peer MPOs to demonstrate how required planning activities and roles provide flexibility and opportunities that support substantive integration of health into the metropolitan planning process. The following sections contain the MPO planning framework for considering public health, a synthesis of lessons and findings from analysis of the MPO planning processes featured in the case studies, and the four case studies themselves. The white paper concludes with implications and future research opportunities. All findings are drawn from research for this white paper, and in particular from the case studies.

Chapter 2: Context

The information in this chapter provides an important context or "starting point" for examining the case study Metropolitan Planning Organizations (MPOs) and also provides a resource for peer MPOs and partners interested in expanding how public health is considered in the metropolitan area transportation planning process. The context is also useful for U. S. Department of Transportation (USDOT) staff working with MPOs and their transportation and public health partners on a broad range of regulatory, grant, technical assistance and research programs. Many of the programs, processes, and actors detailed in this chapter are also identified as important elements in the case studies. The other programs described present opportunities for supporting future efforts to bring health considerations into the metropolitan area transportation planning process nationwide.

This chapter also outlines the Federal transportation planning requirements, focusing on opportunities and flexibilities for MPOs to pursue health-related activities. The elements of the Federal planning framework described in this report continue under reauthorization of the Federal surface transportation law, Moving Ahead for Progress in the 21st Century Act (MAP-21), signed by the President on July 6, 2012. At the time this report was completed, the USDOT had not issued guidance to implement new planning requirements arising from MAP-21. This chapter references MAP-21 to identify changes to programs that may be relevant to integrating health into transportation planning.

Key Actors and Roles

This section describes and discusses the broad range of roles and responsibilities played by agencies involved in consideration of public health in the metropolitan area transportation planning process, including MPOs and their partners, the USDOT agencies that provide oversight of Federal transportation planning processes and manage related programs, and other Federal and State agencies. It is intended to provide a resource for peer MPOs and their partners interested in bringing public health considerations into their transportation planning processes, and to provide insights into the potential for these institutions to play supportive roles in encouraging consideration of health in the future.

The Federal transportation planning requirements authorized under the Safe, Accountable, Flexible Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU), and continued under MAP-21, establish a broad framework with roles and responsibilities for MPOs. MPOs are responsible for conducting transportation planning for the almost 500 Census-defined urbanized areas with populations over 50,000. An MPO's collaborative roles include conducting a continuing, cooperative, and comprehensive ("3-C") planning process for metropolitan-wide multimodal transportation systems. The defined process includes strategic planning, as reflected in the vision plans and required long range plans, financial planning, programming of funds in Transportation Improvement Programs (TIPs), public participation, and a broad range of other collaborative and technical activities. U.S. DOT designates as Transportation Management Areas (TMAs) the urbanized areas with populations over 200,000; MPOs that plan

for TMAs have additional planning and programmatic responsibilities under Federal regulations and receive a certification review by FHWA and FTA to ensure that the planning requirements of 23 U.S.C. §134 and §49 U.S.C. 5303 are being satisfactorily implemented.[5]

The Federal requirements set a broad and consistent framework for all MPO and partner roles that are then adapted and expanded to respond to additional regulations, policies, needs and priorities that can be defined at State, regional or local levels. The end result is that there is consistency and flexibility in the roles MPOs and partners play nationally in determining whether and how to consider public health in on-going metropolitan area transportation planning. There is an important contrast between relationships related to air quality between MPOs and State Departments of Transportation (DOTs) or air quality agencies (in nonattainment areas), which are formally defined, and the relationship between MPOs and State or county public health or human service agencies. Public health agencies and other health stakeholders do not have a formally defined role in the Federal transportation planning requirements. Although the decision by MPOs to collaborate with public health agencies may be required or otherwise encouraged by States or local governments, it is more likely that the collaboration that characterizes the four case studies in this report is a matter of choice among participating agencies to meet locally determined goals, needs, and priorities.

> Federal requirements for metropolitan area and statewide transportation planning provide a helpful and flexible foundation that MPOs and partners can adapt to respond to local requirements, policies, goals, priorities, and choices to consider public health.

The case studies highlight the roles and responsibilities that the MPO and its transportation and public health partners have developed for planning and governance to bring public health into the on-going metropolitan area transportation planning process. In all cases, this involves adaptation of the Federal planning requirements to plan for healthy communities -- an emerging local priority -- in addition to meeting a broad range of other transportation goals, from maintaining infrastructure, improving safety, and reducing traffic congestion to meeting future mobility needs.

This section briefly outlines the roles of the players in transportation planning for healthy communities, considering both requirements and opportunities in the planning regulations.

Federal Agencies

Federal agencies have several opportunities to support regional interest in consideration of public health, within the current Federal regulatory and programmatic frameworks.

[5] 23 USC §134(k) and "Transportation Management Area Planning Certification Primer."

FHWA and FTA

Role: The Federal Highway Administration (FHWA) and the Federal Transit Administration (FTA) have oversight responsibility to ensure that metropolitan area and statewide transportation planning and expenditure of Federal transportation funds meet Federal transportation planning and other Federal and State requirements. FTA and FHWA also offer technical assistance, program guidance, and training, and support research on a broad range of transportation topics.

Considerations: FHWA and FTA have offered limited technical assistance dealing directly with broadly-based public health considerations of transportation plans and decisions. This includes the national experts' workshop on transportation planning and health[6] and a companion annotated bibliography[7] developed by the Volpe Center for the FHWA-FTA Transportation Planning Capacity Building program, as well as this report and a forthcoming companion report on public health considerations in statewide transportation planning. FHWA and FTA provide extensive technical assistance to MPOs, DOTs, and public transit agencies in health-related areas of safety, air quality management, and access for disabled and underserved populations. Although these topics have implications for health and are part of the comprehensive or holistic approach to healthy communities defined for this report, they have not typically been identified as directly "health related."

FHWA and the Volpe Center have collaborated closely with CDC on the evaluation of the SAFETEA-LU Nonmotorized Pilot Program that invested approximately $100 million in four pilot communities to demonstrate and report to Congress on the potential for shifts to active transportation and a range of outcomes, including public health.[8]

Opportunities: FHWA and FTA could create new technical assistance capacities or guidance to encourage and support planning for healthy communities. FHWA can also take a lead role in fostering partnerships with other Federal agencies to encourage and support collaboration by their State and local grantees or other constituents for Federal programs. The Partnership for Sustainable Communities fosters exactly this type of cross-Federal, State, Regional, and local collaboration. A similar type of effort could be encouraged, perhaps related to this Partnership, or formally or informally, through a direct relationship between USDOT offices and Federal agencies with health-related programs, including the Department of Health and Human Service, particularly the U.S. Centers for Disease Control (CDC), the U.S. Department of Agriculture (USDA), and the EPA, to help transportation agencies expand their capacity to plan and invest in transportation that contributes to healthy communities.

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[6] "Integrating Health and Physical Activity Goals Into Transportation Planning: Building the Capacity of Planners and Practitioners: Proceedings of the Portland Roundtable," FHWA, FTA, and USDOT/Volpe Center, January 2004.
[7] "Annotated Bibliography on Health and Physical Activity in Transportation Planning," USOT/Volpe Center, April 2004. http://www.planning.dot.gov/Documents/Health/Bibliography.htm.
[8] "Report to the U.S. Congress on the Outcomes of the Nonmotorized Transportation Pilot Program SAFETEA-LU Section 1807," FHWA with Assistance from USDOT/Volpe Center, April 2012 http://www.fhwa.dot.gov/environment/bicycle_pedestrian/ntpp/2012_report/

U.S. Centers for Disease Control and Prevention

Role: The Federal requirements for the metropolitan area and statewide transportation planning processes do not describe a formal role for CDC similar to those identified for coordination between other Federal, State, or local transportation agencies. Through the National Center for Environmental Health, CDC manages a Healthy Community Design Initiative (see U.S. Department of Health and Human Services: Centers for Disease Control and Prevention) to consider health-related strategies in planning, transportation, and land-use decisions. The initiative targets local governments and non-governmental organizations (NGOs) and provides education on tools, such as Health Impact Assessments (HIAs), promotes connections between health and community design and conducts related research, and works with communities to build partnerships between transportation, land use, and public health stakeholders**.** CDC has provided several grant programs to communities at the local government level for public health through community prevention programs, including Communities Putting Prevention to Work and Community Transformation Grants / Healthy Communities Program. The Federal Programs, Initiatives, and Funding Sources section contains links and more details on these grant programs.

Considerations: There is no formally established relationship between MPOs, DOTs and the CDC concerning transportation and related land use planning. Many MPOs may be unaware of related research, funding, and other programmatic initiatives.

Opportunities: Through the Healthy Community Design Initiative, local government prevention grants, research grants, and other partnerships through local or State health agencies, CDC has started partnering with or directly supporting the health-related activities of MPOs. The case studies in this report showcase several successful examples. CDC's research and tools can also be valuable for MPOs interested in planning for healthy communities.[9]

Federal Resource, Regulatory, Tribal, and Land Management Agencies

Role: Federal resource, regulatory, tribal, and land management agencies comment through the National Environmental Policy Act (NEPA) process for individual transportation projects and consult with MPOs and States regarding environmental impacts of transportation projects.[10] The Regulatory and Programmatic Framework section contains greater detail on NEPA and its health implications. Land management agencies and Tribes manage and plan for transportation projects within or impacting their jurisdictions. The EPA is responsible for ensuring that States and regions produce plans that meet the air quality standards of the Clean Air Act Amendments (CAAA) and are making required progress toward attainment of clean air standards (see below).

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[9] Centers for Disease Control. 2011. CDC Transportation Recommendations. Accessed 23 August 2011: http://www.cdc.gov/transportation/recommendation.htm.

10 The SAFETEA-LU Environmental Review Process Final Guidance, November 15, 2006, defines the role of Lead Agencies, Participating Agencies, and Cooperating Agencies (which include these tribes, resource agencies, etc.). http://www.fhwa.dot.gov/hep/section6002/1.htm#Toc148770570

Consultation with resource agencies for environmental mitigation includes development of agreements, assessment of impacts of plans and projects, planning for air quality and Environmental Justice, and smart growth and community design.

Considerations: Resource agencies often are involved in transportation planning at specific stages or for individual project components that would impact their area of jurisdiction. This may limit the holistic consideration of overall human health impacts. Also, many resource agencies focus on specific natural resources, such as wetlands and watersheds, although most agencies have programs that connect these resources with human well-being and quality of life. Many MPOs do not have Federal Lands or Tribal reservations that fall within the MPO's Metropolitan Planning Area (MPA), or they may not have relationships with Federal agencies that already consider human health impacts.

Opportunities: Several Federal resource and regulatory agencies have incorporated the protection of human health and well-being into their missions and have established programs in related areas such as disease prevention, Environmental Justice, and smart growth and community design for active transportation and access. Federal land agencies have participated in initiatives such as Let's Move Outside and America's Great Outdoors. These consider the health benefits of active transportation and access to public spaces. The National Park Service has a public health program that is beginning to consider transportation impacts, and the U.S. Fish and Wildlife Service and other land management agencies are also considering transportation and health intersections. All of these agencies may have capacity and resources for considering health impacts of infrastructure projects, which may be transferrable to MPO-scale planning. The sections above provide additional descriptions of these activities, including those of HUD, EPA, and the USDA.

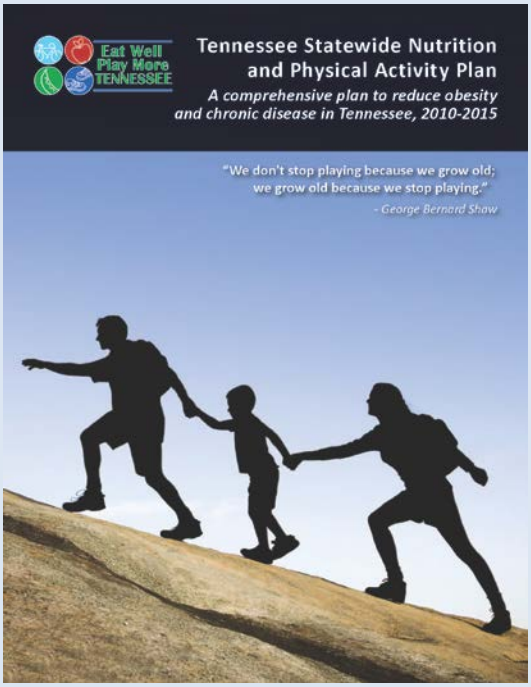
State Agencies

State Departments of Transportation

Role: State DOTs are responsible for planning, programming, and project implementation for transportation within their State, and for meeting the joint Federal transportation planning requirements. State DOTs also often take responsibility for the design, construction, operation, or maintenance of highway and other State multimodal transportation facilities, and they are responsible for project selection authority outside of metropolitan areas. State DOTs prepare Statewide Long-Range Transportation Plans (SLRTP), which typically provide policy directions for the statewide multimodal transportation system, and Statewide Transportation Improvement Programs (STIPs), which are designed to advance progress toward achieving the State's goals. SLRTPs and STIPs incorporate metropolitan area plans and TIPs developed at the MPO level.

Considerations: There is no Federally defined responsibility for State DOTs to include broadly based public health in their transportation plans, programs, or projects. In comparison, SAFETEA-LU—and now MAP-21—does require MPOs and DOTs to consider a series of "planning factors," including: economic vitality, safety, and energy conservation, and overall quality of life

Market in Boulder, Colorado. Source: www.pedbikeimages.org / Austin Brown



Tennessee Statewide Nutrition and Physical Activity Plan. Source: Eat Well, Play More Tennessee

There are multiple key actors involved in considering public health in the metropolitan area transportation planning process.

(see the Planning Factors section). Many health and transportation issues, such as opportunities for active transportation and access to healthy food, are most typically addressed through policies, programs, or projects initiated at the local or regional level. However, as demonstrated in some of the case studies, this can also be supported through State initiatives such as that described in the Nashville Area MPO example.

Opportunities: State DOTs have the flexibility to choose to bring broadly based health-related policy initiatives or programs into the transportation planning process, including through their SLRTP or public involvement processes. In cases where health issues have gained notice at the State level, DOTs may play leadership roles working with other State agencies; for example, responding to directions from a governor or State legislature to bring health into transportation programs. This report provides examples of this State-level direction.

Also, to support coordination between multiple MPOs, DOTs can help to link health issues, data, and innovative programs occurring throughout the State. Through their responsibility for transportation planning in non-metropolitan areas, DOTs can encourage rural areas to develop transportation strategies that support healthy communities, for example, through access to medical care or other human services. Finally, DOTs may have the ability through their respective State Planning and Research Program to offer research support or technical assistance to MPOs, regional planning agencies, local governments, or others who are working to connect health and transportation.

Other State Agencies

Role: In addition to DOTs, other State agencies may have active roles in the development of SLRTPs or individual project selection for STIPs; these may include natural resource, wildlife, parks, and air quality agencies. Many DOTs receive policy directives or goals from the governor's office or through formal or informal collaboration with State departments, for example, through incorporation of statewide economic and demographic forecasts in transportation plans. However, most State agencies have no formal or required role in transportation planning. While they may not have formal roles in statewide transportation planning, State health or human service departments oversee many areas related to health and transportation, and can offer resources and technical assistance to individuals, communities, or municipalities.

Opportunities: States with policy momentum to connect health and transportation may have greater involvement from State agencies in the transportation planning process, whether through collaboration and cooperation, or formal regulations and policies. These State agencies may be interested in participating as stakeholders in the statewide or metropolitan planning processes, such as through serving on advisory committees or commenting upon plans and programs. The case studies describe the importance of a broad range of involvement by State agencies, providing funds or other resources, and policy guidance to MPOs working on transportation and health. They can also serve as a bridge to link MPOs with health advocates and agencies at the regional level. State health agencies may be able to identify the most pressing health issues at the State level and opportunities for transportation strategies to address these issues. State agencies can offer high-level support and assistance for MPOs on

health projects. For example, parks and recreation agencies can be important partners for MPOs on active transportation, and State education departments can help with Safe Routes to Schools initiatives.

Regional and Local Agencies

Metropolitan Planning Organizations

Role: For purposes of this summary, MPOs form the primary unit for transportation planning at the regional level. Each urbanized area with a population of more than 50,000 people is required to designate an MPO. MPO policy boards consist of local elected officials, and often, officials of public transportation agencies, and State transportation officials.[11] MPOs plan within an MPA, which must contain the urbanized area and all contiguous areas likely to become urbanized over the next 20 years.[12] The MPA boundaries may also encompass larger nonattainment or maintenance boundaries for air quality conformity purposes.

Considerations: Some transportation and health issues are best addressed at the local level, considering the specialized needs and destinations at the community scale, as well as the common role of cities and counties in planning for land use and managing pedestrian and bicycling facilities. MPOs may not be equipped to develop detailed local community transportation plans, but they may often offer technical assistance or partner with local governments and community groups to create plans for corridors or activity centers and work with individual local areas to ensure collaboration and coordination. MPOs may also help local governments and community groups to advance individual communities' goals, those shared among communities, or those that might also support agreed-upon broader regional goals.

Many MPOs work closely with community groups to address transportation issues to produce favorable social, economic, and environmental impacts. MPOs could invite public health officials to participate in technical committees or serve as non-voting members on technical advisory boards or on public involvement committees. However, public health officials often work for municipal or county governments and may be difficult to involve in a metropolitan area transportation planning process, particularly if there are a number of jurisdictions within the area, or if it is particularly large in terms of population or geographic area.

Opportunities: The metropolitan scale provides MPOs with several opportunities to consider and address transportation and health issues in areas such as:

- Intermodal connectivity;
- Identification of and access to major regional activity centers and/or medical centers;

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[11] 23 USC §134(d) Under MAP-21, MPOs serving TMA areas shall include public agencies that operate major modes of transportation including public transportation and appropriate State officials.

[12] 23 USC §134(e)

- Coordinated safety planning;
- Regional plans for nonmotorized trails, sidewalks, and bicycle lanes; and
- Planning for transportation facilities with minimal impacts on Environmental Justice populations.

Furthermore, MPAs often align with the boundaries of regional planning associations (RPAs) or Councils of Government (COGs), and MPOs often have formal institutional relationships with these organizations (e.g., a COG might serve as the MPO for a metropolitan area). These organizations often have responsibilities for land use, active recreation, housing, and other public health-related issues. The integration of transportation systems with other planning components can support the creation of communities with accessible, healthy destinations. MPOs are often well-situated to coordinate with RPAs or COGs, or their member cities and counties, on these issues and to partner with public health officials on integrated regional health plans. Finally, MPO board members who are local elected officials can identify and communicate local needs for enhanced safety, access to healthy destinations, or physical activities within their communities, including as part of a regional network. The MPO can then identify broad regional needs or specific projects that might address multiple local needs for healthy communities. For example, despite local responsibility for land use and leadership on many health issues, health related transportation frequently crosses local jurisdictions (such as with walking or bicycling, transit connections, access to medical offices, and sales of healthy food).

Public Health Agencies

Role: There is no explicit mention of a role for county or city public health agencies as part of the Federal transportation planning framework. These agencies could participate as general stakeholders or local government agencies to be consulted during the long-range planning process, or their clients might participate through the public involvement process required for DOTs and MPOs.

Considerations: Without requirements for or mention of public health agencies in the planning regulations, MPOs may not consider or engage public health agencies without a specific motivation or unless the public health agencies themselves express direct interest in participating, whether through technical committees or public involvement processes. Also, some MPOs may not have active public health agencies within their regions, or the public health agencies may not be aware of the benefits of participating in transportation planning. Participation may be limited by lack of technical capacity or of staff availability relative to other, more established responsibilities.

Opportunities: Several MPOs have effectively engaged public health agencies with a formal role in the planning process, as demonstrated in the case studies. Public health representatives have informed active transportation planning, provided data, served on advisory committees, and offered guidance for projects and programs. One of the Federally-required planning factors[13]

[13] 23 USC §134(h) and 135(d)

(explained in more detail later in this report) encourages MPOs to consider quality of life and intersections with local planned growth; public health agencies may be able to offer a unique perspective, directly related to the holistic approach to public health identified in this report. Public health officials may also help MPO staff to develop planning strategies and programming that can best promote health benefits of transportation. This can be a co-benefit alongside other established transportation goals, including:

- Improved mobility from a balanced transportation system that includes nonmotorized travel, including with links to transit.
- Ensuring that transportation plans and projects meet of Title VI of the Civil Rights Act and the Executive Order on Environmental Justice.

Public health agencies can play important roles in extending the capacity of MPO staff and technical processes to consider health and related areas such as those described.

Certainly the inverse is true as well; transportation planning agencies can assist public health agencies to include important transportation considerations in community public health plans, programs and investments. For example, the location of medical facilities might consider access for all, regardless of whether patients or staff has access to an automobile.

Local Governments

Role: Municipal and county governments submit projects for consideration in the MTP or the TIP, and they may also be the implementing agency for capital projects on local roads. Elected officials from local governments, or their designated representatives, generally form the majority of the Executive or Policy Boards of MPOs; these officials are responsible for approving the long range plan, planning work program, public involvement process, and making the project selection decisions reflected in the TIP. Local governments also maintain land use jurisdiction within their municipal borders; they plan for and govern future development, and make decisions of coordination with neighboring jurisdictions as well as with the larger region.

Considerations: Local governments may not recognize or focus on the connections between transportation and health, among their multiple responsibilities. They may also be reluctant or politically unable to change complex and established current land use policies.

Opportunities: Many of the priority strategies to connect transportation and public health are closely tied with local land use practices. Connections between neighborhoods, to active transportation infrastructure, and to medical destinations and healthy food must occur at the local level and can be greatly facilitated (or limited) by policies from local governments. Local governments can therefore be a critical partner in long-term planning for transportation infrastructure that is compatible with planned land uses. Local governments can also institute programs as partners with the MPO, such as Safe Routes to Schools and programs that encourage physical activity. Flexibility in Federal transportation funding sources can support compatible local and regional preferences.

Local governments can greatly enhance MPO capabilities by encouraging certain types of new development, such as nonmotorized infrastructure attached to new neighborhoods or grocery stores or medical services in underserved areas or near existing transit or trails.

Non-Profits, Advocacy, and Other Non-Governmental Organizations

Role: Non-profit, advocacy, and other NGOs include groups and organizations formally or informally organized around neighborhoods, Environmental Justice issues, modal interests, or health topics. The transportation planning framework provides opportunities for these groups to participate in the development of MTPs, TIPs, SLRTPs, and STIPs, as well as other planning activities of the MPOs and DOTs. MPOs and their partners must plan for and mitigate adverse environmental impacts upon Environmental Justice communities, which generally involve consultation with community representatives.

Considerations: Many health-related NGOs have not traditionally formed relationships with MPOs, nor are they required to participate in the transportation planning process. However, the mutual benefits of partnerships between NGOs and MPOs, as evidenced through the case studies in this report, provide incentives for these organizations to participate in transportation planning. NGOs or other community groups with an interest in both health and transportation could include nonmotorized advocacy groups, parent organizations at schools, medical associations, or groups representing transit dependent neighborhoods.

Opportunities: Local organizations may have the best understanding of the impacts of transportation projects upon health in their communities. MPOs can work with representatives of local NGOs and other groups to identify and measure the potential health-related costs and outcomes of proposed transportation plans and projects. Local NGOs are also valuable partners for collecting data, tracking the impacts of transportation projects, and educating the public about how to use new and existing transportation systems to achieve the most public health benefits.

At a broader scale, many State and national non-profit and advocacy organizations have established research and education programs that connect transportation with public health. These organizations can help MPOs gain support for planning for healthy communities. Some organizations may also provide funding or technical assistance for transportation and health programs, assessments of transportation projects for health impacts, or studies to track health benefits of transportation plans over time (see NGO Advocacy, Research, and Programs). The case studies describe the important contributions this broad category of organizations can make to transportation planning for healthy communities.

Regulatory and Programmatic Framework

The Federal framework for metropolitan area transportation planning, as defined in SAFETEA-LU and the joint transportation planning requirements and continued under MAP-21, includes important elements that can support efforts by MPOs and their partners to include consideration of public health. Although there are no formal requirements that MPOs and their partners consider public health directly, the Federal planning framework includes numerous elements that support MPOs that decide to consider public health in metropolitan area transportation planning. The key elements of the planning process, as described in this section,

continue under MAP-21. This section is intended to provide a context and cross-reference to the Federal transportation planning framework to assist MPOs interested in expanding how they consider health. Although the USDOT had not updated planning requirements to reflect MAP-21 changes at the time of this report, this section references specific sections of MAP-21 that may be relevant to consideration of public health in metropolitan area transportation planning.

This section also provides examples of important recent State regulations pertaining to adaptation of metropolitan area transportation planning to consider health. The Federal and State regulations provide significant potential support and flexibility for MPOs interested in planning transportation systems, programs, and projects with benefits for public health.

Metropolitan Area Transportation Planning Products

Metropolitan Transportation Plan

Existing Framework: Under the Federal planning requirements, MPOs must prepare a Metropolitan Transportation Plan (MTP) that includes strategies and actions to guide transportation system development over a minimum 20-year planning horizon, updated at least every five years (four years for air quality nonattainment and maintenance areas). The MTP should provide strategic direction based on goals, policies, needs, and priorities for all of the region's transportation projects, and consider projected costs and availability of funding sources. Federal regulations require that certain elements be included in the MTP, such as demand analysis, environmental mitigation, congestion management process (for MPOs serving TMAs only), air quality conformity, and the eight broad planning factors. In practice, MTP contents flexibly include many additional emphases and elements, tailored to support the goals and direction of each metropolitan area.

Opportunities: MTPs present an important opportunity for stakeholders from around the metropolitan area to come together and establish a joint vision and goals for the region's transportation system, which can incorporate healthy community strategies. The Federal planning requirements encourage development of a long range vision or consideration of alternative scenarios as part of determination of the long term direction reflected in the MTP.

	Who Develops?	Who Approves?	Time Horizon	Content	Update Requirements
UPWP	MPO	MPO	1 or 2 Years	Planning Studies and Tasks	Annually
MTP	MPO	MPO	20 Years	Future Goals, Strategies, and Projects	Every 5 Years 4 years for nonattainment and maintenance areas
TIP	MPO	MPO/ Governor	4 Years	Transportation Investments	Every 4 Years
LRSTP	State DOT	State DOT	20 Years	Future Goals, Strategies, and Projects	Not Specified
STIP	State DOT	US DOT	4 Years	Transportation Investments	Every 4 Years

Key documents in metropolitan and statewide transportation planning processes. Source: FHWA/FTA TPCB Briefing Book

Source: www.pedbikeimages.org / Dan Burden

Metropolitan area transportation planning products and requirements can be vessels to formalize or communicate health considerations.

Federal planning regulations call for MPOs to consider safety, environment, local planned growth, and quality of life issues in the formulation of their MTPs;[14] these emphases continue under MAP-21. MPOs are able to reflect these planning factors in regional goals and objectives, in transportation policies, programs, and strategies, and in project selection criteria that can help implement healthier communities.

The following are some examples of potential goal areas that MPOs could include in MTPs that could contribute to improved public health. These are not contained in Federal requirements but rather reflect some best practice examples, as identified in Chapter 3: Case Studies.

- Encourage transit-oriented development, mixed-use development, and intermodal connectivity.
- Enhance the safety, efficiency, and convenience of active transportation modes.
- Promote complete streets with increased safety for all modes.
- Consider health impacts as part of transportation planning.

Many MPOs use their MTPs as a public communications or education tool to relay a message or priority for transportation system needs and benefits. The goal of the tool may be to build public support for a new transportation initiative or to solicit funding through legislation to address pressing regional needs. MTPs can also communicate metropolitan priorities related to health through including health benefits in the MTP objectives and selection criteria for reviewing projects, thus building a compelling case for programs and investments based in part on broad support for community health. Communicating priorities and benefits related to health may attract support from population sectors and stakeholders that are not traditionally involved in transportation planning, broadening the perspectives included in planning process, and ultimately, the base of support for decisions.

Transportation Improvement Program

Existing Framework*:* MPOs must prepare a financially-constrained TIP that lists all capital and non-capital surface transportation projects, along with total project costs and funding sources, updated every four years. The TIP is meant to provide a comprehensive listing and description of all transportation programs and projects in the area, including those funded by Federal and non-Federal sources. Projects may only be included if full funding can be demonstrated to complete and operate each project. Small-scale projects may be grouped by function, geographical area, and work type.

Opportunities: At a minimum, the TIP must list and describe all projects and funding sources, but many MPOs also use their TIPs to connect these projects with overall metropolitan priorities and goals presented in the MTP. TIPs often group projects by mode, especially if their

[14] 23 USC §134 (h) lays out eight planning factors for the metropolitan planning process, which shall be considered in the identification of transportation facilities for the MTP (§ 134 (i)). These planning factors are also contained in MAP-21 under 23 USC §134 (h).

primary funding source is mode-specific, or to map projects by geographic area. These modal associations can help illustrate the extent to which a metropolitan area chooses to fund and include multimodal transportation options that promote active transportation.

Geographic Information Systems and maps can show projects that connect work centers and residential areas to health-related destinations, such as medical or human services facilities, or whether projects disproportionately impact population groups protected by Environmental Justice provisions, for example, through adverse health effects. TIPs can also group projects in a way that demonstrates investment in safety improvements.

Federal Transportation Regulations

Transportation planning in the United States was previously guided by SAFETEA-LU, the Federal transportation legislation passed in 2005, and by its predecessor legislation, and the joint planning requirements developed by FHWA and FTA to implement the legislation. MAP-21 continues key planning elements that are relevant to public health, as identified in this report. All recipients of Federal transportation funds must follow the regulations contained in Title 23 of the Code of Federal Regulations (CFR). These regulations are determined by legislation contained in Title 23 of the United States Code (USC), which is amended with each new transportation reauthorization and includes current programs that provide Federal funds for transportation. While specific regulations and emphases have evolved in the past few reauthorizations, the basic framework of Federal funding allocation and planning requirements have remained very consistent. The general framework includes significant flexibility for MPOs and their partners to address new policies and emerging issues, such as healthy communities, whether identified at Federal, State, metropolitan, or local levels.

Public Involvement

Existing Framework: In addition to working with other transportation agencies, Federal regulations require consultation with the public, resource and regulatory agencies, and other stakeholders. MPOs must develop and document a public participation process for public review and comment at key decision points of the transportation planning process, and must explicitly consider and respond to public input. MPOs also must make transportation plans and project information available to the public in a timely manner, with appropriate feedback mechanisms. MPOs are also expected to employ visualization techniques in public participation and in development of plans.[15]

Opportunities: The Federal requirement for MPOs to solicit and consider public input for all transportation plans and projects has three specific opportunities for healthy communities:

1. MPOs can consult stakeholder groups with interest in transportation and health issues. These can include local public health departments, hospital or medical groups, active transportation interest groups, and research and advocacy groups (in areas such as

[15] 23 CFR §134 (i) (6)

public health, food access, or park access). The groups can help MPOs identify adverse health impacts and adjust project plans to improve health benefits.

2. MPOs may attract greater support and participation from resource and regulatory agencies through promoting the inclusion of public health benefits in transportation plans and programs. The resource agencies may have an interest in benefits such as reduced air or water pollution, reduction of Environmental Justice concerns, or overall design for healthy communities through improved facilities for walking and bicycling, with resultant increases in physical activity.
3. MPOs can better engage the public and increase levels of public support through including and promoting strategies within their plans and programs that enhance healthy communities. Public health benefits may attract support from senior citizens who need to access medical appointments or residents interested in better park access or other opportunities for physical activity. Transportation plans with clear health connections may be more interesting and relevant for members of the public and applicable to a wider range of quality of life issues.

Title VI and Environmental Justice

Existing Framework: Title VI of the Civil Rights Act of 1964 prohibits discrimination based upon race, color, and national origin. Specifically, 42 USC §2000d states that "No person in the United States shall, on the ground of race, color, or national origin, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving Federal financial assistance."[16] Presidential Executive Order 12898 on "Federal Action to Address Environmental Justice in Minority Populations and Low-Income Populations" places further emphasis upon Title VI protections, stating that "each Federal agency shall make achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its policies, programs and activities on minority populations and low-income populations."[17] FHWA Overviews of Title VI and the Executive Order on Environmental Justice describe their relevance for transportation programs, policies, and activities.

FHWA and FTA include compliance with Title VI of the Civil Rights Act of 1964, Executive Order 129898, and the USDOT Order on Environmental Justice as part of their oversight of the metropolitan planning process conducted by MPOs. Federal planning regulations (23 CFR §450.334(a)(3)) require FHWA and the FTA to certify that in TMAs "the planning process . . . is being carried out in accordance with all applicable requirements of . . . Title VI of the Civil Rights Act of 1964, as amended (42 USC §2000d-1) and 49 CFR part 21."

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[16] FHWA Office of Civil Rights, Title VI of the Civil Rights Act of 1964, http://www.fhwa.dot.gov/civilrights/programs/tvi.htm

[17] FHWA, "An Overview of Transportation and Environmental Justice," http://www.fhwa.dot.gov/environment/environmental_justice/overview/

Opportunities: In response to Title VI and Executive Order 12898 provisions, as well as for their own planning analysis, some MPOs evaluate health impacts that may result from transportation projects and programs, measurements of impacts, and strategies to avoid or mitigate those impacts. While FTA and FHWA call for MPOs to identify, measure, and avoid or mitigate adverse impacts for populations covered by Title VI and the Executive Order, MPOs may also choose to measure health impacts of their transportation projects that impact the general population. HIAs are one tool MPOs can use to identify health impacts associated with transportation projects; these are described in more detail in the Data and Tools section. The case studies demonstrate how some MPOs choose to integrate into their long-range goals and other planning processes the avoidance or reduction of negative health impacts associated with transportation projects.

Air Quality

Existing Framework: Air quality regulations, under Section 176 (c) (1) of the Clean Air Act Amendments of 1990 (CAAA), require that all new transportation projects conform to air quality plans created by or in conjunction with State air-quality agencies. These state plans implement attainment or maintenance of national air quality standards that are based on EPA's assessment of the health risks associated with emissions identified under the CAAA. MTPs and TIPs in nonattainment or maintenance areas must undergo conformity determinations from FHWA, FTA, and the MPO.

Opportunities: The provision of Federal transportation funds is connected to air quality attainment, which requires MPOs to carefully consider the air quality impacts of new and planned transportation projects in nonattainment or maintenance areas. Localized, transportation-related air pollution may be linked to health impacts such as asthma, diminished lung function, and cardiac impairments.[18,19] The EPA has documented effective strategies used by MPOs to control air pollution on their State and Local Transportation Resources website.

Planning Factors

Existing Framework: 23 CFR §450.306 identifies eight planning factors that fall within the scope of the metropolitan area transportation planning process and that MPOs are required to address in their plans. While all of these are integrated into standard MPO planning activities, MPOs also can apply these factors to health-related transportation goals. Several of these planning factors present specific opportunities for integration with public health, consistent with the balanced approach taken in this report, as part of the metropolitan planning process:

- **Safety:** The provision of safe transportation systems results in the minimization of injuries and fatalities associated with daily travel. Safety planning should be multimodal,

[18] Environmental Protection Agency. 2010. Effects of Air Pollutants – Health Effects. Air Pollution Control Orientation Course. Accessed 20 September 2012: http://www.epa.gov/apti/course422/ap7a.html.
[19] Center for Disease Control. 2011. CDC Transportation Recommendations. Accessed 17 July 2012: http://www.cdc.gov/transportation/recommendation.htm.

including freight, transit, highway, and nonmotorized infrastructure and systems. Safety planning should also involve stakeholders from transportation providers, local governments, private businesses, schools, and communities. Planning for safety, and the associated prevention of all transportation-related injuries and fatalities, is a high-priority shared goal for transportation and public health agencies.

- **Accessibility and mobility for people and freight:** Transportation systems should allow all people to access the places they need to live healthy lifestyles; these healthy destinations can include grocery stores and farmers' markets that sell fresh produce, medical offices, hospitals, and other human service providers, and active recreation facilities and parks. The transportation planning process should consider transportation facilities that connect people from their homes and employment centers to these destinations. Freight mobility can also have an indirect impact on health through delivering foods and medicines to all communities.
- **Consideration of the environment, energy, quality of life, and local planned growth:** This broad planning factor supports planning by MPOs to consider the integration of environmental and social impacts of transportation systems, including the multiple interactions between transportation and healthy communities. This planning factor "require[s] communication and interaction between transportation agencies and those involved with developing and implementing plans for growth, economic development, and similar issues and concerns impacting land use."[20] According to the CDC, the integration of land use and transportation through healthy community design can promote access to schools, jobs, neighborhoods, parks, and healthy foods and to active transportation.[21]
- **Intermodal integration and connectivity:** For many people, especially those who do not drive personal vehicles due to financial or physical limitations, accessing healthy destinations involves reliance on multiple modes of transportation. The integration of transit with nonmotorized facilities can improve the safety and accessibility of these destinations for all people. Enhanced intermodal facilities and connections would also encourage more people to use nonmotorized transportation modes, increasing their physical activity levels, while providing broad mobility options.

Non-Transportation Federal Regulations

National Environmental Policy Act

NEPA requires that all projects that receive Federal funds go through a formal evaluation process to determine if they cause significant impact to the environment, defined broadly to include natural and cultural resources as well as human social and economic factors.

[20] FHWA. 2012. Coordinating Land Use and Transportation: What is the Role of Transportation? Accessed 17 July 2012: http://www.fhwa.dot.gov/planning/processes/land_use/index.cfm.
[21] CDC. 2011. "Encourage Healthy Community Design." CDC. 2012. Land Use Planning and Urban/Peri-Urban Agriculture. http://www.cdc.gov/healthyplaces/healthtopics/healthyfood/landuse.htm.

Transportation agencies responsible for constructing new transportation infrastructure, funded with Federal dollars that are allocated through the metropolitan planning process, must complete environmental analyses that assess the affected environment and environmental impacts of proposed projects. The purpose of NEPA includes the protection of the natural environment to "stimulate the health and welfare of man" (42 USC §4321), to "assure for all Americans safe, healthful . . . surroundings," and to avoid "risk to health or safety" (42 USC §4331). Therefore, public health concerns are a significant consideration during the NEPA review process.

Agencies responsible for preparing NEPA documentation consider all potentially significant impacts to human health and use all available data to estimate the magnitude of those impacts. These impacts include health impacts on human populations, such as exposure to hazardous substances, air or noise pollution, multimodal transportation accommodation, and motorist and pedestrian injuries. The Center for Disease Control reviews NEPA documents on behalf of the Department of Health and Human Services.[22] Through requirements for public review and comment, the public has several opportunities to comment on health impacts that may result from a proposed project.

Other Federal Regulations and Guidance

Several other non-transportation regulations and guidance can directly or indirectly influence how metropolitan area transportation planning incorporates health considerations. The following are highlights of these regulations:

- **Americans with Disabilities Act**: The Americans with Disabilities Act (ADA) prohibits discrimination on the basis of disability in employment, public transportation, public accommodations, State and local government activities, and telecommunications. Public transportation systems must provide access to transit service to people with disabilities, including through paratransit.[23] MPOs must create MTPs and TIPs that "provide for the development and integrated management and operation" of transportation systems and facilities, including accessible walkways and bicycle facilities.[24]

  All new construction projects provided by public agencies that include pedestrian facilities must incorporate accessible pedestrian features to the extent technically feasible, without regard to cost.[25]

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[22] CDC. 2009. National Environmental Policy Act (NEPA). Accessed 17 July 2012: http://www.cdc.gov/healthyplaces/NEPA.htm ; National Center for Environmental Health. 2008. Public Health Impact Assessment in the National Environmental Policy Act of 1969: CDC's Review and Commenting Program. Center for Disease Control – Division of Emergency and Environmental Health Services. Fact Sheet. Accessed 23 August 2011: http://www.cdc.gov/nceh/publications/factsheets/PublicHealthImpactAssessmentinNEPA.pdf.

[23] U.S. Department of Justice. 2009. A Guide to Disability Rights Law. Accessed 17 July 2012: http://www.ada.gov/cguide.htm#anchor62335.

[24] 23 USC §134 (c)2

[25] FHWA Office of Civil Rights. Questions and Answers about ADA/Section 504. Accessed 17 July 2012: http://www.fhwa.dot.gov/civilrights/programs/ada_sect504qa.htm#q1. 28 CFR §35.170-35.190.

- **Physical Activity Guidelines**: The Department of Health and Human Services (DHHS) publishes Physical Activity Guidelines for Americans. The report shows strong evidence that physical activity lowers the risk of heart disease, strokes, high blood pressure, colon and breast cancer, Type 2 diabetes, and other diseases. Physical activity also prevents weight gain, prevents falls, and leads to better cognitive function in older adults. Summary recommendations from the 2008 report provide suggested activity levels for children, adults, and older adults.
- **Older Americans Act**: The Older Americans Act (OAA) (2006 Reauthorization) was established for the organization and delivery of social and nutrition services to aging Americans, including grants for planning, social services, research, and training in the field of aging. Transportation projects are included under the OAA services, and the National Center for Senior Transportation offers resources to help States and MPOs coordinate transportation services.[26]

State Legislation

Several States have passed legislation and undertaken policies and programs to advance transportation and public health planning. Several States have specifically addressed Health Impact Assessments and added the use of these assessments as requirements or recommendations for transportation projects. Examples of related State initiatives include:

- Washington State passed a law (SB 6099) in 2007, which requires planners and transportation officials to incorporate the recommendations of a HIA into the final design of a major State highway bridge replacement. The law refers to a single project and is not a broad requirement for all projects in the State. In 2007 and 2008, the Puget Sound clean air agency and the King County public health department conducted the HIA.
- Montgomery County, Maryland, adopted a Board of Health regulation to complete an HIA prior to the approval of a new roadway project. The County plans to use HIAs to analyze health effects related to air pollutants generated by the new roads.[27]
- New Mexico passed a law (HJM10) in 2007 that creates a food gap taskforce to investigate improved access to healthy and affordable foods for underserved New Mexicans. Topics of investigation included transportation and distribution.
- Washington State passed a law in 2007 (SB5186) that "declares an intent to promote policy and planning efforts that increase access……for regular exercise in all communities." State agencies offering planning grants must accord preference to

[26] U.S. Administration on Aging. 2011. Outline of 2006 Amendments to Older Americans Act. Accessed 17 July 2012: http://www.aoa.gov/AoA_programs/OAA/oaa.aspx. Section 416 specifically authorizes the Assistant Secretary of Health and Human Services to award grants for innovations to improve transportation.
[27] Human Impact Partners. 2011. HIA Policy. Accessed 29 August 2011: http://www.humanimpact.org/hia-policy.

municipalities that use urban planning to increase access to physical activity and transportation policy and infrastructure changes to promote nonmotorized modes.[28]

- Massachusetts passed the Healthy Transportation Compact in 2009 which requires transportation decision-making that considers public health impacts and other community benefits. The Compact includes HIAs for use by planners, transportation and public health administrators, and developers. The law also includes provisions for greenhouse gas emission reduction, increased active transportation travel, complete streets, and public-private partnerships to support healthy transportation.[29]

In addition to these regulations, States may have regulations pertaining to environmental impacts of transportation projects, such as greenhouse gas emissions or particulate emissions that have important health implications. States may also consider health impacts in their STIPs or other transportation plans (such as statewide corridor, freight, or rail plans). State agencies in States with active legislation linking transportation with health impacts or that consider health impacts within their current transportation planning may be a good resource for MPOs. [30]

Federal Programs, Initiatives, and Funding Sources

There are a number of Federal initiatives, task forces, and funding programs that support transportation strategies that improve public health. This section briefly documents these efforts, organized by the major actors: USDOT, its Federal partners, and other Federal agencies. This section focuses on Federal and national activity because of its relevance for all MPOs and metropolitan planning processes, although it is important to note that each State has its own statewide programs, initiatives, and funding sources that may be relevant to transportation planning and health for MPOs.

[28] Washington State. 2007. SB 5186 Digest. Accessed 17 July 2012: http://apps.leg.wa.gov/documents/billdocs/2005-06/Pdf/Digests/Senate/5186.DIG.pdf.

[29] Massachusetts DOT. 2011. Healthy Transportation Compact – MassDOT. Accessed 29 August: http://www.massdot.state.ma.us/GreenDOT/HealthyTransportationCompact.aspx.

[30] The CDC runs a Nutrition, Physical Activity, and Obesity Legislative Database. The database contains hundreds of enacted, pending, and proposed state bills related to nutrition and physical activity. Bills are easily searchable by state, bill number, year, and/or topic. Database: *apps.nccd.cdc.gov/DNPALeg/*

partnership for Sustainable Communities
an interagency partnership HUD • DOT • EPA

Federal initiatives and resources can support a health focus in metropolitan area transportation planning.

Students from the Bancroft Elementary School weigh vegetables during the White House Kitchen Garden harvest party. Source: Let's Move

USDOT Programs

Three of the five main priorities identified in "Transportation for a New Generation," the USDOT Strategic Plan 2012-2016 are directly relevant to health: "safety," "livable communities," and "environmental sustainability." USDOT has a number of programs with linkages to public health and these priority areas, including:

Transportation Alternatives

The Transportation Alternatives (TA) program provides funding to States and MPOs to expand transportation choices and the enhance transportation experiences. There are several eligible categories of activities; categories with potential health implications include facilities for pedestrians and bicycles, and the provision of safety, educational activities and infrastructure for pedestrians, bicyclists, children, older adults, and persons with disabilities.

TA funding is apportioned to State DOTs with a portion sub-allocated to geographic regions, including MPOs that serve TMAs. MAP-21 also consolidates two programs with strong health and transportation connections into Transportation Alternatives: Safe Routes to School and Recreational Trails.[31]

Safe Routes to School (SRTS) is the first FHWA program to have health described as an official part of its purpose. The establishing legislation for the program states that its goal is "to make bicycling and walking to school a safer and more appealing transportation alternative, thereby encouraging a healthy and active lifestyle from an early age."[32] MAP-21 eliminates designated funding for SRTS, but SRTS projects are eligible for funding under the Transportation Alternatives program.[33]

The Recreational Trails Program (RTP) provides funds to the States for developing and maintaining recreational trails and trail-related facilities for nonmotorized and motorized uses. The assistance is provided through FHWA and administered by agencies in each State. Under MAP-21 States may opt out of the use of their RTP funds and transfer them to other uses.[34] In addition to the RTP funds distributed to States, many States have separate funding for trails, nonmotorized infrastructure, and other active transportation accommodations

Nonmotorized Transportation Pilot Program

The Nonmotorized Transportation Pilot Program (NTPP) was established by SAFETEA-LU Section 1807 to "demonstrate the extent to which bicycling and walking can carry a significant part of the transportation load, and represent a major portion of the transportation solution, within selected communities," and to demonstrate results related to improved health and

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[31] FHWA, "Transportation Alternatives Interim Guidance," http://www.fhwa.dot.gov/map21/guidance/guidetap.cfm

[32] 23 USC §402

[33] MAP-21, Section 1122 §213 (b) (3)

[34] MAP-21, Section 1122 §213 (b) (2).

environmental quality.[35] The program provided over $25 million to each of four communities for investment in nonmotorized infrastructure and outreach and education programs. A Working Group composed of the FHWA, the pilot communities, the Volpe Center, the Rails to Trails Conservancy, and the CDC was formed to coordinate research and outreach activities. NTPP reported results in a Report to Congress[36] in April 2012. The Working Group will continue to evaluate travel behavior changes from the nonmotorized investments and health and other outcomes for a report in 2013.

Congestion Mitigation and Air Quality

The Congestion Mitigation and Air Quality (CMAQ) program was "conceived to support surface transportation projects and other related efforts that contribute air quality improvements and provide congestion relief."[37] The program provides funds to State DOTs and MPOs for projects that reduce congestion and improve air quality. MAP-21 increases the potential health benefits of CMAQ by including particulate matter as a pollutant and by requiring MPOs serving a nonattainment or maintenance area with populations over one million people to develop a performance plan to ensure that CMAQ funds are used to improve air quality and congestion in the region.[38]

Highway Safety

23 USC §402 provides guidance and grant funding to State highway safety programs. Section 402 funds the State and Community Highway Safety formula grant program, and grants are awarded to States who have submitted a Performance Plan to FHWA. MPOs can work with their State DOT partners to learn more about the Section 402 grants. The National Highway Traffic Safety Administration (NHTSA) provides guidance for State safety programs with a strong emphasis on the safety of pedestrians and bicyclists.[39]

Metropolitan Planning

Metropolitan Planning (PL) funds "are available for MPOs to carry out the metropolitan transportation planning process required by 23 USC §134," including development of MTPs and TIPs, for inventories of the condition and capacity of routes, and predicting population, employment, and economic growth, and determining current and future transportation needs.[40]

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[35] http://www.fhwa.dot.gov/environment/bicycle_pedestrian/legislation/legtealu.cfm#sec1807

[36] "Report to the U.S. Congress on the Outcomes of the Nonmotorized Transportation Pilot Program SAFETEA-LU Section 1807," FHWA with Assistance of USDOT/Volpe Center, April 2012. http://www.fhwa.dot.gov/environment/bicycle_pedestrian/ntpp/2012_report/

[37] http://www.fhwa.dot.gov/environment/air_quality/cmaq/

[38] MAP-21, Section 1113

[39] Uniform Guidelines for State Highway Programs http://www.nhtsa.gov/nhtsa/whatsup/tea21/tea21programs/pages/PedBikeSafety.htm

[40] FHWA. 2010. Metropolitan Planning Funds. Accessed 17 July 2012: http://www.fhwa.dot.gov/Federalaid/guide/guide_current.cfm#c47.

MPOs exercise flexibility in working with their partners to determine how PL and other funds will be spent on transportation planning. For example, they could use funds to identify and evaluate health impacts or benefits resulting from current or planned transportation infrastructure or strategies, to collect related data, for forecasting, or for public and stakeholder outreach. They can also use these funds to plan for mitigation of related health impacts or to plan new facilities or programs that would improve access to healthy destinations. The case studies provide examples of the use of planning funds for innovative health-related activities. MPOs document how they use planning funds in their Unified Planning Work Program, which is an important resource for understanding transportation planning conducted in each metropolitan area.

Urbanized Area Formula Program

The FTA Urbanized Area Formula (5307) program funds transit capital, operations, and planning in Census-designated urbanized areas. Recipients include government agencies and publicly-owned transit operators. Eligible activities include: planning and design of transit projects and studies; capital investments in buses and fixed-guide way systems; job access and reverse commute programs; and safety and security for transit vehicles and stations. Urbanized areas with populations under 200,000 may also use 5307 funds for operating assistance. MAP-21 also adds flexibility to use 5307 funds for operating assistance in larger urbanized areas with populations over 200,000.[41]

Funds from the 5307 program can be targeted to add or improve transit service to help underserved populations access healthy destinations. The program can also fund safety improvements for transit and pedestrian and bicycle access to transit.

New Starts

The FTA New Starts and Small Starts program is the primary federal funding mechanism for major capital investments in transit. When evaluating New Starts projects, FTA uses a variety of documented criteria, including economic development, environmental benefits, mobility improvements, and land use conditions (such as pedestrian facilities). Capital transit improvements through New Starts may thus improve bicycle and pedestrian integration into the metropolitan transportation network and provide more facilities and destinations for active transportation.

Elderly and Persons with Disabilities Program

The FTA Elderly and Persons with Disabilities (5310) program funds capital expenses for transportation services for the elderly and persons with disabilities when existing transportation options are insufficient or inappropriate. Funds are allocated to States based on population share for these groups. The States then allocate funds to local applicants and oversee coordination between funded activities and other Federally-funded projects.

[41] MAP-21, Section 20007 §5307 (a)(2)

The Puget Sound Regional Council worked with Public Health – Seattle and King County, which received a Communities Putting Prevention to Work grant from the CDC, to develop a bicycle and pedestrian toolkit for local jurisdictions and to integrate health into the LRTP prioritization proposal. Source: Puget Sound Regional Council.

Federal resources can help formalize local partnerships and interest in health, leading to long-term relationships and actions that otherwise would not have occurred.

MPOs can plan to use 5310 funds to improve accessibility for the elderly and persons with disabilities, who likely have greater challenges in reaching healthy destinations such as medical centers. Funds can support transportation components of local housing projects to improve access to allow "aging in place."

USDOT Partnerships

The USDOT is involved in a number of interagency initiatives that focus on health or related topics. Three of the more relevant ones are listed below, in chronological order.

National Prevention Council

The National Prevention, Health Promotion, and Public Health Council (National Prevention Council), is an interagency Federal council that includes all executive agencies, including USDOT. The Council was called for under the Affordable Care Act and coordinates federal activities that foster a national focus on wellness and prevention.

In June 2011 the Council developed a National Prevention and Health Promotion Strategy. The strategy promotes a shift from a focus on sickness and disease to one based on wellness and prevention. It presents a vision, goals, recommendations, and action items that individuals and public, private, and nonprofit organizations can use to reduce preventable death, disease, and disability in the United States. The National Prevention and Health Promotion Strategy was preceded by the National Strategy for Quality Improvement in Health Care (March 2011). The National Quality Strategy presented three national aims for improving the quality of health care in the U.S.: Better Care, Healthy People and Communities, and Affordable Care.

HUD-DOT-EPA Partnership for Sustainable Communities

The Partnership for Sustainable Communities is intended to help communities nationwide improve access to affordable housing, increase transportation options, and lower transportation costs while protecting the environment. To guide coordination of Federal funding programs and policies, the partnership developed six Livability Principles, three of which explicitly reference the intersections between transportation and public health. The principles aim to provide more transportation choices in part to improve air quality and promote public health, improve economic competitiveness of neighborhoods by giving people reliable access to basic needs, including healthcare services, and to enhance the unique characteristics of all communities by investing in healthy, safe and walkable neighborhoods. The Federal Partnership agencies (USDOT, EPA, and HUD) are collaborating on a broad range of initiatives at national, regional, and local levels with their different regional and local planning partners. Many of these planning initiatives either include or could include a health focus.

USDOT, EPA, and HUD each provide separate grant programs, some of which allow for a health and transportation component, as discussed in the previous section for USDOT. For example, the Sustainable Communities Grant Program, administered by HUD, supports planning efforts that integrate several components of healthy communities, and places a priority on investing in partnerships, including public health, that promote integration of Federal Livability Principles

into long-term and regional strategies. One example grant is the $2.6 million grant to Shelby County in Tennessee for developing a Mid-South Regional Greenprint and Sustainability Plan to initiate long-term comprehensive land use planning. One anticipated benefit is an increase in affordable housing located near walking and biking trails and improved health outcomes from creating more walkable neighborhoods.

Other Federal Initiatives and Funding

In addition to the USDOT partnerships, there are several other Federal agencies and initiatives that have public health initiatives with a connection to transportation.

U.S. Department of Health and Human Services: Centers for Disease Control and Prevention

The mission of the U.S. Department of Health and Human Services (DHHS) is to provide the "building blocks" for Americans to live healthy and successful lives. The Centers for Disease Control and Prevention is a component of the Department of Health and Human Services, and seeks to create tools and disseminate information to help the population protect their health.

These Centers have a number of programs and initiatives with a focus on the transportation implications of public health. These programs are cited as important resources in the case studies that follow.

- Healthy Community Design Initiative: This initiative attempts to improve public health through linking public health surveillance with community design decisions, improving community design decisions through tools, educating decision makers on the health impacts of community design, building partnerships with community design decision makers, conducting research to identify the links between health and community design, and translating research into best practices.
- CDC Transportation Recommendations: The CDC makes eight specific recommendations for considering the public health implications of transportation issues. The recommendations span the following broad categories:
    - Reduce injuries associated with motor vehicle crashes
    - Improve air quality
    - Expand public transportation
    - Promote active transportation
    - Encourage healthy community design
    - Design to minimize adverse health and safety consequences
    - Require research and surveillance
    - Support professional development and job creation
- Communities Putting Prevention to Work (CPPW): This program was funded through the American Recovery and Reinvestment Act of 2009 for a one-time distribution of grant funds in 2010. It provided grants to 50 communities to tackle obesity and tobacco use through environmental changes. Participating communities have furthered public health

outcomes through actions such as improving opportunities for active transportation and increasing access to healthy food and tobacco cessation resources.

- Community Transformation Grants / Healthy Communities Program: The Community Transformation Grants (CTGs) support community-level efforts to reduce chronic disease. Through promoting healthy lifestyles, the grants aim to improve health, reduce health disparities, and control health care spending. This program has distributed over $100 million to 61 States and communities, reaching about 120 million Americans. Many of the grants will be used to promote healthy and safe physical environments.

U.S. Department of the Interior

The National Park Service (NPS) has an Office of Public Health that is primarily staffed with commissioned officers from the United States Public Health Service under a memorandum of agreement between DHHS and the Department of the Interior. The Office has four focus areas: Environmental Health, Disease Detection and Response, Public Health Protection and Promotion, Emergency Preparedness and Response. The Public Health Protection and Promotion area has recently expanded in scope, in part in response to the international Healthy Parks Healthy People initiative, which promotes the important interdependency between the health of parks and health of people. The U.S. Healthy Parks Healthy People Strategic Action Plan outlines future NPS activities on public health, including increasing park access and greater cross-agency collaboration.

The NPS Director has also established a Health and Wellness Executive Steering Committee and tasked it with exploring the role of NPS in improving the nation's health while continuing to uphold the core mission and values of NPS. The initiative so far has consisted of an invitation-only workshop in April 2011 of representatives from Federal agencies, health care companies, and nonprofits; an inventory of physical activity and public health programs at parks from 2005-2010; and promotion of programs such as the Park Prescriptions Initiative, which Indiana Dunes National Lakeshore implemented, where doctors prescribe walking regimes and recommend specific locations, such as nearby parks.

U.S. Department of Agriculture National Institute of Food and Agriculture

The USDA National Institute of Food and Agriculture (NIFA) Grants have broad eligibility for programs in rural areas. These grants can be used for infrastructure, planning, or other projects that promote human health through improved access to food. Previously funded applications include community gardens, food access and security assessments, and community kitchens. NIFA grants can thus increase local access to food resources, and may also create data and plans that serve as health inputs into the metropolitan area transportation planning process.

U. S. Environmental Protection Agency

Along with participating in the Partnership for Sustainable Communities, EPA also offers an Environmental Justice Small Grants Program for funding for environmental and public health issues.

EPA's Smart Growth Program supports local communities that are seeking to establish development and planning practices that are sensitive to the built and natural environments. In addition to providing informational resources and technical assistance to local partners, EPA also funds smart growth grants that may be useful for governments and organizations developing health-related assessments and data as part of planning efforts.

President's Council on Fitness, Sports, and Nutrition

The Council's mission is to "engage, educate and empower all Americans across the lifespan to adopt a healthy lifestyle that includes regular physical activity and good nutrition." The Council plays a role in developing the administration's priorities, outreach and awareness efforts to help improve the health and quality of life for all Americans. The Council incorporates messaging and promotes efforts with the National Physical Activity Plan, which has recommendations centered around eight areas, including transportation, land use and community design.

America's Great Outdoors

The America's Great Outdoors initiative was launched by President Obama to develop a conservation and recreation agenda. The initiative, which includes USDOT, has a number of public health goals that involve connecting people with nature and sites for outdoor activities.

For example, one objective is to provide safer and more accessible and affordable transportation options to better connect youth to exercise venues such as outdoor parks.

Let's Move

Let's Move is an initiative launched by First Lady Michelle Obama with the goal of solving childhood obesity within a generation. The program, which coordinates with the America's Great Outdoors, is focused on helping children and their parents access opportunities for healthy eating and physical activity. The five pillars of the initiatives are: creating a healthy start for children, empowering their parents and caregivers, providing healthy food in schools, improving access to healthy and affordable foods, and increasing physical activity.

At the launch of Let's Move, President Obama signed a Presidential Memorandum creating the Task Force on Childhood Obesity. This was established to develop and implement an interagency plan that "details coordinated strategy, identifies key benchmarks, and outlines an action plan to solve the problem of childhood obesity within a generation." The action plan makes about 70 recommendations to achieve this goal.

Let's Move has two outgrowth initiatives: Let's Move Outside and Let's Move Cities and Towns. Let's Move Outside is an initiative administered by the Department of the Interior to encourage children and families to take advantage of the outdoors. The initiative recognizes that lack of access and related issues such as busy roads, poor pedestrian infrastructure, and inadequate transit are key barriers to children getting exercise and being outdoors. The initiative also aims to promote outdoor activity, including walking and biking, as the easiest and most affordable option for families to stay healthy. Let's Move Cities and Towns is designed to encourage mayors and elected officials to adopt a plan to fight childhood obesity. The program is currently

in the process of updating the "Let's Move Cities and Towns Toolkit," which details strategies and resources for local governments.

NGO Advocacy, Research, and Programs

In addition to government sponsored initiatives, the nonprofit sector plays an important role in advocating for public health outcomes and conducting research that is of use to policy and decision makers. Foundations and non-governmental organizations may also provide funding in areas such as active transportation and trail infrastructure, safety improvements, Environmental Justice, and community design for greater active transportation and transit mode share. There are also funds for programs and projects with public health benefits, many of which may include transportation components. This section describes some of these leading organizations and efforts.

Several of the organizations described below provided recommendations for policies, programs, and specific health-related investments in the new transportation reauthorization bill.[42] Recommendations focused on active transportation, community engagement, mass transit (to improve air quality), and safety. These organizations will continue to be informative sources for emerging policy ideas now that MAP-21 is law.

Transportation Research Board Subcommittee on Health and Transportation

The Transportation Research Board (TRB) Committees on Environmental Justice in Transportation (ADD50), Transportation and Sustainability (ADD40), Travel Behavior and Values (ADB10) and Urban Data and Information Systems (ABJ30) sponsored the creation of the TRB Health and Transportation Subcommittee in March 2011, with co-chairs from the FHWA Resource Center and the American Public Health Association (APHA). The purpose of the subcommittee is "to identify, advance and publish research and information to expand and improve current understanding and evaluation of the health impacts of Federal, State, regional and local transportation policies, procedures and actions." The subcommittee has developed a website that lists a number of resources, a Strategic Plan, and a TRB Calls for Papers.

American Planning Association

The American Planning Association (APA), a nonprofit research and education organization representing the planning profession, has a National Planning and Community Health Research Center. The Center has two ongoing projects: Planning for Food Access, which focuses on food access disparities, and Planning for Public Health, which focuses on how health is being integrated into local comprehensive plans and plan-making processes and has resulted in a

[42] APA, NACCHO, and APHA respectively in Joint Letter to Congress, American Society of Landscape Architects, The American Institute of Architects, and the American Planning Association. February 29, 2012. http://www.asla.org/uploadedFiles/CMS/Government_Affairs/Federal_Government_Affairs/AIA%20APA%20ASLA%20FINAL.pdf ; Letter to Barbara Boxer and John Mica. May 24, 2012. http://www.naccho.org/advocacy/action/upload/Boxer-Mica-transportation-conference.pdf ; APHA Transportation Policy Statements. http://www.apha.org/advocacy/priorities/issues/transportation/policy.htm

survey and report (March 2011). The Center has ongoing interest groups, an online forum, and webinar series, and has developed a Health Impact Assessment Online Course, funded by CDC and in partnership with the National Association of County and City Health Officials (NACCHO), a national nonprofit organization representing local public health agencies.

Previous Center research projects include Planning and Designing the Physically Active Community, which was funded by the Robert Wood Johnson Foundation and resulted in a survey (2003), resource list (2005) and Planning Advisory Service report (2006). The Center also collaborated with NACCHO on an initiative called Healthy Communities through Collaboration, which produced the following activities and reports:

- Symposium on Land Use and Health (2004)
- National web-based survey of APA and NACCHO members (2004)
- Planning Advisory Service report, Integrating Planning and Public Health: Tools and Strategies To Create Healthy Places (2006) outlines the five strategic points of intervention at which planners and public health professionals can coordinate their efforts and provides case studies for each: visioning and goal setting, plans and planning, implementation tools, site design and development, and public facility siting and capital spending
- Fact Sheets: "Public Health Terms for Planners & Planning Terms for Public Health Professionals" and "Working with Elected Officials to Promote Healthy Land Use Planning and Community Design"

Through these efforts, APA has developed a general approach to the intersection of public health and land use planning that can be expanded to include transportation. Even though some transportation terms appear in the materials developed (e.g., traffic calming and vehicle miles traveled), there is still a need to educate public health stakeholders on transportation planning specifically, both in terms of terminology but also on roles and responsibilities of government entities (e.g., MPOs and DOTs) and the consistent planning framework they follow (described above).

A more recent research project, Planning for Public Health, includes a survey of municipal comprehensive and sustainability plans, but not metropolitan or regional long-range transportation plans. However, several relevant topics were still identified: active transportation (the fourth most cited public health topic in comprehensive plans and first for sustainability plans), active living, physical activity, and environmental health.

National Association of County and City Health Officials

In addition to its collaboration with APA, NACCHO has developed a fact sheet on Public Health in Land Use Planning and Community Design, which specifically mentions traffic safety and air quality, and a development checklist created in partnership with the Tri-County Health Department of Colorado.

American Public Health Association

APHA has a Community Health Planning and Policy Development Section and a Public Health Traffic Safety Institute in partnership with NHTSA, and has identified transportation as a public health issue and priority topic for advocacy. Their advocacy and policy page provides resources, including an online communications toolkit, a series of fact sheets and reports, featured research on transportation and health, a newsletter, a resource page with links to work by national, State, local, and private organizations, public health and equity principles for transportation, a 2011 webinar series and case studies. One APHA report, At the Intersection of Public Health and Transportation, provides a good description of the ways in which the two fields intersect and how the programs under SAFETEA-LU impacted health.

Active Living by Design, Active Living Research, and Health Impact Project

The Robert Wood Johnson Foundation is the largest philanthropic organization devoted exclusively to health and health care in the United States. The foundation concentrates grant-making and research in four areas, including the promotion of healthy communities and lifestyles. Two of its national programs are Active Living by Design (ALBD) and Active Living Research (ALR).

ALBD, part of the North Carolina Institute for Public Health at the University of North Carolina Gillings School of Global Public Health, is intended to create community-led change by working with local and national partners to build a culture of active living and healthy eating. ALBD provides consultation and technical assistance and has supported 25 demonstration communities with grants. They offer services including education and training, coaching, and program development, as well as implementation and evaluation. ALBD funds active living projects in communities across the nation, has an extensive literature review on relevant articles, and has a list of tools for city planning and public health professionals to assist them in making their community more active.

ALR is research oriented and supports work to identify environmental factors and policies that influence physical activity. Its goal is to support and share research on environmental and policy strategies that can promote daily physical activity for children and families across the United States, with a focus on children of color and low-income children who are at the highest risk for obesity. ALR is administered by the University of California, San Diego. It funds research in the field and also has an extensive literature review. Its website has a database of research and other documents that can be searched and sorted by topic including transportation.

The Robert Wood Johnson Foundation is also involved in the Health Impact Project, a collaborative initiative with the Pew Charitable Trusts to promote the use of HIAs in policy making at the local and State levels. The Project offers grants for HIA demonstration projects, supports a training and technical assistance network, and researches laws and policies that might support HIAs, among other activities. Several Health Impact Project grantees have conducted HIAs on transportation plans and projects.

Design for Health

Design for Health is collaboration between the University of Minnesota, Cornell University, and the University of Colorado. Between 2006 and 2007, it assisted 19 cities and counties in Minnesota to integrate public health into comprehensive plans, transportation plans, and other guidelines and ordinances. Current work focuses on two main avenues:

- Health information; the organization's website contains a Resource Library with publicly available health information on various health topics, including physical activity and environmental health.
- Tools for health impact assessments and putting on events to help communities learn how to use health impact assessment tools.

ChangeLab Solutions Healthy Planning

ChangeLab Solutions, formerly the Public Health Law & Policy, is a collaboration between the California Department of Health Services, the California Endowment, and Kaiser Permanente. The goal of ChangeLab Solutions is to foster collaboration between public health officials and local planning officials. It works to engage advocates in the land-use and economic development decision-making process, develops tools, and provides technical assistance to promote land-use that supports healthier communities.

World Health Organization

The World Health Organization (WHO) is based in Geneva and is part of the United Nations system. It is involved in public health and planning worldwide. The Healthy Cities Project of the WHO, a movement to engage local governments in health development, has a webpage devoted to the topic of urban health. Healthy urban planning was one of the themes of the WHO European Healthy Cities Network, whose overall goal is to integrate health considerations into cities' urban planning processes and establish the commitment necessary to achieve the goal. The website contains a publication about the link between health and urban planning, as well as case studies of European cities. WHO Europe also supports countries in helping define and manage policies that are beneficial to public health by developing methods and tools to assess health impacts, and promotes sustainable transportation to help reduce health effects from transportation.

The organization has information on HIAs, including examples and other resources. HIAs and WHO's HIA tool are described in more detail in the Data and Tools section of this report.

Massachusetts Institute of Technology AgeLab

The MIT AgeLab is a research collaboration consisting of representatives from universities, businesses, and advocacy organizations to develop and implement products, services, and policies that can improve the quality of life for older adults and their families. A focus research area for AgeLab is "Safe Driving & Lifelong Transportation," which provides tools and resources for safe driving. The AgeLab works in partnership with private companies, including vehicle manufacturers, governments, and nonprofits such as the American Lung Association and AARP.

Health & Community Design Lab

The Health & Community Design Lab, formerly the Active Transportation Collaboratory, at the University of British Columbia conducts research on active transportation and its benefits to the environment, communities, and individual health. It is led by Dr. Lawrence Frank, a professor at the Schools of Population and Public Health and Community and Regional Planning.

Convergence Partnership

The Convergence Partnership is a partnership of funding organizations that support policy and practices to create environments that foster good nutrition and physical activity. Funders include Kaiser Permanente, the California Endowment, Nemours Foundation, the Robert Wood Johnson Foundation, the W.K. Kellogg Foundation, and the Kresge Foundation. The CDC is a technical advisor to the Partnership. They have developed a "Transportation & Health 101 Toolkit" as well as funder toolkit entitled "Making the Case and Getting Underway: A Funder Toolkit To Support Healthy People in Healthy Places."

Prevention Institute

The Prevention Institute focuses on prevention practices that improve health and quality of life and prevent illness and injury. It funds research, projects, and tools to increase access to healthy foods and create spaces for people to be more physically active. Their activities include the Healthy Places Coalition, which advances public health involvement in transportation planning and land use in California.

Environmental Justice Organizations

Several foundations offer grants to projects that improve environmental health and justice in targeted communities. These include the Nathan Cummings Foundation Health Program, and the Surdna Foundation. A complete list of Environmental Justice funding assistance can be found at the Environmental Justice & Health Union website.

Data and Tools

MPOs play the lead role in conducting the technical component of transportation planning for their designated metropolitan planning areas. This typically involves data collection, evaluation, and assessment for planning the regional multi-modal transportation system. The MPO's technical analysis and related use of tools responds to regional, State, and local priorities and to Federal transportation planning regulations. In some circumstances, the regulations call for the use of specific tools or methods (e.g., models for air quality conformity); in other circumstances, MPOs develop and adapt methods to broader requirements (e.g., for Environmental Justice-related assessments of impacts on disadvantaged neighborhoods). As will be apparent in the case studies that follow, MPOs rely heavily on data collection and technical analysis to successfully and explicitly incorporate health consideration in metropolitan area transportation planning and to guide investments toward improving community health. MPOs that connect transportation to health impacts through data and technical analysis can

build stronger causal relationships and gain greater support for investing in transportation projects with health benefits.

Consistent with the purpose of this report to provide a resource for peer MPOs, this section provides an overview of the potential and limitations of available technical tools for use in considering public health in metropolitan area transportation planning. The section provides a summary of these tools in the context of their health applications to provide a menu of options to MPOs; greater details on these and other technical analysis tools are provided in links or are available in other technical assistance reports.

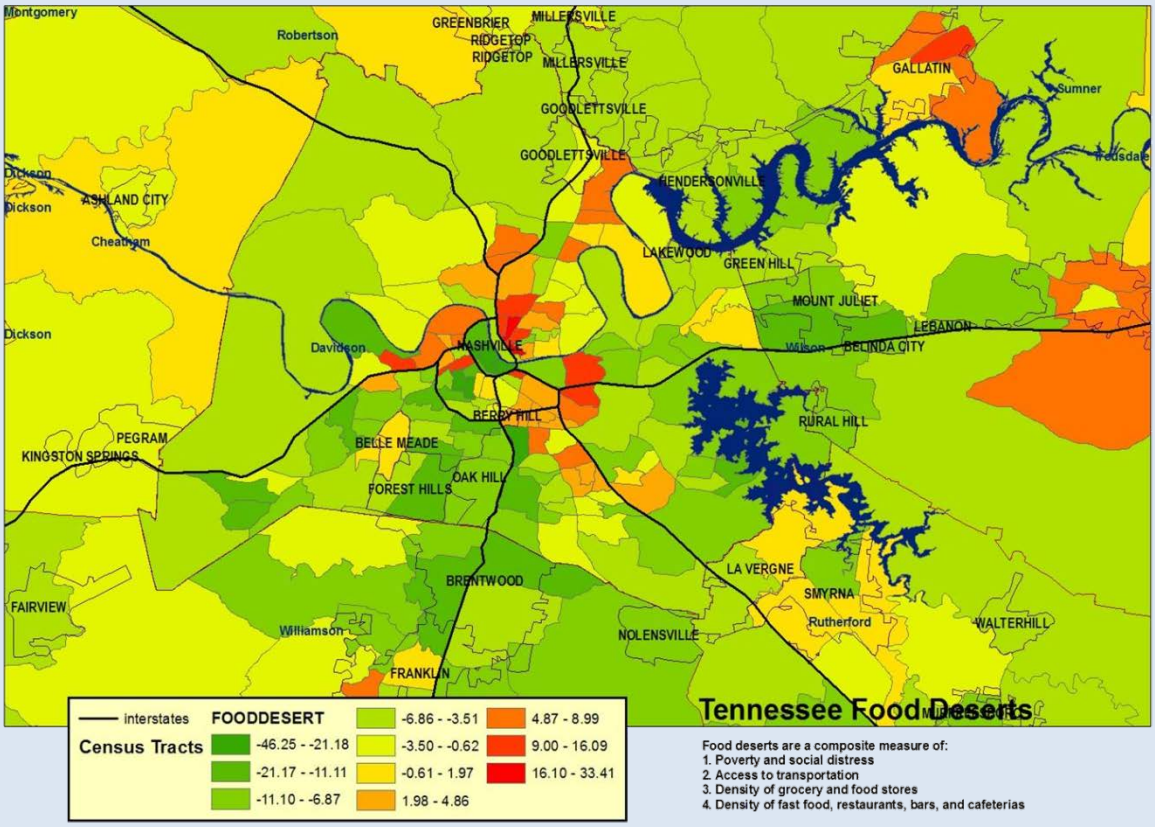
Data Collection

MPOs rely on data to estimate and predict the likely results of transportation plans, policies, strategies, and investments. MPOs also use data to monitor the results of decisions. Data include demographic, employment, and commuting data; information collected directly; and data from external sources such as the U.S. Census Bureau and the National Household Travel Survey. Some MPOs also conduct their own surveys or counts to measure travel behavior independently or in conjunction with their partners at State DOTs, cities or counties, transportation operators, or neighboring MPOs.

The data that MPOs use for travel planning include several important indicators directly or indirectly related to public health. First, demographic data on age and income level demonstrate the presence of populations that may be more vulnerable to health impacts of transportation; these include the elderly, young children, and low income populations with less ability to move away from unsafe or undesirable conditions. Car-ownership and transit-dependency data drawn from the Census can indicate populations with restricted access to grocery stores, active recreation sites, and medical offices. Travel behavior surveys can indicate residents or employees who are more likely to use active transportation modes, perhaps because of proximity to important destinations or to reliable transit. MPOs can use similar data to identify areas where investments will improve physical activity, safety, or health related access for significant numbers of people.

GIS

Geographic Information Systems (GIS) are spatial analysis tools that allow users to display and analyze data based on locational attributes. MPOs frequently use GIS tools to show the location of existing and planned transportation infrastructure relative to spatial data in their regions (jurisdictional boundaries, emergency services, environmental resources, air and sea ports, etc.). GIS tools can also be used to analyze high-vehicle crash locations as well as proximity and connectivity based on different demographic or locational attributes, such as low-income neighborhoods, transit routes, medical centers, or grocery stores (“food deserts”). GIS tools help MPOs to meet requirements and initiatives, for example: consultation with land management and resource agencies, scenario comparison of future growth patterns, and visualization of long-range planning strategies.



Research on local food deserts. Source: The Food Trust via Nashville Area MPO

To consider health in transportation planning, MPOs can adapt existing tools and may also work with partners to incorporate new data and methods.

GIS tools can identify neighborhoods in need of connectivity to healthy destinations, including neighborhoods with higher percentages of elderly, children, or other transit-dependent populations. They can calculate the proximity of active transportation infrastructure, such as bicycle lanes and sidewalks, to parks, schools, and neighborhoods. Most importantly, they can help planners to identify gaps in current transportation infrastructure that would help connect residents to healthy food, parks, and medical offices.

Modeling

MPOs are required to project transportation demand over a 20-year planning horizon as part of development of Metropolitan Transportation Plans.[43] Most MPOs use modeling tools to complete travel forecasts for the MTPs. TMA MPOs also frequently use modeling tools as part of their Congestion Management Processes to identify and predict the level, extent, location, and time of recurring or periodic congestion. These models use traffic counts, demographic data, growth projections, and other inputs to predict mode share, congestion levels, and geographic distribution of travel patterns in the future. The projections that result from the model can be applied for planning purposes to traditional areas, such as where to build new roads, as well as to innovative topics, such as safety improvements near concentrations of seniors.

Modeling tools can help transportation planners identify communities that may need additional transportation infrastructure or strategies such as travel demand management to improve community health. For example, transportation planners may plan to add bikeways and sidewalks to improve both mobility and physical activity in targeted neighborhoods. They may also help planners provide nonmotorized or transit connections to medical centers or grocery stores. MPO planners can also work with public health staff (or data) to create more complex tools that estimate health implications of future transportation plans or projects. For example, models may predict changes in traffic emissions or safety resulting from projects or modal shifts that increase or decrease traffic volume or speed.

Performance Measures

MPOs are increasingly using performance measures at all key stages of the planning process, including translating broad goals into measurable results, outcomes, or targets; tracking the implementation of plans and results of decisions; and assessing whether expected regional goals and objectives were accomplished. When MPOs set specific, often quantifiable, targets in MTPs, these performance measures allow for the monitoring of results and improve accountability. MPOs can utilize performance measures to ensure that transportation systems maximize public health benefits or minimize negative health-related impacts. The EPA published a report entitled “Sustainable Transportation Performance Measures,” which

[43] 23 CFR §450.322

includes the following suggested performance measures that are directly or indirectly related to transportation and public health:

- Percent of population and employment within 0.4 miles of transit
- Bicycle and pedestrian mode share
- Total transportation carbon dioxide equivalent emissions per capita
- Annual cost of transportation relative to annual income
- Average distance to nearest transit stop, frequency of service, average trip travel time, and access to employment by income group
- Bicycle and pedestrian crash rates[44]

These are examples of the types of measures with varying complexity that MPOs are adapting to consider health. The list can be expanded, for example, to include other measures such as air emissions per capita for general; physical activity per capita; access to healthy food or medical care by walking, bicycling or transit; nonmotorized connections to transit; and crash rates. Specifically, several of the MPOs featured in the case studies use the following performance measures:

- Use of transit to access parks (SACOG)
- Mode share for nonmotorized modes (PSRC)
- Reduction of vehicle miles traveled (to improve air quality and public health) (SACOG and PSRC)

Some data and related measures are universally available to MPOs, some require additional analysis to incorporate external data sources or forecast impacts, and others may require new investments in GIS or other tools. MPOs can work with their regional partners to track performance using both transportation and health-related data inputs. For example, SACOG is able to measure access to healthcare employment in their region using data available to the MPO, and are working with partners to measure access to healthcare in the future.

Health Impact Assessments

Health Impact Assessments are a widely-used planning tool that evaluates the public health impacts of policies and projects that traditionally fall outside the health realm.[45]

These have been used to evaluate the impact on health of housing developments, regional comprehensive plans, resource extraction, and transportation projects and plans.[46] HIAs are

[44] ICF International. 2011. Sustainable Transportation Performance Measures. U.S. Environmental Protection Agency. EPA 231-K-10-004. Accessed 26 August: http://www.epa.gov/smartgrowth/pdf/Sustainable_Transpo_Performance.pdf.

[45] Center for Disease Control. 2012. Health Impact Assessments. CDC – Healthy Places. Accessed 7 June 2012: http://www.cdc.gov/healthyplaces/hia.htm.

[46] Dannenberg, Andrew et al. 2006. Growing the Field of Health Impact Assessment in the United States: An Agenda for Research and Practice. *American Journal of Public Health*. 96 (2): 19-27. Accessed 7 June 2012: http://www.rwjf.org/files/research/AJPH_PrincetonHIApaper_proof_1Dec2005.pdf.

generally voluntary in the U.S., although a few States have mandated the use of HIAs for specific projects or types of projects (see State Legislation section).

The HIAs, and a related range of tools and analytical approaches, can help address the need to incorporate health concerns systematically and simply into different stages of the transportation planning process. HIAs can be used for new highway and bridge infrastructure, transit projects, corridor plans, and other projects and programs.

HIAs generally consist of the following steps:

1. Screening to decide whether a HIA is feasible, appropriate, and valuable to a plan/project;
2. Scoping to identify the priority issues to assess, research questions, evaluation methods, and participant roles;
3. Assessing the magnitude, direction, and certainty of health impacts;
4. Reporting results to decision-makers; and
5. Monitoring and evaluating the impact of the HIA on the decision-making process.[47]

Stakeholder involvement should be present throughout. Public health officials have generally played leadership roles in conducting HIAs, but transportation planners can also take the initiative to conduct an HIA. The HIAs can help planners measure the influence of the built environment on health in areas such as: accessibility, air quality, environmental and housing quality, food, mental health, physical activity, safety, social capital, water quality, climate change, healthcare facility siting, and noise.

HIAs can vary from small-scale to comprehensive. A range of HIA types include:

- Screening HIA with filters to rule out types of impacts;
- Scoping to determine (but not measure) issues associated with a project;
- Rapid assessments, designed as a one-day workshop with community participation;
- Integrated or intermediate HIAs, with greater detail on targeted impact areas and expanded community participation; and
- Full HIA that approaches the scale of an Environmental Assessment.[48]

The MPOs included as case studies in this report have chosen to undertake a broad range of analysis of health implications of their transportation plans and projects with similarities to HIAs, independently of regulations or other requirements. This is similar to the on-going analysis MPOs undertake of impacts related to traditional transportation goals such as congestion or safety, or non-traditional goals such as greenhouse gas emissions or energy consumption.

Several training guides and resources are available through the U.S. Centers for Disease Control and Prevention, World Health Organization, Human Impact Partners, the National Research

[47] CDC 2012.

[48] CDC 2012.

Council, or in a synthesis on research and practice in the American Journal of Public Health (See the NGO Advocacy, Research, and Programs section).

Health Economic Assessment Tool

The World Health Organization has developed a Health Economic Assessment Tool (HEAT) for assessment of bicycling and is developing an expanded version to include walking. HEAT requires two simple inputs: the number of walking or bicycling trips that a project or program is estimated to generate and the average trip length. The tool then projects an economic value (in dollars) of the project from increased walking and/or biking in a specified community. The dollar value represents the statistical value of life years saved due to health benefits (mortality) or savings from reduced disease (morbidity) of active transportation modes.[49]

The CDC works with the WHO to refine the range of applications of HEAT and to explore its use in the United States. FHWA and the Volpe Center worked with CDC to estimate economic benefits of health impacts from nonmotorized projects in four pilot communities funded under the SAFETEA-LU Nonmotorized Transportation Pilot Program. The estimates of health benefits are included in FHWA's to Report to Congress on the NTPP.

The CDC also sponsored a study to gauge U.S. interest in HEAT, with the following findings:

- Planners, public health officials, and bicycle and pedestrian advocates recognize that transportation planning decisions have health impacts, but they have little recourse for bringing those impacts into the decision making process.
- Professionals do not have the skills to generate reliable bicycle and pedestrian trip frequency and duration estimates used in HEAT.
- Potential users call for economic value to be measured in dollar savings on health care expenditures, employee absenteeism, or other measures that are more understandable in the U.S.[50]

Although the case study MPOs in this report have not used HEAT, it and similar tools will broaden the technical capacity of MPOs and their partners to conduct the technical analysis that will be essential for consideration of health in metropolitan area transportation planning.

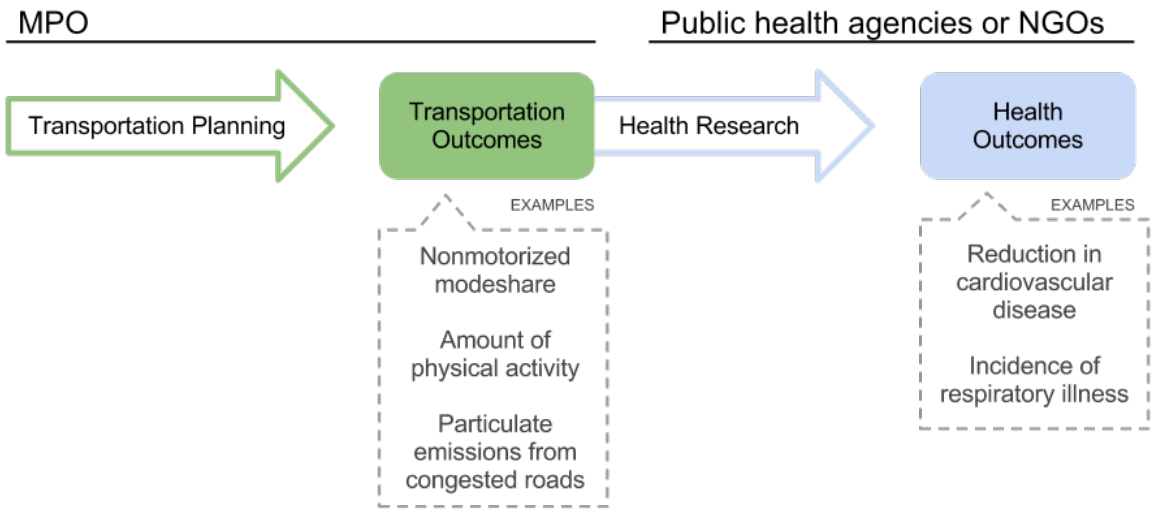
[49] World Health Organization. 2012. HEAT - Health Economic Assessment Tool. Accessed 7 June 2012: http://www.heatwalkingcycling.org/.

[50] Fenton, Mark and Brigid Junot. 2010. Health Economic Analysis Tool for Walking and Bicycling in the United States: Summary of prospective U.S. users' interest and recommendations. Accessed 12 September 2011: http://www.activelivingresearch.org/files/HEATReport_Final.pdf.

Integrating Transportation Data and Tools into Public Health Applications

MPOs commonly use the data and tools outlined in this section for transportation planning purposes, but MPO staffs generally do not have the public health expertise to apply data to health outcomes. Partnerships with public health agencies and non-governmental organizations allow the data collected and model outputs derived within the MPO planning process to be analyzed for health-related applications. MPO planners do not typically require data that measures actual health outcomes, such as disease rates or other direct health metrics, for making transportation decisions. Transportation planners are most likely to use transportation surrogate measures with health implications, such as mode shift to active transportation, reduced single occupant vehicle miles travelled, or minutes of active transportation. Public health experts can then use these transportation measures to estimate health outcomes. This collaboration allows MPOs and their public health partners to work together to apply their own expertise, as described in Figure 1. The arrows show the general linear application of transportation outcomes to health research.

Figure 1: Transportation Outcomes as Inputs to Health Research



Chapter 3: Case Studies

Many Metropolitan Planning Organizations (MPOs) across the United States are considering public health in their transportation planning by developing plans, programs, and policies intended to improve the health of their communities. In some cases, these linkages between transportation and health are formalized and visible at key stages of the metropolitan area transportation planning process (see Figure 2). This chapter includes case studies investigating four MPOs that are working with partner organizations, elected leaders, and citizens to integrate consideration of public health benefits and impacts into on-going transportation planning and decision-making. The four featured MPOs are the:

- Nashville (Tennessee) Area MPO
- Puget Sound Regional Council (PSRC) in the Seattle metropolitan area
- Sacramento Area Council of Governments (SACOG)
- San Diego Association of Governments (SANDAG)

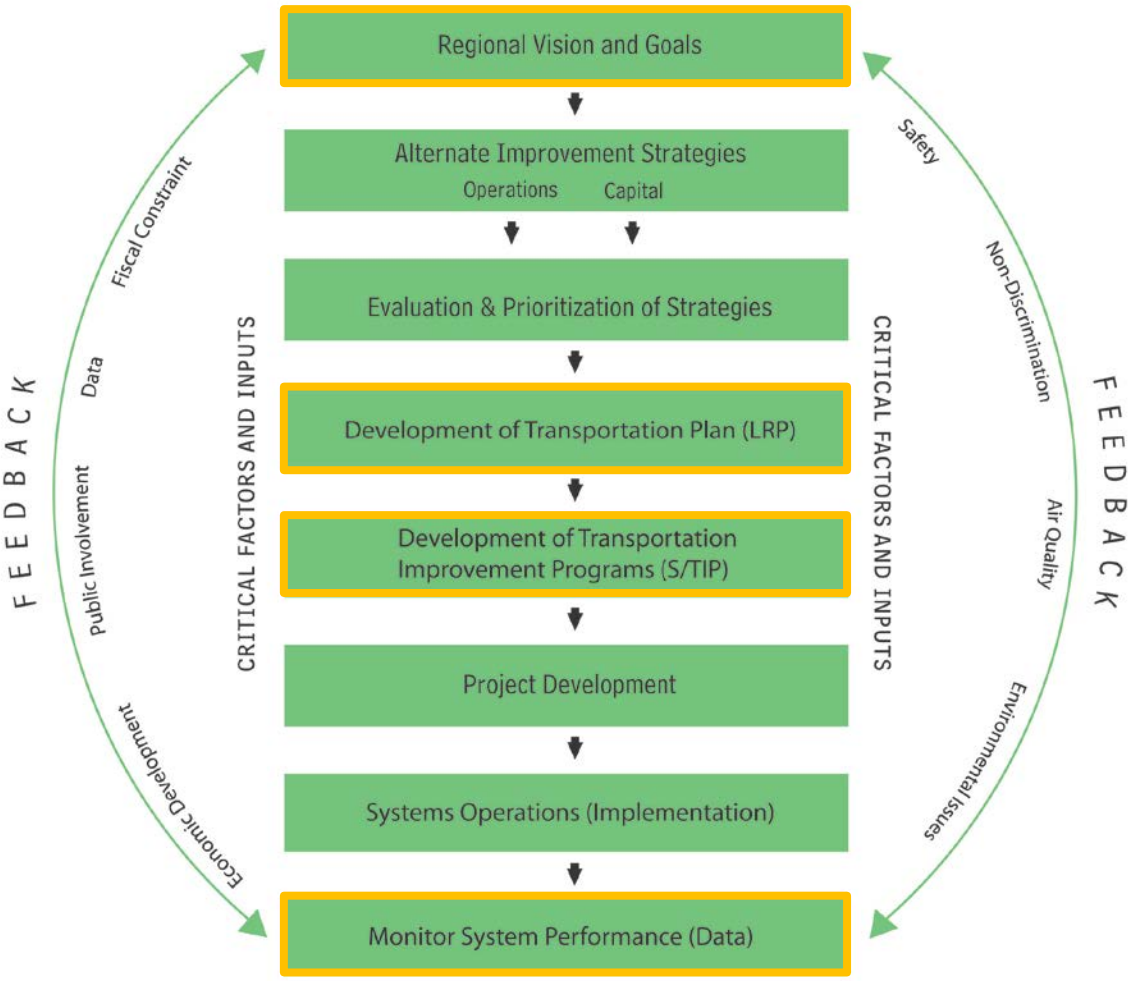
Based on these cases, the project team provides a framework that describes how MPOs can strongly embed health considerations into the planning process. The framework focuses on aspects of the planning process such as regional vision and goals, the Long-Range Transportation Plan (LRTP), Transportation Improvement Program (TIP), and system performance monitoring, as highlighted in Figure 2 (see the section on Metropolitan Area Transportation Planning Products for more information on these MPO plans).

This chapter:

- Presents observations from a broad scan of 12 MPOs that have demonstrated leadership in integrating health and transportation;
- Describes how the project team selected four MPOs for case studies;
- Presents a framework to describe how health can successfully be integrated into metropolitan planning processes; and
- Provides the four case studies.

As stated in the introduction, this research is specifically focused on how MPOs take a comprehensive and balanced, or holistic approach to health, considering, for example, health implications of safety, clean air, physical activity, and safety, in combination. The case studies and related analysis reflect this holistic approach.

Figure 2: Metropolitan Area Transportation Planning Process. Source: FHWA/FTA TPCB Briefing Book



Methodology

The project team selected the MPOs featured in the case studies from a group of MPOs identified as leading their peers in health-related planning activities. MPOs were identified from a review of relevant webinar series and national reports and from recommendations from Federal Highway Administration (FHWA) staff. The authors researched and confirmed innovative planning activities in the areas of transportation and health of 12 MPOs. Appendix C Table 1 lists the MPOs, their primary partners and initiatives, areas of health and transportation connections, and resulting relevant plans and products.

Health Topics Considered by MPOs

These leading MPOs are dispersed throughout the country, but with concentrations in the western States and in the Midwest. The topical areas through which these MPOs are considering health include:

- Active transportation (8)
- Broad planning (7)
- Health impact assessments (5)
- Access to food (5)
- Aging in place (2)

Safety and air quality are key topics for the integrated approach to health in transportation, as defined by the project team, but they are not identified as a separate topic in Appendix C Table 1 because they are standard established practice for MPOs. Although standard MPO approaches to safety and air quality are not considered innovative practice for this report, the incorporation of the two topics within a balanced and comprehensive approach to health is considered an innovative practice for this research.

MPO Activities Incorporating Health

In addition, the MPOs in the scan demonstrated the following specific activities:

- Inclusion of health-related concepts or goals in their Metropolitan Transportation Plans (MTPs) (7)
- Recipients have received grants from Federal agencies to engage in sustainability and health activities (6)
- Development of assessments to measure health impacts of transportation projects (5)

Many of these MPOs have also developed Complete Streets programs,[51] integrated health and transportation into land-use plans, provided guidance on transportation for aging residents, and conducted studies related to health and transportation.

Notably, nearly all of the MPOs reviewed have active engagement of public health and other partner organizations to extend the reach of their transportation programs to consider health. In some cases, the MPOs are active contributors to the work of health agencies and organizations, resulting in a two-way relationship in which transportation organizations learn from and contribute to the work of the health organizations. The two-way relationship might be interpreted as: 1) using the participation of the health sector to bring health considerations into the MPO process and considering health goals in transportation decisions; and 2) bringing transportation into public health programs and activities through introducing transportation considerations explicitly into public health decisions.

[51] According to the National Complete Streets Coalition, Complete Streets are roads designed and operated to enable safe access and travel for all users and modes. (http://www.completestreets.org)

Selection Criteria

While all 12 of the MPOs in Appendix C Table 1 have notable accomplishments related to consideration of health that merit further evaluation, the project team selected three MPOs for this paper to provide a diverse picture of the range of strategies that MPOs and their partners are using to connect health and transportation. The project team selected Nashville Area MPO, PSRC, and SACOG based on the following factors:

- History of transportation and health activities
- Institutionalization of health impacts into transportation plans and programs
- Leadership of MPO staff and policy board in health-related activities
- Recipient of Centers for Disease Control and Prevention (CDC) Communities Putting Prevention to Work and/or U. S. Department of Housing and Urban Development (HUD) Sustainability grants
- Strong relationships with health partners

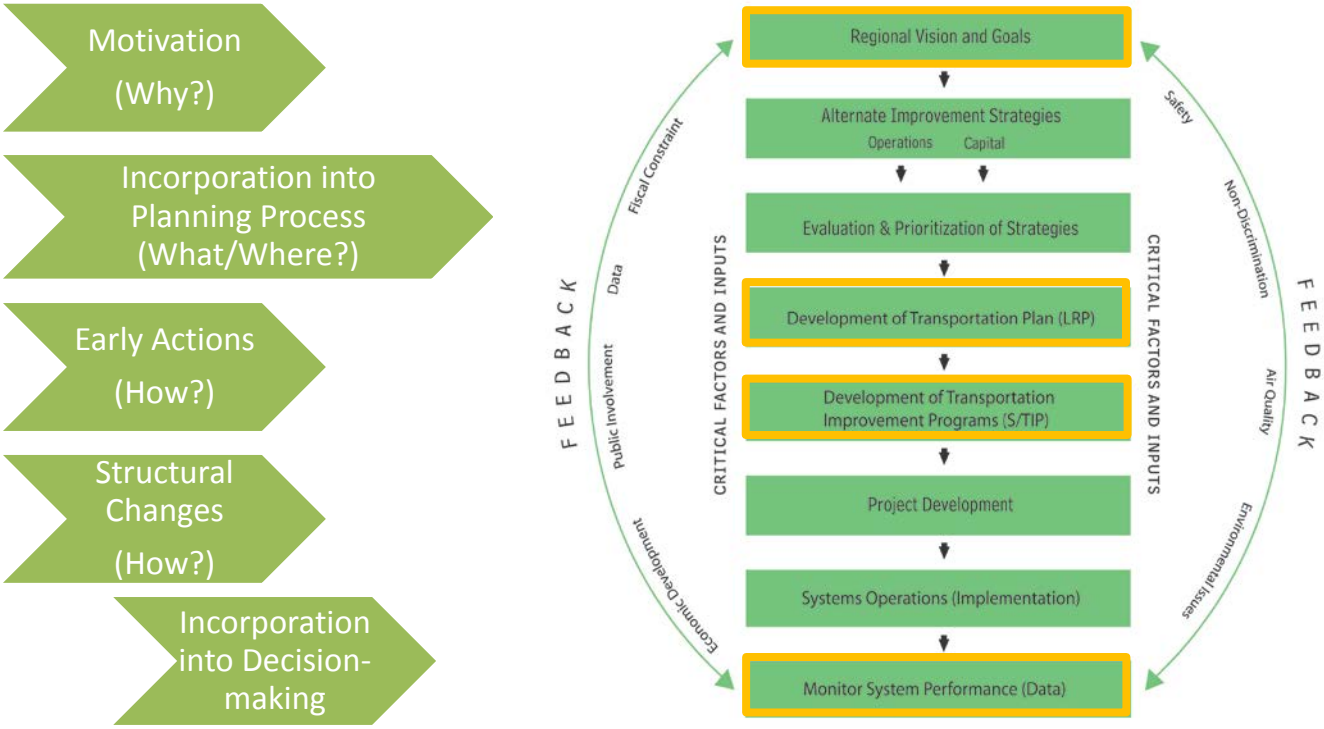
After completing these three case studies, the project team added SANDAG to include an MPO that has worked on health impact assessments and is focused on capacity building, and to build upon the connection between State and MPO initiatives found in California.

Each of the case studies outlines the background and structure of the MPO, motivations for its transportation and health activities, and the related focus areas for the MPO, including how the MPO defines the relationship between transportation and health. The case studies also summarize and provide links for plans, studies, and programs that have resulted from planning activities and the roles of partner organizations in these initiatives. Finally, each case study summarizes the MPO's evolution in incorporating health and main observations and challenges, including a timeline of the major health-related activities.

Synthesis and Framework

The four MPOs featured in the case studies have all produced visible and significant results through connecting transportation planning activities to health considerations. However, they differ in their sources of motivation, the parts of the planning process they have focused on, and the steps they have taken to incorporate health. These results and different approaches represent a flexible framework for connecting health and transportation. The framework helps explain why an MPO would pursue these connections; where in the planning process these connections can occur; and how these connections can be made. The components of this framework are displayed in Figure 3.

Figure 3 Components of Framework



Motivation

Based on the four case studies, MPOs often initiate a comprehensive approach to integration of health and transportation in response to, or with support from, an external policy direction, partner initiative, expression of community interest, or most commonly, some combination thereof. The motivator can be directly health-related, such as the Tennessee Obesity Taskforce (TOT), a statewide obesity prevention initiative, or have indirect connections to health, such as the concerns and requirements for air quality and climate change in California. The motivation can lead to contracting of MPO services, such as SANDAG's work for the county health agency; direct MPO action, such as Nashville Area MPO's participation in TOT; or interest and participation of others in the MPO, such as the involvement of the county health departments with PSRC. More generally, a cultural shift towards healthier lifestyles that attracts the attention of local leaders and the public can facilitate MPO consideration of health, as was reported by PSRC.

An external interest in health implications of transportation can logically lead MPOs to identify new planning tasks in their Unified Planning Work Program, such as examining pedestrian or bike access to transit, schools, or healthy food. Additionally, analytical efforts, such as SACOG's investment in GIS data on nonmotorized facilities and collaboration with others on quantifiable benefits of such facilities, might lead to new interest in physical activity and health issues for the MPO as a whole. These various sources of motivation, with examples from the case studies, are provided in Table 1 and Appendix C Table 2.

Table 1: Motivation/Input for the Case Study MPOs

MPO	Motivation/Input Examples				
	Partner Initiatives	**Community Interest**	**Local and State Government Initiatives**	**National Priorities and Programs**	**Research and Analysis**
Nashville Area MPO	Safe Routes to School (local health department)		Tennessee Obesity Taskforce	CDC grant and CDC partnership	TIP criteria from data analysis
PSRC	Local county health departments		MPO member interest	CDC and HUD grants	Research study of land use, transportation, air quality, and health
SACOG	Rural Urban Connection Strategy	Air quality, quality of life and rural issues	State-mandated Sustainable Communities Strategy	HUD grant	I-PLACE^{3}S health modules
SANDAG	County's Live Well, San Diego! Initiative			CDC grants	Model health module, HIA training, mapping

Integrating Health throughout the Transportation Planning Process

Most MPOs that have begun to engage in health activities are still early in the process and have yet to fully integrate health into their transportation planning. However, the case studies and expanded summary of 12 MPOs show components of a robust but evolving approach to how transportation planning can assume a role in creating healthy communities. Based on the analysis for this report, the project team identified critical opportunities for comprehensive structural integration of health into the transportation planning process. These opportunities lie in four main steps in the planning process, as illustrated in Figure 2 and highlighted by case study MPOs in Table 2 with further detail in Appendix C Table 3.

Although presented chronologically, from vision to plan to investment decisions, MPOs can begin to incorporate health at any of these stages, depending on opportunities and challenges. The different levels of emphasis on health in each step for the case study MPOs are shown in Table 2 and Appendix C Table 3 by the intensity of the color, where darker blue means greater integration. PSRC has followed a more chronological and sequential approach, with relatively more emphasis on vision and goals, while the Nashville Area MPO instead focuses on targeting investment decisions. SACOG provides balanced treatment across the three steps. SANDAG is

also proceeding fairly simultaneously, but with a main focus on supporting factors, such as capacity and tool building.

Table 2 Incorporation of Health into the Transportation Planning Process by Case Study MPOs

MPO Name	Regional Vision and Goals	Development of Transportation Plan	Development of S/TIP	Monitor System Performance
Nashville Area MPO				
PSRC				
SACOG				
SANDAG				

Darker colors signify greater progression in activity

Table 2 also reflects a critical and broad role for performance measures at all stages of the transportation planning process to support consideration of health. An integrated transportation planning process for healthy communities would necessarily include *broad application of performance measures* to:

- Translate broad policy goals into measurable, expected results;
- Assist the MPO to track progress and communicate results over time;
- Establish a historic database linking health with transportation; and
- Establish a basis for future support for transportation and health planning, based on empirical relationships, including as a factor in transportation investments.

Specifically, performance measures can respond to community or partner input to a vision plan; translate goals in the MTP into outcomes that are understandable and important to stakeholders and the public; and define a baseline at the beginning of an MTP or TIP horizon, and for monitoring and reporting results of plans or investments.

Early Actions and Structural Changes

The MPOs in the case studies engaged early in a mixture of outreach, communications, and technical research activities (see Table 3) that can eventually lead to structural changes in the MPO's planning process, as shown in Table 4.

These *early actions* occur within the established MPO planning process, and include informal participation of health partners in the development of the MTP and TIP but not necessarily the addition of goals in the MTP or new health criteria in development of the TIP. These actions reflect use of important messaging and relationship-building tools that over time can establish the foundation for improved understanding and future levels of support for health-related activities necessary to allow MPO leadership to engage in more structural changes.

Structural changes result in concrete, measurable, and institutionalized integration of health considerations into the core stages of the metropolitan area transportation planning process,

as described in Table 4. Structural elements may be the most visible evidence that MPOs are integrating health considerations into transportation planning in substantial ways that may actually influence or change decisions, and may have the potential for long term continuity. Structural aspects of the planning process reflect the formal "3-C" (Continuing, Cooperative, and Comprehensive,) multimodal planning process called for in joint Federal transportation planning requirements.[52] Structural changes have a greater likelihood of continuing through shifts in political leadership and policy priorities, whether at national, State, regional, or local levels.

The early actions and structural changes are two pieces of the framework for a full integration of health considerations in transportation plans and programs. While the order and extent may vary between MPOs, as captured in the timelines presented in the case studies, the actions listed in Table 3 and Table 4 provides a spectrum within the framework of how MPOs integrate and institutionalize health into their planning activities.

Considering the potential for introducing new expectations for the planning process and metropolitan area transportation system itself, it is understandable that the case study MPOs are undertaking these new approaches incrementally, as shown by the intensity of the color in Table 3 and Table 4. This demonstrates the value of making progress at one stage before undertaking another. Although these MPOs have approached health incrementally, they also demonstrate high level policy support necessary to consider health in regional decisions. Overall, the case study MPOs demonstrate an incremental approach to considering health, building on initial efforts to expand toward more comprehensive approaches as MPOs, staff, and stakeholders gain an understanding of health implications of transportation actions.

Table 3 Early Actions by MPOs to Incorporate Health into the Planning Process

Action	Nashville Area MPO	PSRC	SACOG	SANDAG
Define and document connections between health, land use, and transportation				
Engage and enlist support of partners				
Identify ways for public health partners to participate in MPO activities				

Darker colors signify greater progression in activity

[52] Metropolitan area transportation planning processes are governed by Federal law (23 USC §134 and §135). http://www.fhwa.dot.gov/planning/processes/metropolitan/legislation_and_regulations/

Table 4 Structural Changes by MPOs to Incorporate Health into the Planning Process

Action	Nashville Area MPO	PSRC	SACOG	SANDAG
Incorporate health into MTP goals				
Develop staff and technical capacity in health-related approaches and tools				
Establish standing technical or other advisory committees with designated responsibility to oversee health topics				
Formalize participation of health stakeholders into planning process				
Incorporate health into TIP project selection criteria				
Develop performance measures that capture impact on health				

Darker colors signify greater progression in activity

The remainder of this section expands upon early actions and structural changes, including examples. Additional examples of how the MPOs studied incorporate health at different stages of their planning process are detailed in the four case studies following this section. These and other best-practice MPOs can serve as models for other MPOs. The case study MPOs noted that they continue to benefit from examples of successful practice in this area.

Early Actions

MPOs that are in early stages of building support for the consideration of health in transportation planning use communication and closer ties to partners as early actions that may eventually lead to structural changes. The visibility of structural activities, and the potential policy commitment that these activities entail, necessarily requires strong support among MPO leadership, partners, stakeholders, and citizens, backed up by technical staff capacity to complete the analysis necessary to support possible new expectations. Early actions can develop this level of support and capacity through the following:

1. **Define and document the connection between health, land use, and transportation**. The establishment of this connection is the foundation for communication and partnerships from which greater support for health and transportation planning is built. Persistent and clear messaging throughout the planning process is among the most valuable tools for building leadership and community support. The messaging should focus on co-benefits of health-based transportation planning, where solutions to transportation problems or needs can also benefit the environment, economy, and health. An example of such messaging is describing pedestrian and bicycle improvements as “active transportation” designed to increase the activity levels of citizens, and as more than a modal alterative to meet mobility needs. Some MPOs have focused on research studies and data collection to establish this link; for example,

SACOG uses models and research by partners to help establish the transportation, land use, and health connection in the region, and contributes to advancement of the state of the practice in related analysis and modeling nationally.

This messaging can allow the MPO to brand their planning process, plan, decisions, and ultimately, mission, as contributing to a healthy community.

2. **Engage and enlist the support of partners and the public**. Partners are critical to introducing linkages between transportation and health, advancing consideration of health in MPO agendas, and building support for transportation decisions among a broad constituency concerned with health.

   Partner organizations are often the most critical avenues for gathering data and extending outreach efforts on the importance of connecting health with transportation planning. Partners introduce new information, tools, and constituencies and potentially broaden the base of support for transportation decisions. Potential partners include:
   - State, county, and city public health agencies
   - Air quality management organizations
   - Universities and school districts
   - Land use planners and developers
   - Community and advocacy groups

   MPOs that successfully engage health partners used the following strategies:
   - Seek partners at local, regional, State, and national levels. Organizations and agencies at State and national levels often conduct research and pilots at local or regional levels, which have benefited MPOs.
   - Use partners to build political support within the MPO leadership and public support in the region.
   - Use partners to leverage funding and support outreach. Many organizations in the health arena with financial resources, whether public, private, or non-profit, may respond favorably to partnerships with transportation groups (see NGO Advocacy, Research, and Programs section).

   Since health is an issue that the public is more likely to understand and value than aspects traditionally related to metropolitan area transportation planning process, such as traffic delay or road condition, MPOs can use this interest as a means to enhance essential public and stakeholder involvement in broader on-going MPO activities.

3. **Find ways for public health partners to participate in MPO activities**. Once partners begin to collaborate with MPOs, they can play roles that utilize their expertise and any available resources (data, financial, staff, or new partners) to help shape transportation plans and programs. Partners can be given membership or advisory roles on committees that review, recommend, or approve transportation plans and projects. Public health may be a topic that initially motivates new members of the public to participate in

advisory committees or other aspects of the MPO process, thereby strengthening the process. This additional participation is valuable because many MPOs encounter difficulty interesting the public in a process that can seem abstract, technical, and distant from immediate concerns.

Partners can provide direct feedback on relevant plans or projects, as well as formal input into the development of transportation plans and other planning processes. Finally, partners can be involved in the pursuit of funding opportunities for broader initiatives, such as CDC CPPW and HUD Sustainability grants or from other State, local, on foundation sources. Through on-going participation, new partners can gain an understanding of the transportation planning process itself, including the range of goals pursued and the need to trade-off priorities, including health, in making decisions.

Structural Changes

With partner involvement and clear and consistent messaging on the health benefits and impacts of transportation projects, MPOs can begin to identify opportunities to make structural changes to begin considering health throughout their planning process. The case study MPOs provided the following recommendations in approaching structural change to incorporate health into the planning process:

1. **Start small with modest and understandable strategies that have co-benefits in other priority areas**. For example, prioritization of active transportation and improving access to healthy food provide mobility and accessibility benefits alongside social and environmental benefits, in addition to improving public health. Emphasizing co-benefits, particularly through using performance measures, can easily enlist support from partners and community groups. As feasible, develop clear high level goals in the MTP that support establishment of these strategies.

2. **Consider health in project screening or selection criteria**. The team's research identified project selection or screening criteria that can include:
    - A requirement for Complete Streets features such as bicycle and pedestrian infrastructure (SACOG and SANDAG);
    - Assessment of access to grocery stores (Nashville), healthy food (SANDAG), or parks (SACOG); and
    - Determination of potential air and water pollution impacts upon surrounding communities (PSRC), among other factors.

    These criteria should reflect the larger goals of the MPO, its partners, the State, and the Federal government, beyond traditional transportation goals; as applicable, these can include health, social, environmental, and economic goals.

3. **Consider designating funding for projects that meet health-related goals**. Aligning funding priorities to support accomplishment of health-related goals is one of the strongest assurances that planned transportation projects will result in beneficial health outcomes. Nashville Area MPO called for 15 percent of its Surface Transportation

Program (STP) funding to be used for active transportation projects. This was a major change in how the MPO programs available funds and could only be achieved after building strong public support. This structural step in the planning process is one most likely to be accomplished after making considerable progress on early steps in the planning process, as the Nashville Area MPO has.

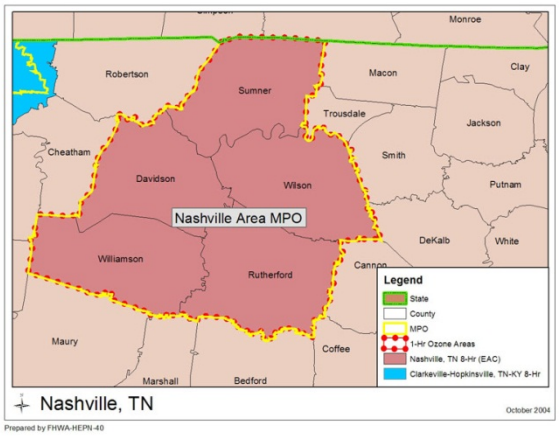
4. **Develop performance measures that account for health outcomes***.* MPOs can develop performance measures to assess how transportation projects impact health. These measures can serve a variety of critical functions in the transportation planning process:
    - Translating goals in vision, scenario, or long range plans into measurable and understandable results
    - Setting targets for long range goals in the MTP
    - Comparing the benefits of alternative investments
    - Project screening or selection criteria for the TIP
    - Monitoring whether expected results from plans or projects are actually realized and communicating progress to legislators and the public

    Partners can be involved in developing and tracking progress using these measures, recognizing that health benefits can be difficult to measure at a project scale or locally, and may in practice be easier to capture at the regional level considered by MPOs. The use of direct and proxy measures (e.g., increased walking or bicycling trips or reduced vehicle miles travelled as proxies for physical activity) can help build future support for more advanced applications of transportation and health planning through communication of measurable health-related choices and outcomes. Public health analysts can then use these transportation outcomes to estimate specific health outcomes, for example, related to obesity.
5. **Consider long-term capacity for health-related transportation research and analysis**. MPOs that are able to achieve structural change have the ability and assume a new responsibility to develop documents and policies that connect transportation programs and projects with their health impacts. Both Nashville Area MPO and SACOG plan future data collection and analysis to support activities linking transportation and health. With the support of Federal grant funding, SANDAG has been able to hire staff for health-related tasks and fund work on health-related tools throughout the agency. The establishment of methods to link transportation projects with health outcomes can also assist if MPOs and their partners choose to undertake formal health impact assessments. The routine use of data, performance measures, and forecast tools to analyze health implications can ensure the continuity and longevity of planning for transportation and health activities by establishing these considerations within the technical analysis that is the core of the MPO planning process.

Case Study: Nashville Area MPO

Background

The Nashville Area MPO covers a planning area of approximately 1.5 million people. The MPO includes the Nashville-Davidson and the Murfreesboro urbanized areas, as well as other small cities and rural communities within the planning area. The MPO Executive Board consists of elected leaders from all communities in the planning area with a population of at least 5,000, and most communities send their mayors to the monthly board meetings. The MPO Executive Board programs the Federal transportation funds and has project selection authority for the urban Surface Transportation Program (STP) funds. While the Tennessee Department of Transportation makes funding decisions for rural areas outside of the MPO boundary, the MPO works with these rural areas to document needs and coordinate the development and implementation of transportation solutions. The MPO therefore serves a unique role in planning for rural needs and delivering its metropolitan planning program.



MPO staff has long been engaged in linking transportation planning to public health. The linkages began when MPO staff and public health officials developed relationships through working on initiatives such as Safe Routes to Schools, and they grew under supportive leadership from the MPO Executive Director. Through the staff's vision for bringing public health into MPO activities, the Nashville Area MPO became a leader in concurrent statewide efforts to combat obesity.

According to CDC behavior surveys, Tennessee residents are among the most physically inactive, overweight, and obese people in the United States (measured on a variety of health metrics and compared to other States). Reacting to these rankings and the need to reduce preventable diseases related to obesity and inactivity, stakeholders from around Tennessee came together in 2007 to form the Tennessee Obesity Taskforce (TOT) to develop a statewide plan to combat obesity. The resulting plan, "Eat Well, Play More Tennessee," was published in September 2010. More than six hundred organizations throughout Tennessee, including the State health and transportation departments, are actively working to implement the plan by 2015 (the project currently has grant funding for implementation through 2013). The TOT has a Built Environment and Transportation (BEAT) team that has overseen the adoption of Complete Streets policies, data gathering on school siting, and expansion of Safe Routes to Schools programs throughout the State.

Health Activities

This section describes the MPO's various health-related activities, which are presented along a timeline at the end of the case study.

Motivation and Focus Areas

The Nashville Area MPO reports that it uses transportation planning to address obesity, asthma, traffic injuries, and other health conditions that have been linked to decreased physical activity as part of daily travel as well as worsening air quality, in part by mobile air sources such as vehicles. MPO staff focuses on active transportation, food access, and bicycle/pedestrian safety due to their disease-prevention and public health benefits.

The statewide agenda for obesity prevention has been one strong driver of Nashville Area MPO's attention to health issues. Nashville Area MPO staff served as a co-chair of the TOT from 2010 to the end of 2011, which has kept the MPO at the forefront of strategies to increase physical activity and access to healthy food, as well as efforts to collect data to measure progress. Through its work with TOT, MPO staff cites better understanding of public health practices and have had the opportunity to educate public health staff about the relationship between transportation and obesity.

The TOT and the resulting five-year plan is only one motivation for Nashville's integration of health into their transportation planning activities. MPO staff count their relationships with Federal, State, and local health partners as their strongest impetus for health activities. Through surveys and committees, the MPO staff has a close working relationship with the CDC, with whom they exchange policy recommendations and serve on review committees. In addition, the Nashville Area MPO has over a decade of experience working with a local health department for Safe Routes to School in Nashville. This experience and that of working on the TOT helped enhance the focus on bicycle and pedestrian planning to include health outcomes in addition to focusing on mobility and safety for bicyclists and pedestrians. Stakeholders and citizens throughout the MPO area are increasingly recognizing bicycle and pedestrian infrastructure as a way to encourage active transportation and improve the health of its citizens.

Integration of Health into RTP and TIP

Nashville Area MPO's 2035 regional transportation plan (RTP), published in December 2010, identifies health as a key component of regional quality of life, and allocates funding in accordance with economic, environmental, and health RTP goals. After drafting general goals for improved quality of life, MPO staff noted that the most appropriate solutions to meet these goals simultaneously addressed public health, economic and environmental sustainability objectives. These solutions included mass transit, walkable communities, and enhancement and preservation of the roadway system with a complete streets and technology focus. As a result, the MPO developed project evaluation criteria to address health, economic, and environmental impacts of transportation projects.

Among the most notable accomplishments of the Nashville Area MPO is its designation of STP funding, which is its primary Federal funding source for all surface transportation, for nonmotorized, transit, and technology and operations projects, as follows:

- Fifteen (15) percent of funds[53] is dedicated to projects for active transportation (bicycle and walking);[54]
- Ten (10) percent of funds is dedicated to transit projects (which is in addition to other funding from the Federal Transit Administration);
- Five (5) percent of funds is dedicated to intelligent transportation systems (ITS) and operations projects;
- Seventy (70) percent of STP funds cover traditional roads projects. The MPO allocates funding based on a set of project selection criteria that includes nonmotorized enhancements, health impacts, safety, congestion reduction and additional criteria as part of road projects.

Projects funded under the general STP funds (70 percent) go through project selection during the RTP and Transportation Improvement Program (TIP) development processes. For the 30 percent of STP funds dedicated to nonmotorized, transit, and ITS, the MPO opens the call for applications after the publication of the TIP, which describes the types of projects to be included, rather than specific projects. With the new funding allocations, seventy percent of projects in the RTP contain nonmotorized enhancements, up from an estimated two percent in the previous RTP.

The current TIP, adopted concurrently with the RTP, represents the first iteration of projects selected under this new funding distribution. The project selection criteria for general projects include a multi-modal and multi-functional data analysis focusing on mobility, safety, multimodal elements, freight, future growth, and health elements. As part of its project-level analysis, MPO staff delineated grocery stores to determine proximity and access and to emphasize the corridor's potential to connect people to healthy food. The MPO will use new food desert data to improve this project-level analysis in the future. MPO staff also identified "high health impact areas," signifying areas with greater health disparities. Due to limited availability of health data at a fine scale, the MPO uses census data with high concentrations of low-income, minority, and elderly populations as a proxy measure for the locations of populations with higher rates of chronic disease and health disparities. The MPO more favorably evaluates projects that improve physical activity, such as through including nonmotorized options, or access in these "high health impact areas."

The TIP includes a policy safeguard to ensure that selected projects maintain their nonmotorized enhancements during any revisions or budget reductions. The MPO adopted 15 policies in the TIP that describe budget management for included projects; these policies

[53] Funds include future allocations or appropriations of urban STP funds programmed in the TIP. The MPO will honor existing commitments to "worthy" projects already in the 2011-2015 transportation improvement program.
[54] The MPO has already awarded the first round of funds for active transportation projects.

include enforcing the scope of work described in the RTP and adding a checkpoint before project implementation to ensure consistency with the RTP.

In June 2011, a team contracted by the U.S. Centers for Disease Control and Prevention visited the Nashville Area MPO to conduct a pre-evaluation assessment of physical activity initiatives as part of a larger project to assess local programs and policies that impact nutrition, physical activity, and obesity. The team noted the progress of the MPO's initiatives, focusing on those included in the RTP, and commended staff commitment and leadership. The team recommended Nashville for further evaluation as a model for peer organizations. The Center of Excellence for Training and Research Translation, a CDC-supported Prevention Research Center at the University of North Carolina, has also conducted a favorable policy evaluation of the MPO's targeted funding for active transportation.

Active Transportation

The Nashville Area MPO's bicycle and pedestrian activities have grown more robust in recent years, building on a regional bicycle and pedestrian study that was part of the development of the 2035 RTP. Approximately 2,400 people provided input about barriers and opportunities for bicycle and pedestrian networks, frequently citing health as a motivation for improving these networks. The MPO has a citizen-based Bicycle and Pedestrian Advisory Committee with a formal role in reviewing and scoring nonmotorized projects (15 percent of STP funds). The advisory committee helped shape the Bicycle and Pedestrian Study and developed qualitative and quantitative scoring criteria included in the Bicycle and Pedestrian Study that are used in addition to the general RTP project selection criteria to measure the broader value, reach, and impacts of proposed projects. Related future activities include analyzing bicycle and pedestrian crash data from an equity perspective to understand if certain communities or populations are more prone to nonmotorized crashes, with an eye towards targeting funding to these areas.

Partners

Through its work on the TOT, the Nashville Area MPO has formal and informal relationships with health stakeholders throughout the region and State. Additionally, its presence in the State capital has enabled close relationships with the State departments of transportation, environment and conservation, and health and with the CDC. The CDC has assisted the MPO in outreach presentations on transportation and health linkages, engaged in data sharing, and provided representation on the MPO's steering committee for the regional household travel survey. The region's largest county health department (Nashville-Davidson) has a seat on the Bicycle and Pedestrian Advisory Committee and the Regional Transportation and Health Study steering committee. MPO staff note that they are actively engaged in the public health arena, in terms of sharing transportation strategies and expertise that can shape public health policy.

Persistent case-making and communications led to a significant shift in funding towards active transportation projects.

MPO staff observed that the **active citizen-led advisory committee** is unique and notable for its role in project selection of nonmotorized projects.

Involvement in **multi-agency policy efforts throughout the State** gives the MPO clout and connections to improve its capacity for planning.

Simple transportation strategies with proven health benefits are an easy first step for MPOs to integrate into their planning programs, prior to engaging in complex assessments.

Photo Sources (clockwise from top left): The Tennessean, Tennessee Department of Transportation, and Wesley Aldridge. All via Nashville Area MPO

Evolution of Activities

Nashville Area MPO recognizes that there are many transportation strategies that can be implemented to improve health impacts, such as increasing mode shift to biking and walking and improving access to healthy food, and they plan to focus on those strategies in the near term. In the future, the MPO will also focus on data collection and measuring health impacts in its communities, to support existing and future investment strategies. Data correlations between transportation improvements and obesity rates are difficult, because many factors influence health, but the MPO staff are learning about ways to translate transportation data to quantify the impacts of policies. The MPO is planning to add a health component to its next household travel survey with questions related to physical activity, food access, and health for all household members. A subset of respondents will participate in a health study in which they wear devices that measure their physical activity and answer a more detailed questionnaire about how their built environments impact health behaviors. This data will establish a baseline for future studies.

Nashville Area MPO currently uses systems-level analysis for performance measurement, and they would like to make an overall shift to performance-based planning at the project level. While the MPO is involved in some small-scale health impact assessment (HIA) pilot programs, the MPO staff plan to focus on the many "obvious" solutions that will bring health benefits before using HIAs to select solutions.

Observations and Conclusions

- **Persistent case-making and communications led to a significant shift in funding towards active transportation projects.** MPO staff and partners cite numerous, ongoing conversations and a dedication to educate the MPO Executive Board members about the multiple benefits of designating 30 percent of STP funds for non-traditional projects (and 15 percent for active transportation projects). Staff also noted that a random dial phone survey of 1,100 households found a significant desire for more transit and pedestrian facilities, which was helpful in convincing leaders.
- **MPO staff observed that the active citizen-led advisory committee is unique and notable for its role in project selection of nonmotorized projects.** While the MPO Executive Board makes final decisions for project selection for all projects, Nashville Area MPO gives a designated role to a citizen-led Bicycle and Pedestrian Advisory Committee to score and rank projects for funding dedicated to active transportation projects.
- **Involvement in multi-agency policy efforts throughout the State gives the MPO clout and connections to improve its capacity for planning.** In addition to leading the TOT, Nashville Area MPO has helped author State legislation that allows regional transportation authorities to dedicate funds for mass transit, and the MPO created the Middle Tennessee Mayor's Caucus to give its elected leaders a non-regulatory forum to discuss policy topics. Nashville Area MPO's leadership role in these efforts improves its own knowledge of regional needs and strategies and improves its reputation among partners.

- **Simple transportation strategies with proven health benefits are an easy first step for MPOs to integrate into their planning programs, prior to engaging in complex assessments.** Data and quantification of health impacts is important as support for policy changes, but most MPOs can be most effective by implementing the simple, known transportation strategies for improving health, like active transportation and access to healthy food. MPOs with limited time and resources should focus on these "obvious" strategies before investing in sophisticated data collection and correlation.

Timeline

Year	Health-related Activity
2005	• Nashville Area MPO publishes the 2030 LRTP; an estimated two percent of projects have non-motorized enhancements.
2006	
2007	• Tennessee Obesity Taskforce established; work begins on statewide plan. • MPO begins planning for its 2035 LRTP.
2008	• Regional Bicycle and Pedestrian Study begins
2009	• November: MPO adopts its Bicycle and Pedestrian Study
2010	• September: Taskforce adopts "Eat Well, Play More Tennessee" • December: MPO adopts its 2035 LRTP and 2011-2015 TIP; seventy percent of road projects have non-motorized enhancements; fifteen percent of STP funds are targeted for active transportation projects.
2011	• MPO Bicycle and Pedestrian Advisory Committee and staff develop the criteria for the Active Transportation Program and issue the call-for-projects for the first round of funding.
2012	• January: First round of Active Transportation Program projects are awarded for a total of 2.5 million in Federal U-STP dollars. • Data collection for the regional household travel survey, which will include physical activity, food access, and health behavior components • Development of Activity Based Travel Demand Model that will help to incorporate physical activity and health considerations into the travel demand modeling process.
…	
2015	• Planned adoption of 2040 LRTP • Implementation complete for the "Eat Well, Play More Tennessee"

Case Study: Puget Sound Region Council

Background

The Puget Sound Regional Council (PSRC) covers a transportation management area of approximately 3.6 million people. The MPO encompasses Kitsap, Pierce, King, and Snohomish counties and the Seattle, Tacoma, and Everett urbanized areas. The MPO membership also includes many other smaller cities and rural communities within the planning area, two Tribes, and various transit agencies.

PSRC was created in 1991 under authority embodied in Federal and State laws for transportation, air quality, and growth management but its focus is now on regional transportation, growth management, and economic development. PSRC distributes Federal funding, produces regional data to support planning, and establishes a vision and steps needed to achieve that vision.

PSRC's member representatives meet annually as the General Assembly but elects members to a governing Executive Board, which meets monthly. Both the General Assembly and the Executive Board use weighted votes based on population. The Transportation Policy Board and Growth Management Policy Board consist of member representatives and make recommendations to the Executive Board.

According to CDC data, Washington State has relatively higher physical activity rates and mid-range obesity rates compared to other States.[55] In addition, a number of initiatives within the region have sought to connect public health and the environment, especially around issues such as active transportation, climate change, and access to healthy food. Regional leaders in these efforts include PSRC, its members (in particular, its four county public health departments), and the State government. Initiatives include the following:

- In 2003 the Washington State Department of Health launched an initiative to increase active living through environmental and policy changes as part of the Washington State Nutrition and Physical Activity Plan, which was updated in 2008.
- The Puget Sound area was the site of a major research study (2002-2004) that examined the linkage between land use, transportation, air quality, and health (LUTAQH), funded by the Federal Transit Administration.
- Healthscape, a second phase of LUTAQH, was launched in 2006, with a focus on the development of two tools: a benefits calculator for nonmotorized transportation projects and a development impact assessment tool.
- A series of Federal grants has funded partnerships to build healthier communities through policy, systems, and environmental change: **A**ction **C**ommunities for **H**ealth, **I**nnovation, and **E**n**V**ironmental **C**hang**E** (ACHIEVE, 2008); Communities Putting Prevention to Work (CPPW, 2010); Community Transformation Grant (CTG, 2011); and Chronic Disease Prevention and Health Promotion Program Grants.

Health Activities

This section describes the MPO's various health-related activities, which are presented along a timeline at the end of the case study.

Motivation and Focus Areas

PSRC has worked with State and local partners to define and expand its involvement in health issues. It has been an evolving process. In the past, PSRC has focused on the health issues of safety considerations in modeling and congestion management, air quality conformity, and greenhouse gas emissions as a State priority for climate change. More recently, PSRC began to focus on the promotion of active living (including nonmotorized transportation) and equitable access to jobs and housing in response to emphases in VISION 2040 and Transportation 2040 (the region's long-range transportation plan, or LRTP) and interest by MPO leadership in health and transportation benefits. Most recently, the Board included health in the list of topics for PSRC to consider for transportation investment prioritization in Transportation 2040.

PSRC's activities around health have been supported by local county public health departments. Public Health - Seattle & King County (PHSKC) has had the longest involvement with PSRC,

[55] U.S. Obesity Trends, http://www.cdc.gov/obesity/data/trends.html and Physical Inactivity Estimate, by County. http://www.cdc.gov/features/dsphysicalinactivity/.

beginning with LUTAQH and a 2004 health issue paper developed to inform the 2008 LRTP update and related policy document. Beginning in 2010, PHSKC has been joined by the Kitsap County Health District, Snohomish Health District, and Tacoma-Pierce County Health Department. The four agencies have partnered in an effort to improve regional public health representation on several PSRC groups, although the partnership so far has been unsuccessful in securing membership to the Transportation Policy Board. The group meets quarterly and has developed a talking points document on public health issues related to land use and transportation, which encompasses air quality and climate change, healthy eating, active living, affordable healthy housing, equity, and safe and injury free transportation. Representing different regions and operating within different political circumstances, the four health agencies have found they are better able to represent the region when working together.

Members of the public health partnership report that their interest in PSRC is a result of a shift in their agencies' overall approach to improving health. Previously, much of the focus was on individual behavior change to improve health, but that has now shifted to policies, environments, and systems that support decisions to incorporate healthy behaviors into daily life (e.g., improving access to healthy foods; making walking to school safe, fun, and convenient). The public health community also shares PSRC's interest in the co-benefits for health, environment, and economic development from addressing transportation issues such as congestion, mode share, and transit investments. For example, reducing congestion and shifting mode share away from single occupancy vehicle (SOV) to transit, walking and bicycling can:

As one public health official noted, "Transportation and public health officials have many common interests and reasons to coordinate and collaborate."

- Improve air quality which reduces rates of heart disease, asthma and stroke,
- Increase physical activity, which reduces rates of obesity and heart disease, and
- Reduce polyaromatic hydrocarbons (PAHs) and other toxics from vehicles, which end up in local waterways, fish, and shellfish.

Integration of Health into Regional Policy and the Long Range Transportation Plan

PSRC has developed VISION 2040, which provides a policy-level land use, economic development, and transportation strategy for the region, and Transportation 2040, PSRC's long range transportation plan and an implementation component of VISION 2040.

VISION 2040, which was adopted in 2008, is the region's policy-level land use, economic development, and transportation strategy for accommodating an increase of 1.5 million people and 1.1 million jobs by 2040. Health is featured prominently in the document, including the following regional goal for transportation: "The region will have a safe, cleaner, integrated, sustainable, and highly efficient multimodal transportation system that supports the regional growth strategy, promotes economic and environmental vitality, and contributes to better public health." VISION 2040's triple bottom line (people, prosperity, and planet) is viewed by the public health partners as recognizing the link between a healthy environment, healthy economy, and healthy people. In addition to continuing PSRC's interest in safety, VISION 2040

calls out other health-related topics, including the built environment and health, air and water pollution from vehicles, and chronic diseases related to exposure to pollutants, physical inactivity and lack of access to healthy foods.

Transportation 2040, adopted in 2010, is PSRC's long range multimodal transportation plan and an implementation component of VISION 2040. Transportation 2040 focuses on providing mobility while improving the region's environmental health and economy. The Transportation 2040 Prioritization Working Group, a subcommittee of the Transportation Policy Board, is working on a proposal for how to prioritize LRTP investments using a set of nine draft measures based on VISION 2040. Although health is not included as its own measure, PSRC worked with its members and public health partners to incorporate health into the definition of several measures, in particular travel, air quality, and Puget Sound land and water. The measures may be used for a variety of applications; first and foremost will be the evaluation of projects in the Transportation 2040 Plan. The intent of the measures is to serve as a scorecard that is accessible for both the public and decision-makers. By including quantitative and qualitative measures, the reported information will enable consideration of factors (including health) that are not included in the PSRC model and benefit-cost analysis results. This is a decision-making tool rather than a funding tool. PSRC has convened a VISION 2040 Monitoring Committee that will identify performance measures for VISION 2040 as a whole. It is anticipated that the nine LRTP prioritization measures will be incorporated into this broader set of measures.

Grants

PSRC and its partners received two grants in 2010 that have health-related components. PHSKC received a Communities Putting Prevention to Work grant from the U.S. Department of Health and Human Services and the CDC to address the leading causes of death in King County: obesity and tobacco. The PSRC applied for and received funding from PHSKC and this grant to develop a bicycle and pedestrian toolkit for local jurisdictions and to integrate health into the LRTP prioritization proposal. The project strengthened the partnership between PSRC and PHSKC by demonstrating that public health was able to offer resources in addition to consultation and technical assistance. PSRC also received a HUD Sustainable Communities Regional Planning Grant for its proposal, Growing Transit Communities, which focuses on facilitating transit-oriented development but includes considerations of equity and affordable housing. Public health partners note this project as an opportunity to apply the more abstract collaboration occurring with the VISION 2040 and LRTP to the community level and in particular to address important public health issues of equity.

Research and Capacity Building

PSRC has been resourceful in identifying a number of ways in which to build its capacity to connect health and transportation planning. In November 2010, it hosted a Federal Highway Administration (FHWA) / Federal Transit Administration (FTA) Transportation Planning Capacity Building (TPCB) Peer Exchange on "Project Prioritization for Regional Long-Range Transportation Plans" where it learned that other MPOs were incorporating health into their LRTPs. At the event, PSRC connected with Translink, the transportation authority for Vancouver, British Columbia, as a resource. This relationship resulted in PSRC's participation in

a one-day symposium in October 2011 on integrating active transportation and health into municipal and regional transportation planning, sponsored by the University of British Columbia's Health & Community Design Lab. The Bicycle Pedestrian Advisory Committee organized a webinar with the Nashville Area MPO on how to frame projects to address active living and health. Finally, PSRC was able to use FTA Section 5307 funding to support regional planning efforts to link the bicycle, pedestrian, and transit networks.

Partners

As mentioned previously, PSRC has strong partners in the four county public health departments, which are represented by staff in the following PSRC groups:

- Growth Management Policy Board
- Transportation 2040 Prioritization Working Group
- Regional Staff Committee
- Regional Food Policy Council
- Regional Project Evaluation Committee
- Bicycle Pedestrian Advisory Committee
- Central Puget Sound Growing Transit Communities Consortium, including:
    - Growing Transit Communities Oversight Committee
    - Equity Network Steering Committee
    - Corridor Task Forces
    - Northgate and Tacoma Catalyst Project Working Groups
- VISION 2040 Monitoring Committee (proposed)

"Show up. If you're not at the table – either the big table or the little table in the back room – you are not going to have a say. – Tacoma-Pierce County Public Health Department official

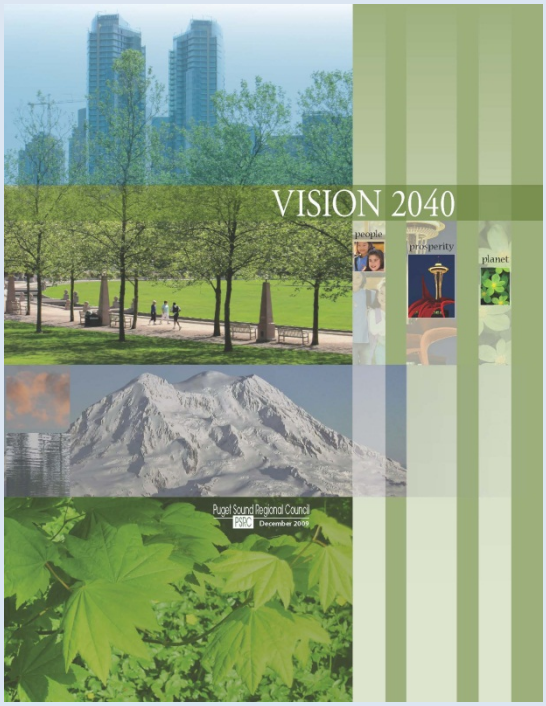
"Five years ago the public health professional's voice was not at the transportation planning table." – PSRC staff

For the Bicycle Pedestrian Advisory Committee, a PHSKC staff member served as vice-chair since 2008 and is the chair as of January 2012.

Evolution of Activities

PSRC views health as an evolving topic in transportation planning. PSRC has been able to successfully document health and transportation connections, integrating health into policy-level documents, and begin to integrate health into considerations for implementation. PSRC sees integrating health considerations into the Transportation 2040 project prioritization and funding process as a possible future next step.

An additional step is broadening understanding about interdependencies between health, environment and economy. PSRC staffers and others have used the sustainability framework within VISION 2040 to make connections between people, planet, and prosperity. Some participants in the transportation planning process still think there are inherent conflicts between environmental or health outcomes and economic outcomes. This dichotomy is a



"You can either see the donut or the hole. The hole is all the exempted funded projects and unfettered growth that we don't influence. The donut is the areas we can and are influencing. If we institutionalize public health in the decision-making process and conversations, we will make a difference." – Tacoma-Pierce County Public Health Department official

Photo source: PSRC

barrier to more fully integrating public health into land use and transportation planning, and to achieving the sustainability goals of VISION 2040.

There is recognition by both PSRC and its public health partners that public health issues need to be chosen strategically to maintain political and public support and that outreach and education on new ideas will be important to build political will. For example, many in the public health community are interested in the use of health impact assessments but not all agree that HIAs are an appropriate priority for all communities in the region at this time, given limited community and agency capacities. For now, public health leadership and staff hope to continue participating in discussions and to provide consultation and technical assistance to PSRC boards and committees.

The public health partners anticipate continuing to provide an advisory role rather than conducting data collection or research in the near future. The public health partners acknowledge that it is difficult to translate public health research into planning because of the long time frame, data limitations, and the current lack of research to quantify the health benefits of specific actions (such as installing 10 miles of sidewalk). The public health partners would like to work with PSRC to improve its technical capacity related to health factors. The public health partners would also like to assist PSRC in the communication of this technical information in manner that is easy to understand and resonates with broader audiences.

Observations and Conclusions

1. **The process of institutionalizing public health into MPO planning can be viewed as a series of steps that reflect the involvement of public health partners.** The process does not have a specific order but can include providing documentation of the connection between health, land use and transportation; aligning public health messages with high level goals of regional planning; gaining membership in work groups and committees; providing input into the development of plans, processes, and documents; sharing information and perspectives with officials and staff; and holding the MPO accountable to institutionalized plans, processes, and documents. In addition, PSRC public health partners have found that bringing funding (grants) to the table strengthens their role as partners.

2. **Public health issues need to be chosen strategically so as to maintain political and public support, but outreach and education are still important to move the conversation forward and build political will.** PSRC public health partners have found that it is important to prioritize issues based on opportunities, capacity, political support, and financial cost, and to stay focused rather than try to be overly ambitious.

3. **Reframing projects to address health provides increased rationale and support for a project.** The PSRC Transportation 2040 LRTP prioritization process is attempting to reframe projects by evaluating them on several qualitative measures that go beyond benefit-cost analysis and modeling.

4. **It is possible to combine and leverage funding opportunities to expand resources for planning for transportation and health.** PSRC has been able to explore health by organizing webinars, participating in peer exchanges, and drawing from FTA Section 5307 funds for regional bicycle, walking and transit planning.

5. **Federal funding requirements for coordination between planning and public health provide a great impetus for MPO action.** For example, by requiring health and equity as part of the application, the HUD Sustainable Communities grant program has encouraged many land use and transportation agencies to consider health.

6. **MPOs benefit from following precedents set by peer MPOs in coordinating transportation planning and health.** Once an MPO becomes aware of actions taken by other MPOs, the easier it is for the MPO and its Board to pursue those same actions due to the success record and the incentive to be competitive with others; PSRC has been able to achieve support from its Board by demonstrating that other MPOs, such as Nashville Area MPO, are conducting similar initiatives.

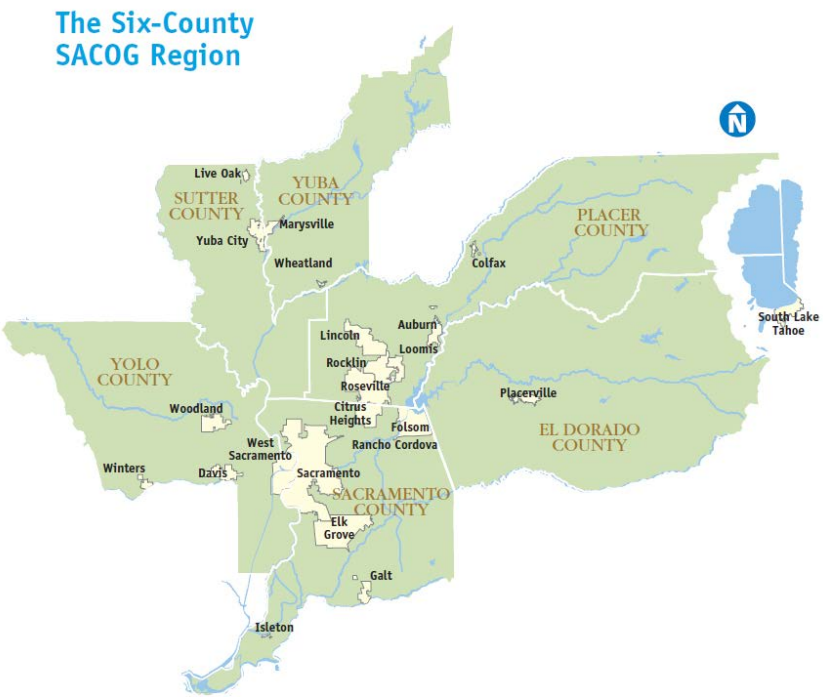
7. **Each MPO will need to adapt to the characteristics of its public health agencies and help those agencies adapt to the MPO.** Public health agencies are not the same in every jurisdiction and they differ in resources, extent of surveillance, and focus areas. This diversity will translate into different levels of involvement and opportunities for partnership.

Timeline

Year	Health-related Activity
2002	• Land use, transportation, air quality, and health (LUTAQH) two-year study begins
2003	• Washington State Department of Health launches the Washington State Nutrition and Physical Activity Plan
2004	• Issue paper for health written and adopted for the Vision 2020 +20 Update • Healthscape (Phase II of LUTAQH) launches and begins development of assessment tools
2005	
2006	
2007	
2008	• VISION 2040 adopted, with significant focus on the importance of health for people, prosperity, and the planet • Washington State Nutrition and Physical Activity Plan updated • Pierce County receives an Action Communities for Health, Innovation, and EnVironmental ChangE (ACHIEVE) grant
2009	• "VISION 2040 & Health" brochure created, emphasizing the link between environment and health and how health is addressed in VISION 2040
2010	• March: King County receives DHHS/CDC Communities Putting Prevention to Work grant for tackling tobacco use and obesity • May: Transportation 2040 adopted • October: PSRC receives a HUD Sustainable Communities Regional Planning Grant to implement VISION 2040 • November: PSRC requests and hosts a peer exchange on "Project Prioritization for Regional Long-Range Transportation Plans" that includes health
2011	• Transportation 2040 Prioritization Working Group drafts Decision Guide proposal, with nine measures • Tacoma-Pierce County Health Department and Washington State Department of Health receive DHHS/CDC Community Transformation Grants for chronic disease prevention
2012	• VISION 2040 Monitoring Committee to develop measures for VISION 2040 • Transportation 2040 Prioritization to be completed and integrated into the 2014 update of Transportation 2040.
2013	
2014	• Planned update of Transportation 2040

Case Study: Sacramento Area Council of Governments

Background



The [Sacramento Area Council of Governments] (SACOG) encompasses a six-county region that includes 22 member cities and over 2 million people.

SACOG was formed in 1980 under a Joint Powers Agreement (JPA) but was preceded by the Sacramento Regional Area Planning Commission, which was formed in 1963. The current JPA, adopted in July 2003, identifies a Board of Directors that is comprised of county supervisors and city council members appointed by member jurisdictions. SACOG has three committees that report to the Board: Government Relations & Public Affairs, Land Use & Air Quality, and Transportation. SACOG is responsible for transportation planning and funding as well as the identification and resolution of regional issues and the distribution of affordable housing.

One of the regional issues in which SACOG is involved is public health. The following information on significant regional health issues and related initiatives and regulations is provided to establish the context for SACOG's progress on incorporating health into its planning processes. Two major public health issues for the Sacramento Region related to transportation are surface ozone-related impacts and obesity. Several State and national research studies originating in the SACOG region support the importance of these public health issues in the region.

The American Lung Association's [State of the Air] ranks the Sacramento region as the fifth worst metropolitan area for ozone levels, which are heightened in part by the burning of fossil fuels such as gasoline in motor vehicles. In response to air quality – or "dirty air" – concerns, a coalition consisting of local groups focused on business, health, and the environment partnered to form the [Cleaner Air Partnership]. The Partnership works to reduce ozone-forming emissions from vehicles by promoting technologies, smart growth, and a variety of transportation demand management strategies, such as telecommuting (telework), carpooling, and bicycling.

The California Physical Fitness Report indicates that approximately a third of students in Sacramento County are overweight. The Sacramento County Childhood Obesity Prevention Coalition formed in 2004 in response to regional concern over increasing rates of childhood obesity. The Coalition issued a report in 2008 that cites change to the built environment resulting in more sedentary lifestyles as a significant factor in childhood obesity for the region. The Coalition has focused on physical activity and access to healthy food, among other initiatives. Another local study, the 2011 Healthy Youth/Healthy Regions report by the UC Davis Center for Regional Change, found that the built environment and transportation have health implications for youth; for example, lack of sidewalks or bike lanes are barriers to active transportation and inadequate or expensive public transportation are barriers to accessing health care, recreation, and other destinations.

California has been a national leader in climate change mitigation and adaptation, smart growth, and multimodal transportation, all of which have positive implications for air quality and obesity health concerns. Such leadership at the State level has had direct impacts on the State's capital; the most significant, relevant State legislation includes the following:

- The Bicycle Transportation Account, added to the California Bicycle Transportation Act in 1997, is a statewide, annual, $7.2 million funding program for projects that improve safety and convenience for bicycle commuters. Projects are identified through local Bicycle Transportation Plans approved by the local MPO and must have a minimum 10% local match. The program has provided SACOG and other local and regional governments a dedicated funding source with which to support the promotion of active transportation.
- California's Sustainable Communities and Climate Protection Act of 2008 (SB 375) requires the Air Resources Board (ARB) to develop regional greenhouse gas emission reduction targets for passenger vehicles for each MPO region. The Act then requires each MPO to develop a sustainable communities strategy (SCS) that demonstrates how the MPO will meets its ARB target through integrated land use, housing, and transportation planning. The SCS is to be incorporated into the MPO's LRTP. Although climate change is still considered separately from health, the discussion of greenhouse gases facilitated consideration of other air quality topics, including those related to health. The Act was intended in part to support the California Global Warming Solutions Act of 2006 (AB 32).
- The California Complete Streets Act of 2008 requires local governments to integrate a balanced, multimodal transportation network into the updates of local plans as of January 1, 2011. The plan updates must consider the needs of all users, including pedestrians, bicyclists, seniors, movers of commercial goods, and users of public transportation. The bill cites the public health benefits of bicycling and walking as well as relevance to the California Global Warming Solutions Act of 2006 (AB 32).

Health Activities

This section describes the MPO's various health-related activities, which are presented along a timeline at the end of the case study.

Motivation and Focus Areas

SACOG traditionally has focused on the transportation impacts on public health from poor air quality by guiding regional land use and transportation investments and adopting clean engine and other programs. In recent years, SACOG has expanded its focus to a broader suite of issues, including active transportation, transit-oriented development (TOD), and lifeline transit service for disadvantaged populations to reach essential destinations. SACOG says this shift is a result of statewide and regional emphasis on integrated planning and decision-making, in particular the region's Blueprint Project, an extensive study of the linkages between transportation, land use, and air quality that resulted in the development of different future scenarios based on projected growth of 1.7 million residents and one million jobs by 2050. SACOG also cited the recent focus on quality of life by its Board, advocacy groups, and general public.

Another area of interest for SACOG is rural issues. SACOG's membership consists of rural, urban, and suburban communities that are interested in how different approaches apply to the different lifestyles and needs of their areas. For example, urban areas are focusing on Complete Street strategies for all modes, with an emphasis on improving air quality and opportunities for active transportation, while rural areas may still be trying to add shoulders or improve intersections to improve safety for bicyclists and pedestrians.

Even as the focus has expanded, air quality remains an important consideration; SACOG has been paying attention to the tradeoffs between health benefits and risks of infill development and TOD. A perceived risk is that such sites have increased levels of toxic air contaminants and fine particulate matter (PM2.5) from diesel engines. However, benefits from such sites could include improved access to health care, lowered transportation costs, better housing, and increased opportunities for physical activity. The Sacramento Metropolitan Air Quality Management District (SMAQMD) has developed its own protocol for project developers to use in assessing potential risks to residents from siting in particular locations, and mitigation strategies to address any identified risks. The protocol is currently a voluntary tool but a new regional air quality management plan for PM2.5 is under development that will establish an attainment year and may specify necessary mitigation, known as transportation control measures.

Integration of Health into LRTP and TIP

SACOG's long-range transportation plan, or the Metropolitan Transportation Plan (MTP), is currently in the process of being updated and includes the State-required sustainable communities strategy (SCS). At the broad level, SACOG staff report that the draft MTP/SCS is intended to advance the Blueprint Scenario by conserving natural resources and investing in compact, mixed use growth to meet multiple goals, including supporting healthy communities through reducing emissions and increasing active transportation. The previous MTP had an

appendix on public health and safety but the update integrates health considerations throughout the plan. This change is a result of increasing awareness of how health and transportation interrelate, advocacy by interest groups, and the evolution of regional planning due to SB 375.

The draft MTP/SCS specifically mentions health in the context of equity, housing, safety, air quality, public transportation, and bicycling and walking. The plan identifies a number of strategies that aim to incorporate public health into project evaluation and performance measures with a specific focus on transit access, active transportation, and reducing vehicle miles traveled (VMT) so as to improve air quality and public health. SACOG was not able to specify measures for physical activity or obesity because of data and modeling limitations, but the plan adds several new measures to Environmental Justice area impacts, including transit access to parks, cited as important for physical activity, health, and recreation. Finally, the plan States that SACOG hopes to build expertise and analytical capacity in several areas for future updates, including measures of public health benefits resulting from planning efforts, such as access to food and walkability.

According to SACOG staff, although the projections for growth and revenue in the draft MTP/SCS were lower than those made in the previous MTP in response to the region's economic downturn, projections for investment in multi-modal projects is proportionally higher per capita, thus setting the table for a long-term policy of bicycle/pedestrian investments.

A bi-annual funding program provides an opportunity every two years for SACOG to direct the allocation of funding from pooled State and Federal funding sources that flow through SACOG. These sources include the State Transportation Improvement Program, Regional Surface Transportation Program and the Congestion Mitigation and Air Quality Program). On average, $100 million is available bi-annually for road, transit, or bicycle/pedestrian projects from this pool of funding; in 2011, the total available was $115 million but the total requested was $160 million. Prior to 2003, SACOG distributed the funds based on population. Starting in 2003, however, SACOG began a competitive application process. In the last two funding rounds since 2009, the application process has involved an initial screening followed by an evaluation of performance outcomes in which applicants are asked to demonstrate benefit to the following important Board policy outcomes as thoroughly as possible:

- Increase in bicycle/pedestrian use/mode share
- Reduced VMT
- Increased safety
- Increased economic vitality
- Increased transit use and active transportation mode share

Although applicants can address these criteria qualitatively, SACOG is working to provide applicants with more data and tools to provide more precise justification, although some measures, such as reduced VMT, are harder to quantify than others. The application is intended to align with performance outcomes in State and Federal grants so that if a project does not receive TIP funding, applicants can use the same application for other competitive grant programs.

Although the criteria do not explicitly address health aside from safety, SACOG views mode shift as a proxy, or indirect measure, of active transportation that supports physical activity and improved air quality due to reduced emissions. Under this new process, SACOG has seen an increase in bicycle and pedestrian investments. In 2011, $10 million of the bi-annual funding awards were made to "exclusive" bicycle and pedestrian projects, while approximately 50 percent of the projects funded had a strong a bicycle/pedestrian component. In addition to the support given to mode shift by the TIP criteria, Regional Surface Transportation Program funding for road rehabilitation requires funded projects to incorporate Complete Street features.

Grants

SACOG received a HUD Sustainable Communities Regional Planning Grant in 2010 to increase transit-oriented development (TOD) and improve quality of life. The project is being coordinated with the development of the MTP/SCS. The grant work consists of five case studies of TOD to examine the barriers and opportunities for TOD in the region, coordination with the MTP/SCS, and a final Regional Plan for Sustainable Development. The grant work is being overseen by a Steering Committee and has four working groups (Natural Resources, Infrastructure, Economic Development, and Equity, Housing, and Health) that are open to anyone who wants to join the Sustainable Communities Regional Consortium. Many of the interest groups involved in this effort have an interest in health – especially health equity and Complete Streets – and the marketing around infill development cites health benefits. As one SACOG staff member remarked, "Health is a big part of [the question] 'Is this a good place to live?' "

The workgroup on Equity, Housing, and Health identified a number of performance measures, some of which SACOG has been able to include in the MTP/SCS while others require additional research. For example, SACOG has been able to measure access to healthcare employment but not to health care; fortunately, there is a regional interest in collaborating on this issue. Other health-related measures of interest for refinement are access to parks, higher education, and jobs.

Modeling and Research

SACOG is an innovator in its regional modeling, with a strong data and technical mapping capacity. It currently manages I-PLACE3S, a scenario planning tool originally developed by the California Energy Commission (CEC), the California Department of Transportation and the U.S. Department of Energy. I-PLACE^{3}S was used for the Blueprint Project, MTP 2035, the Rural-Urban Connection Strategy (described below), and MTP/SCS. In 2009, SACOG partnered with Lawrence Frank, director of the Health & Community Design Lab at the University of British Columbia, to develop health and climate change / air pollution modules for I-PLACE^{3}S.[56] The modules have so far only been tested in King County, Washington.

[56] I-PLACE^{3}S Health & Climate Enhancements and Their Application in King County. June 2009. http://your.kingcounty.gov/kcdot/planning/ortp/HealthScape/I-PLACE3S-FINALREPORT%2006-01-09.pdf

The Rural-Urban Connection Strategy (RUCS)

The Rural-Urban Connection Strategy (RUCS) began in 2007 in response to interest in exploring the region's growth from a rural perspective by developing integrated planning for economic vitality and environmental sustainability for rural areas. RUCS has five areas of interest: land use and conservation, infrastructure of agriculture, economic opportunities, forest management, and regulations. RUCS has so far consisted of coordination, outreach, the development of three working papers and a GIS tool to assess agricultural production for incorporation into I-PLACE^{3}S, and initial work on a community case study on rural agricultural and economic development. One area of interest for transportation and health is local consumption and distribution of local crops, in particular fresh produce, to urban neighborhoods. It is estimated that currently only five percent of what is grown in the region is consumed in the region. A number of organizations are supporting SACOG in this effort, including the SMAQMD, mentioned above, and Valley Vision, an "action tank" focused on improving social, environmental and economic health.

Other

SACOG offers a variety of programs that support reducing VMT and that can be explored on its 511 traveler information website, such as urban and rural vanpools, rideshare matching, and an online trip planner for bicycles. SACOG has partnered with the local Complete Streets Coalition to develop the Complete Streets Toolkit, which includes resources on health and safety, livability, and other areas. In addition to the toolkit, SACOG is working on other Complete Street efforts, including developing walkability audits with WALKSacramento.

Partners

As mentioned above, SACOG has collaborated with many regional entities, including the SMAQMD, Valley Vision, WALKSacramento, and the UC Davis Center for Regional Change. In addition, several other entities are actively involved in related issues: Design Sacramento for Health, Sacramento County Childhood Obesity Prevention Coalition, and the Cleaner Air Partnership. These entities educate the public about the connections between health and quality of life and transportation, offer critique and support of SACOG plans and initiatives, and in some cases provide funding, staff, and resources to assist in developing a program or project. They also present opportunities for new or expanded partnerships and broadened support for SACOG's ongoing planning process.

Evolution of Activities

SACOG has seen an evolution in the incorporation of health issues from stakeholder outreach and broad discussion to specific initiatives and policies. For the future, it sees a potential role for SACOG in providing process support and technical assistance in the area of health and transportation.

In addition to the incorporation of health into larger initiatives–the Sustainable Communities grant, RUCS, and the MTP/SCS – SACOG staff cited small-scale accomplishments, such as emphasizing active transportation in investment priorities, developing the Complete Streets Toolkit, and starting a dialogue between transit agencies on non-emergency health care access and anticipated needs for the aging population. SACOG staff considers all of these activities as part of "setting the table for future outcomes."

SACOG anticipates that the broadened stakeholder community and its issues and concerns will inform and drive future MPO planning, project selection, and funding criteria. In the future, SACOG is interested in improving its technical capacity, expanding on data-driven health and equity performance measures, and incorporating the results of current initiatives into future MTP updates and MTIP prioritization. Toward that end, SACOG would like to identify and pursue funding to operationalize a health module for I-PLACE^{3}S and advance research on the relationship between urban form and physical activity. SACOG would also be interested in building its capacity to conduct Health Impact Assessments at the local level. Finally, SACOG seeks to take advantage of corollary work, such as the HUD grant's case studies, to test performance measures that may be able to be scaled up to a regional analysis level or added to the MTP criteria eventually.

In the immediate future, SACOG is exploring opportunities for linking transit formula grants to new metrics and is planning a forum in 2012 regional care providers to better coordinate health care facility planning with planning for transit and other transportation infrastructure.

Observations and Conclusions

1. **Statewide initiatives can help introduce health into policy discussions and MPO initiatives and investments.** For example, California's statewide initiatives for greenhouse gas reduction have provided a foundation for considering air quality impacts more broadly. Measures that support reduction in GHG emissions and other regulated air pollution also improve air quality and encourage active transportation.
2. **Linkages between different planning efforts eliminate stovepipes and provide opportunities for health-related integration.** SACOG has taken a leadership role in linking transportation and sustainable development planning with its MTP/SCS and HUD grant. This linkage has resulted in the expansion of health-related measures for the plan and interest in developing more.
3. **MPOs may require training and resources to improve health-related transportation data but such needs can also be an opportunity for expanded activities.** SACOG has made great progress developing technical capacity for analyzing health implications. For the future, SACOG identifies both a need to build technical, research, and data collection around health-related transportation research and analysis and an opportunity to provide technical assistance to develop health-related data, projections, and analysis, including eventually health impact assessments at the local level.
4. **Partnerships are an important place for MPOs to start working on health.** SACOG has found that if an MPO is open to listening and being challenged, it will be able to leverage common interests and resources to successfully collaborate on initiatives. For example,

an MPO can coordinate with air quality districts and city GIS offices to build a network of shared resources and skills. There are also important grant opportunities specific to health-related initiatives that are available.

5. **Rural and urban perspectives on health and transportation are important to address.** Like many MPOs, SACOG membership represents rural, urban, and suburban areas and there is growing interest in how best to translate traditionally urban approaches to transportation and health to rural areas and how best to match urban needs with rural resources. For example, SACOG has been exploring local food production and access as part of RUCS.

Timeline

Year	Health-related Activity
1997	• Caltrans Bicycle Transportation Account program established under the California Bicycle Transportation Act (1994)
2002	• Sacramento Region Blueprint Project begins, using IPLACE3S scenario planning model
2003	• Bi-annual funding allocation by SACOG changes to competitive process.
2004	• Preferred Blueprint Scenario adopted by SACOG • Sacramento County Childhood Obesity Prevention Coalition formed
2005	
2006	• California Global Warming Solutions Act of 2006 passed
2007	• Rural-Urban-Connection Strategy (RUCS) launched by SACOG
2008	• March: MTP adopted by SACOG • April: Creating Healthy Communities report released by Obesity Prevention Coalition • September: • The Sustainable Communities and Climate Protection Act of 2008 (SB375) • The California Complete Streets Act of 2008
2009	• Bi-annual funding application process includes an initial screening followed by an evaluation of performance outcomes (including nonmotorized mode share) • Health and Climate/Air Pollution modules added to IPLACE3S scenario planning tool by SACOG and partners
2010	• SACOG awarded HUD Sustainable Communities grant
2011	• Draft MTP/SCS released for comment
2012	• Planning Forum with health care providers proposed for 2012

Case Study: San Diego Association of Governments

Background

The jurisdiction of the San Diego Association of Governments (SANDAG) comprises the county of San Diego and the 18 cities within the county. In 1966, the local governments created the Comprehensive Planning Organization (CPO) as a long-range planning department, which was then renamed SANDAG in 1980. As of 2010, the region contained just over 3 million people. In addition to meeting the Federal transportation planning requirements for Metropolitan Planning Organizations (MPOs), SANDAG's responsibilities include transit planning, funding allocation, project development and construction. SANDAG is governed by a Board of Directors from the 19 local governments, each with one vote (except the City and County of San Diego, which each have two votes), as well as other agencies, such as the California Department of Transportation (Caltrans) and San Diego Unified Port District. These additional agencies serve in a non-voting, advisory capacity.[57] SANDAG has several committees, which include the topics of: Borders, Environment, Land Use and Regional Growth, Public Safety, and Transportation.

One issue of concern for the MPO is public health. SANDAG considers health as relevant to transportation and land use in four major categories: level of daily physical activity and active transportation, air quality, injury prevention and safety on streets, and level of access to daily goods and services. Although the SANDAG Board of Directors has not formally adopted an official policy or priority for health, it has supported on-going initiatives to integrate health into the MPO's work at several important stages of the planning process. Furthermore, while SANDAG does not directly have control over land use, it has been able to support implementation of land use policies to improve public health at the local and regional level through providing incentives, tools, and grants to various agencies.

[57] "About SANDAG." http://www.sandag.org/index.asp?fuseaction=about.home

The MPO has also responded to statewide initiatives and requirements that promote public health policies. California is a national leader in promoting climate change mitigation, smart growth, and multimodal transportation, all of which have positive impacts on public health. One of the most significant and relevant State legislation is California's Sustainable Communities and Climate Protection Act of 2008 (SB 375)[58] which requires the California Air Resources Board to develop regional greenhouse gas (GHG) emission reduction targets for passenger vehicles and light trucks for each MPO region. SB 375 also requires each MPO to develop a Sustainable Communities Strategy (SCS) that demonstrates how the MPO will meet its GHG targets through integrated land use, housing, and transportation planning. Many of the strategies that have climate change benefits also support improved health outcomes. For example, promoting active transportation as a means to reduce vehicle miles traveled, which in turn reduces greenhouse gas emissions, also results in increased physical activity, improved safety and air quality, and enhanced access. The SCS must be integrated into the MPO's Long Range Transportation Plan, which guides transportation investments for the region over 20 or more years, as required by the Federal government.

Health Activities

This section describes the MPO's various health-related activities, which are presented along a timeline at the end of the case study.

Motivation and Focus Areas

SANDAG's approach to public health is a holistic one, consistent with the approach outlined in this report. Staff reported that SANDAG's health initiatives promote physical activity and access to healthy foods through built environment strategies that support compact, mixed use and transit-oriented communities with walkable streets, access to schools, parks and grocery stores, and a range of transportation options that meet the diverse needs of residents and businesses in the region. These strategies are intended to support four key health-related outcomes:

1. Increased physical activity that people of all ages and abilities can get from everyday walking and bicycling in their neighborhoods or to work;
2. Access to daily goods and services such as parks, schools, grocery stores, and transit stations within walking or biking distance;
3. Improved air quality in neighborhoods and the region as a whole as more people rely less on the automobile for their transportation needs; and
4. Improved safety for pedestrians, bicyclists and drivers on streets.

SANDAG has been able to promote its public health initiatives in large part due to its partnership with the County of San Diego's Health and Human Services Agency (HHSA), and funding and resources from Federal grants received.

[58] SB 375 was intended in part to support the California Global Warming Solutions Act of 2006 (AB 32).

Integration of Health into Planning Products

SANDAG has recognized the link between public health and land use and transportation planning in a number of its regional policy documents including, the 2004 Regional Comprehensive Plan (RCP) , the 2030 Regional Transportation Plan (2030 RTP), and the 2050 Regional Transportation Plan and Sustainable Communities Strategy (2050 RTP/SCS).

The RCP, adopted in 2004, serves as the long-term strategic framework for the San Diego region and is based on smart growth principles. The RCP was the first SANDAG planning document to acknowledge the relationship between health and the built environment. It established a regional objective to "create more walkable and bicycle-friendly communities consistent with good urban design concepts." In 2007, the SANDAG Board of Directors approved the 2030 RTP, which addressed public health from an air quality and physical activity perspective. The 2030 RTP recognized the link between levels of physical activity and compact and mixed use communities, and discusses the public health benefits of promoting active transportation and public transit in the region.

In October 2011, SANDAG adopted the 2050 RTP/SCS, in compliance with the requirements of SB 375. A typical LRTP uses a 20 or 25 year timeline; the longer (40 year) timeline allowed the RTP to identify and use revenues available from the voter-approved transportation sales tax program described below. The 2050 RTP/SCS reaffirmed SANDAG's commitment to address public health at the local and regional level. As mentioned in the 2050 RTP/SCS, in 2007, 33 percent of county residents were overweight and nearly 22 percent were obese. The 2050 RTP/SCS describes the link between public health and land use and transportation, promotes walkable, bikeable, and transit-oriented communities, and allocates resources to implement projects that will improve health outcomes in the region. The 2050 RTP/SCS has allocated 36 percent of the local, State and Federal transportation funds toward transit in the first ten years, with an increasing amount in each subsequent decade, reaching 57 percent in the last ten years of the plan. The 2050 RTP/SCS also approved $6.5 million to fund early implementation of high priority projects from the 2010 Regional Bicycle Plan. These high priority projects are intended to increase the number of people who bike in the region, as well as encourage the development of Complete Streets. The 2050 RTP/SCS allocated a total of $3.8 billion to active transportation projects over the next 40 years.

In addition to Federal and State funding, the San Diego region has a one-half cent sales tax, called *TransNet*, to support transportation projects included in the Regional Transportation Improvement Program (RTIP), which identifies transportation projects to be funded over the next five years. The initial *TransNet* program generated $3.3 billion between 1998 and 2008; the money was distributed in equal proportions to transit, highway, and local road projects. In addition, $1 million was earmarked for bicycle programs and projects annually. The program also funded eight Walkable Community Demonstration Projects, which were intended to show the benefits of walkable communities and smart growth planning. Four of the projects were construction projects, focused on streetscape and pedestrian improvements, and four were planning projects for corridors.

In 2004, voters approved extension of the program until 2048. The extension allocates $280 million (2 percent of total) to the Smart Growth Incentive Program and another $280 million to the Active Transportation Grant Program, which covers bicycle, pedestrian, and neighborhood safety projects.[59] The Smart Growth Incentive Program supports a grant program and led to the developed of the Smart Growth Toolbox, which groups various planning tools together as resources for local jurisdictions. This ordinance also supports the implementation of the RTIP and requires all *TransNet* funded projects to accommodate bicycle and pedestrian facilities where it is reasonable to do so.

Grants and Related Programs

SANDAG has partnered with the County of San Diego Health and Human Services Agency to leverage Federal grants to fund a number of health-related project and programs in the region. These include the Caltrans Transportation Planning Grant, a grant from the CDC Communities Putting Prevention to Work program and the CDC Community Transformation Grant. These grants, and SANDAG's role in the funded projects, are described below in more detail.

Caltrans Transportation Planning Grant

HHSA's Public Health Services (PHS) and WalkSanDiego received $250,000 through the FY2008-2009 Environmental Justice Program of the Caltrans Transportation Planning Grant Program. The "Health Equity by Design" project aimed to reduce health disparities in San Diego's City Heights neighborhood, a disadvantaged community, through community-driven, transit-oriented development strategies. The project created a roadmap to help community members identify barriers to health equity, develop solutions to reduce disparities, and identify steps for implementation. The grant was administered by SANDAG on behalf of HHSA and helped establish the first formal partnership between the two agencies, laying the groundwork for future collaboration.

Communities Putting Prevention to Work

In 2010, HHSA received a Communities Putting Prevention to Work (CPPW) grant of $16.1 million, the largest CPPW grant in the country to address obesity. The grant project, known as Healthy Works in the San Diego region, intended to improve levels of daily physical activity and access to fresh and healthy food and nutrition through policy, systems and environmental change. Healthy Works is part of the County of San Diego's Live Well, San Diego! Initiative, which is a 10-year vision and plan for creating "healthy, safe, and thriving communities." HHSA partnered with SANDAG in applying to the grant to identify ways in which health could inform, enhance, and expand upon existing SANDAG projects to improve health outcomes through built environment strategies.

Through the CPPW grant, HHSA contracted with SANDAG for approximately $3 million to implement transportation-related projects and programs at the local and regional levels that could improve opportunities for physical activity. SANDAG integrated these initiatives into its

[59] http://www.sandag.org/uploads/publicationid/publicationid_1283_6596.pdf

Overall Work Program (OWP), the Federally required summary of all transportation planning work funded through the MPO, was amended to include these projects. This integration aligned these activities with SANDAG's overall regional transportation planning process and establishing the relevance and importance of these health initiatives.

The CPPW project allowed SANDAG to hire three new staff as well as fund existing staff to promote health in the region. One of the new positions created was for a Public Health Planning Specialist who has experience in both planning and public health, as well as in project management, and community engagement. A number of existing SANDAG staff from planning, engineering, technical services and communications divisions were also involved in the project.

SANDAG formed a Public Health Stakeholder Group (PHSG) to develop recommendations and provide feedback on grant-funded activities. This group consisted of about 30 representatives from local jurisdictions, professional organizations, advocacy groups, community-based organizations, HHSA, other public health professionals, and medical providers. The PHSG made recommendations to the Regional Planning Technical Working Group, consisting of the planning directors from all 19 jurisdictions, which reported to the Regional Planning Committee, consisting of elected officials, which in turn reported to the SANDAG Board of Directors.

SANDAG completed the following initiatives through CPPW, grouped into three categories:

Incentives

- SANDAG provided more than a million dollars in grants to local jurisdictions, tribal governments, schools, and community groups to develop their own approaches for addressing health issues and concerns in their communities. SANDAG developed criteria for evaluating applications that prioritized projects located in high need areas as well as projects that included a strong community engagement component. SANDAG awarded 11 grants to promote public health considerations in planning and active transportation, totaling approximately $650,000.[60] Grants funded master and neighborhood plans and planning projects related to pedestrian paths, sidewalks, transit connections to transit, food access, and urban agriculture. SANDAG also awarded six grants for comprehensive Safe Routes to School (SRTS) planning and six grants to fund education programs, totaling approximately $350,000.[61] Several of the grant recipients presented to the Regional Planning Committee, helping raise the profile of how health can be integrated at a local and regional level.

Regional Policies and Programs

- **Regional Health and Wellness Policy Framework and Performance Measures** – SANDAG collaborated with local jurisdictions and regional stakeholders to develop a health and wellness policy framework and associated performance measures for adoption in regional plans such as the RCP and RTP/SCS. The policy framework builds on

[60] http://www.sandag.org/index.asp?projectid=385&fuseaction=projects.detail
[61] http://www.sandag.org/index.asp?projectid=404&fuseaction=projects.detail

existing policies and initiatives at SANDAG and addresses a range of social and physical determinants of health and health disparities in the region. The Framework was developed by SANDAG with input from the Public Health Stakeholders Group (PHSG) and the Cities/County Transportation Advisory Committee (CTAC). This was accepted by Regional Planning Committee in January 2012.

- **Safe Routes to School Strategic Plan** – SANDAG developed the region's first Regional Safe Routes to School Strategic Plan that proposes a regional approach to promote safe walking and bicycling to and from schools. The Plan also includes a prioritized list of projects that will target investments and improvements in the high need areas of the region. SANDAG worked with a SRTS Coalition to develop these recommendations.

- **Active Commuter Campaign** - SANDAG's iCommute team, which matches carpooling, walking, and biking buddies, implemented the region's first month-long bike-to-work promotion campaign, which enrolled 57 businesses and more than 150,000 employees to log more than 12,000 bike trips on Bike-to-Work day. iCommute also implemented an expanded SchoolPool program that helped establish walking school buses and bike buddies and enrolled more than 68 schools and 15,000 kids to promote SRTS.

- **Regional Bicycle Promotion** - To start implementing the 2010 Regional Bicycle Plan, SANDAG will develop and install bikeway wayfinding signage along regional corridors, and launch a bike promotion campaign using a bilingual video and collateral materials.

Tools and Technical Assistance

- **Healthy Communities Atlas** – SANDAG conducted a regional spatial analysis of social and built environment conditions that are known to affect health outcomes. This analysis will allow SANDAG as well as local jurisdictions and community members to identify areas of high need that can benefit from investments and policy change. The Atlas uses existing data to develop a variety of health indicators at the Census block group level. Some of the indicators include access to transit stations and stops, access to social support and amenities, pedestrian traffic safety, and healthy foods access.

- **Health Assessment Modules** – SANDAG partnered with the California Department of Public Health and the San Diego County Air Pollution Control District to develop a health assessment module for its Activity Based Model (ABM), a travel demand forecasting tool, which will allow for quantitative assessment of health co-benefits and impacts of proposed transportation and land use projects and plans in the region. SANDAG also developed a health module for its CommunityViz sketch planning tool, which can be used by local jurisdictions and community groups to conduct health analyses at the local level.

- **Health Impact Assessment (HIA)** – SANDAG conducted a pilot health benefit and impact analysis on the I-805 Bus Rapid Transit / 47th Street Orange Line Trolley Station

improvement project in the Southeastern San Diego neighborhood, a disadvantaged community. SANDAG also provided training to more than 50 community members and professionals in the region on conducting HIAs on local projects.

- **Active Design Guidelines** – SANDAG initiated a study to assess the feasibility of developing evidence-based design guidelines for the San Diego region that promote healthy communities at the project, street and neighborhood scale. These guidelines could be used by local jurisdictions and developers, similar to the existing SANDAG Smart Growth Design Guidelines.

- **Complete Streets Training** – SANDAG partnered with HHSA, WalkSanDiego (a local advocacy group) and the National Complete Streets Coalition to provide hands-on training workshops to four local jurisdictions on complete streets policy and implementation that encourages active transportation.

Community Transformation Grant

In 2011, HHSA received $15 million over five years from the CDC's Community Transformation Grant (CTG) program to continue the "Healthy Works" initiative, which concluded in March 2012. Work on the CTG is anticipated to begin in July 2012 and will continue through September 2016. The grant program will promote tobacco-free and active living, healthy eating, and improved clinical management of risk factors of high blood pressure and high cholesterol in the San Diego region. The grant will be implemented in collaboration with a number of partners including SANDAG, which will receive approximately $2.5 million of the funding. Of the five strategy areas of the CTG, SANDAG will implement projects under the "healthy and safe physical environments" area to increase physical activity in the community and workplace, establish community design standards to make streets safe for all users, and develop tools and protocols for assessing the impacts of proposed projects and plans on community health and wellbeing. To this extent, SANDAG plans to implement four projects:

- Prioritize strategies for Safe Routes to School Strategic Plan and develop a funding and phasing plan;
- Refine the health and wellness policy framework and develop a monitoring program for consideration as part of the next RTP update process;
- Provide technical assistance and training on the Regional Complete Streets Policy and HIAs;
- Conduct additional pilot HIA projects; and
- Continue to engage local and regional stakeholders through the PHSG.

Partners

SANDAG partnered with a number of agencies and organizations to implement the CPPW projects and programs. In addition to securing funding for the project, HHSA supported

SANDAG with technical data and information, developing recommendations and implementing programs. The two agencies have partnered to implement various components of the CPPW project related to regional planning, active transportation, and SRTS. SANDAG also partnered with the San Diego County Air Pollution Control District and the California Department of Public Health for developing the health module for the ABM and CommunityViz. SANDAG's other partners on related initiatives include the University of California at San Diego (UCSD), San Diego State University (SDSU), and Active Living Research (ALR), a national program of the Robert Wood Johnson Foundation administered by UCSD. Finally, Caltrans participated in the PHSG, attended two SANDAG training workshops on HIAs, and partnered with SANDAG, HHSA, and other partners to apply for a Caltrans internal research grant to fund the application of HIAs for access improvement studies at all port of entries. The project would allow SANDAG to conduct a second pilot HIA project at the US-Mexico San Ysidro border site within the county, focusing on nonmotorized access and equity, as well as support Caltrans at the other sites.

Evolution of Activities

SANDAG is still in the process of integrating health considerations into its transportation planning and implementation activities. The MPO is pursuing several strategies to build capacity and support for these initiatives among internal and external stakeholders both at the local and regional level. Integration of health into formal planning efforts began in 2007, when the Board of Directors approved the 2030 RTP, which recognized the link between public health and air quality and physical activity. Since then, SANDAG has been able to leverage and expand much of its public health work due to its partnership with the San Diego County HHSA, established in 2008 through the Health Equity by Design project in the City Heights neighborhood of San Diego.

As part of the 2010 Healthy Works Project, SANDAG was able to hire additional staff to focus on public health initiatives and was also able to engage existing staff in the new work. For example, the health module for the ABM required the involvement of technical staff and the pilot HIA project was managed by the transit planning division. This staffing arrangement helped others in the organization to recognize the connection between SANDAG's on-going transportation planning process and public health, and to develop the capacity to more effectively implement transportation-related health initiatives in the future.

This work will be continued through the CTG, awarded to HHSA by the CDC in 2011. Also in 2011, SANDAG approved its 2050 RTP/SCS, and although the document did not include full results of the Healthy Works project (due to timing), it acknowledges key public health principles that promote healthy communities. According to SANDAG staff, these activities will be more fully incorporated in the next RTP/SCS update.

healthy WORKS SM
Paths to Healthy Living

Building capacity at local governments can broaden the MPO's ability to promote health in transportation, in particular in connection to land use.

Photos (From top to bottom of page): Healthy Works logo; Health Impact Assessment training, Source: SANDAG; Food at convenience stores through the "Cilantro to Stores" program, Source: City of Chula Vista.

Although SANDAG has benefited in the short-term from external grants that support its health initiatives, the MPO is actively looking for ways to sustain these projects in the future and to mainstream health consideration as part of its work. For example, due to the success of the CPPW grant program, SANDAG has made health-related projects eligible for funding under the *TransNet* Smart Growth Incentive Program, which awards funds for public improvements that support transit-oriented development projects. As a result, now more local jurisdictions are encouraged to consider health in the projects, or even include a HIA.

Moving forward, SANDAG has identified a number of next steps to continue integrating health considerations into its activities. In addition to the CTG projects described above, staff will continue to engage policymakers and stakeholders to raise awareness, develop recommendations, and build support for health-related initiatives. In addition, SANDAG will continue to build capacity in the region to address health in land use and transportation planning.

Observations and Conclusions

1. **Collaborating with public health partners to achieve common goals can lead to new resources and project opportunities.** SANDAG's ability to partner with the San Diego County's HHSA has been integral to its success in leveraging new resources and implementing public health initiatives successfully. Due to this partnership, SANDAG has been able to receive funding from a number of competitive grants, such as the CPPW and the CTG, that provide resources necessary to create health and transportation programs. Partnership with HHSA has also been critical in engaging local and regional stakeholders.
2. **Allocating grant funds and other resources towards building internal staff capacity can lay the foundation for addressing health throughout the MPO.** The ability to hire additional staff has been instrumental in SANDAG's ability to pursue public health initiatives. In particular, having a professional on the team who can help leverage public health initiatives through prior experience has been very important. In addition, additional staff has helped SANDAG focus on internal buy-in, promoting health initiatives within the organization, building staff capacity for the long term, and engaging elected officials and Board members on health-related transportation issues.
3. **Building capacity at local governments can broaden the MPO's ability to promote health in transportation, in particular in connection to land use.** Since SANDAG does not have land use authority, it needs to build support and leverage participation from local governments to influence local and region-wide land use decisions in coordination with transportation to improve health outcomes. Providing best practices, models, tools, and incentives has been useful in helping to build support among other agencies, elected officials, and the broader community. SANDAG allocated grant funds to support partners in implementing projects and programs, and build their capacity to conduct health assessments to ensure that the region will continue to advance public health objectives through transportation planning in a sustainable manner, beyond the grant period.

Timeline

Year	Health-related Activity
2004	• Regional Comprehensive Plan adopted; based on smart growth principles • Voters approved extension of one-half cent sales tax for transportation projects through 2048; included designated funding for smart growth and bicycle and pedestrian initiatives and required accommodation of bicycle/pedestrian facilities
2005	
2006	• California Global Warming Solutions Act of 2006 passed
2007	• 2030 San Diego Regional Transportation Plan: Pathways to the Future was adopted, with public health acknowledgement
2008	• The Sustainable Communities and Climate Protection Act of 2008 (SB375) passed • The California Complete Streets Act of 2008 passed • San Diego County's Health and Human Services Agency (HHSA) received grant from Caltrans Transportation Planning Grant Program for "Health Equity by Design" project, via SANDAG
2009	
2010	• HHSA awarded CDC Communities Putting Prevention to Work (CPPW) grant and contracted with SANDAG ($3 million) to implement part of the grant to address obesity prevention, physical inactivity and poor nutrition resulting from transportation infrastructure investments and land use patterns
2011	• SANDAG implemented many "Healthy Works" components, including grants, tools, and a Health Impact Assessment • HHSA awarded a CDC Community Transformation Grant (CTG) to continue work of the CPPW grant • SANDAG Board of Directors approved $6.5 million to fund the initial implementation of the Regional Bicycle Program • SANDAG updated the RTP and met the requirements of SB375 with the approval of the 2050 RTP/Sustainable Communities Strategy (SCS).
2012	• HHSA to contract with SANDAG ($2.5-3 million) to work on CTG

Chapter 4: Conclusion

The purpose of this report is to provide a resource for Metropolitan Planning Organizations (MPOs) and their transportation and public health partners interested in incorporating broadly-based considerations of public health into the metropolitan area transportation planning process. The paper provides the planning and policy context for considering public health and evaluates best practice examples from MPOs. The project team used information from these innovative examples to develop a broad framework for how MPOs and their partners might successfully include more specific health considerations in the planning process and in the resulting plans and investment decisions. The paper is also intended to highlight how Federal agencies are supporting this practice through evolving policies, tools, and funding opportunities. In addition to being a resource for MPOs, the paper is also a resource to assist U. S. Department of Transportation (USDOT) staff to strengthen health considerations in USDOT activities, including in discussions as part of planning oversight, capacity building, technical assistance, and research.

Main Findings

The four case studies and the broad scan of additional MPO examples demonstrate that although each MPO may have a unique experience, approach, and set of actors involved in incorporating health in their planning activities, the planning processes, strategies, and challenges are very similar. Each case study incorporates health into the planning process at different stages and to varying degrees, with some formally bringing health into the Long Range Transportation Plan (LRTP) and the Transportation Improvement Program (TIP) and others involving health in supporting activities, such as stakeholder outreach and technical analysis. The approaches for integrating health into MPO planning, and the stages in which MPOs do so, are dependent upon each region's politics, priorities, partners, and larger context. However, the research demonstrates that MPOs follow a general framework and pattern of evolution for their planning processes, as outlined in Chapter 3: Case Studies that can help other MPOs similarly bring health considerations into their own planning processes. Some of the main themes that the case studies identified, and which are reflected in the framework, are as follows:

- **Partnerships***:* All four case studies involved partnerships with local or State organizations with a health-related mission, starting with communication and coordination and in some cases leading to formal contracts or committee membership.
- **Leveraging of funding*:*** All four case studies reported that Federal funding – whether U. S. Department of Housing and Urban Development (HUD) Sustainability Grants, or Centers for Disease Control and Prevention (CDC) grants – assisted in formalizing partnerships and interest in health, leading to long-term relationships and actions that otherwise would not have occurred.
- **Capacity building*:*** In terms of technical analysis, all four case studies were working on building the groundwork for the internal capacity to conduct quantitative assessment of

health benefits of transportation projects and investments, as well as providing training and tools to community members that more directly have control of land use and other decisions.

- **Education and raising awareness*:*** All the case studies emphasized the importance of building support from the MPO board and the community for the incorporation of health into MPO planning and activities. Two successful strategies identified were incremental investment, focusing on smaller-scale opportunities or pre-existing initiatives, and demonstrating co-benefits. Transportation programs and projects that provide public health benefits can support other MPO goals, e.g., safety, environmental sustainability, expanded and affordable mobility options, and quality of life.
- **An incremental approach*:*** All of the case studies realized progress through an incremental approach, whether it began with new partnerships with public health agencies on technical committees, political leadership on a new policy initiative, a new direction supported by an outside grant, or staff technical analysis on health presented to board members for support. It is important to expand from a modest but solid beginning to gain broad interest and support to build confidence within the MPO and the region that health can be added without adversely affecting pursuit of core transportation goals and responsibilities.

Next Steps and Recommendations

This study focused on MPO-level planning and on the MPO staff perspective, offering high-level considerations, opportunities, and lessons for MPOs involved in health and transportation planning. A follow-up study could translate some of the findings of this research into a resource guide for MPOs and their partners with specific action steps for integrating transportation into MPO TIPs, LRTPs, corridor and modal studies, and other formal planning activities, combined with practical examples and references. In addition to the activities documented at the MPO level, the project team will undertake a second phase focusing on incorporation of health considerations in the statewide transportation planning process by Departments of Transportation and their partners, with a focus on rural areas. This will be the subject of a separate, follow-up study. The FHWA and Volpe Center research team will also participate in future initiatives related to this research, including: development by the USDOT Office of the Secretary and the Centers for Disease Control of an index tool to assist MPOs and DOTs to consider health in transportation planning; activities of the TRB Health and Transportation Sub-committee, including its mid-year webinar; a webinar for the FHWA Surface Transportation Environment and Planning Cooperative Research Program (STEP); and the White House Roundtable on Transportation and Health.

As much as it is important to capture how public health considerations are being successfully and innovatively incorporated in the MPO planning process, it is also important to understand how transportation considerations are being incorporated or might more completely be incorporated into public health activities. Many of the participants from the case studies were interested in learning about each other's work and exchanging information and perspectives; toward that end, there may be a potential need to develop additional training and best

practices resources, perhaps with a focus on specific emerging topics, such as access to healthy foods or medical services or use of technical tools, including models and performance measures. Communities, metropolitan areas, and States that will have the greatest impacts on public health will be those in which transportation and public health agencies jointly consider and pursue transportation and public health goals, and in which planning and decision-making are approached collaboratively, by both types of organizations.

Appendices

Appendix A: Summary Guide to Relevant Resources

	Resource	Author	Description	Website
Bibliographies	Annotated Bibliography on Health and Physical Activity in Transportation Planning (2004)	Transportation Planning Capacity Building (TPCB) Program (FHWA and FTA Offices of Planning, USDOT Volpe Center)	Annotated bibliography that examines studies and programs that evaluate or demonstrate how health and physical activity concerns can be incorporated into transportation planning processes	http://www.planning.dot.gov/Documents/Health/Bibliography.htm
	Bibliography from American Journal of Public Health and the Nation's Health (2011)	American Public Health Association (APHA)	Research from the American Journal of Public Health and the Nation's Health.	http://www.apha.org/advocacy/priorities/issues/transportation/featured_research.htm
Initiatives/Projects	Urban Health (2000)	World Health Organization (WHO)	Webpage devoted to urban health, contains case studies, background document on the link between health and urban planning, and a guide to planning.	http://www.euro.who.int/en/what-we-do/health-topics/environment-and-health/urban-health/activities/healthy-urban-design
	Planning and Designing the Physically Active Community (2003-6)	American Planning Association (APA) (funded by the Robert Wood Johnson foundation)	Initiative to encourage changes to the built environment that would promote physical activity. Project resulted in a report, survey, and resource list.	http://www.planning.org/research/active/index.htm
	Integrating Health and Physical Activity Goals Into Transportation Planning: Building the Capacity of Planners and Practitioners Proceedings of the Portland Roundtable (2004)	TPCB Program (FHWA and FTA Offices of Planning, USDOT Volpe Center)	Proceedings of a national roundtable of transportation and public health professionals that discussed opportunities and strategies to include health and activity goals within the transportation planning process.	http://www.planning.dot.gov/Documents/Health/IntHealthTA.asp
Toolkits	Cities and Towns Toolkit (2012)	Let's Move! Initiative (First Lady Michelle Obama, White House)	Strategies and resources to help communities address childhood obesity. Includes the Department of Transportation as a relevant agency and specifically highlights the Safe Routes to School, Transportation Enhancement, and Recreational Trails programs.	http://www.hhs.gov/iea/letsmove/index.html (Note: currently being updated)

	Online Transportation Toolkit (2012)	APHA	Health, equity, and transportation resources related to public health, including fact sheets and resources specific to transportation and public health.	http://www.apha.org/advocacy/priorities/issues/transportation/
Fact Sheets	Public Health in Land Use Planning and Community Design (2003)	National Association of County and City Health Officials (NACCHO)	Fact sheet on Public Health in Land Use Planning and Community Design, considering traffic safety, physical activity, and air and water quality, and mental health.	http://www.naccho.org/topics/environmental/landuseplanning/upload/Land-Use-Fact-Sheet6-19-03.pdf
	Development checklist (2003)	NACCHO	Development checklist created in partnership with the Tri-County Health Department of Colorado; aim is to ensure long term protection of public health and can be used to identify potential health impacts and provide a screening process for improving the quality of decision-making.	http://professional.captus.com/Planning/hia/pdf/NACCHO%20screening%20checklist_Mod%204.pdf
	Public Health Terms for Planners & Planning Terms for Public Health Professionals (2003)	APA and NACCHO	Fact sheet with definition of terms in public health and planning.	http://www.planning.org/research/healthy/pdf/jargonfactsheet.pdf
	Working with Elected Officials to Promote Healthy Land Use Planning and Community Design (2003)	APA and NACCHO	Fact sheet to help create relationships between public health professionals and planners and develop strategies.	http://www.planning.org/research/healthy/pdf/electedofficialsfactsheet.pdf
General Resources	Transportation Recommendations (2010)	CDC	Provides recommendations to include public health within transportation issues.	http://www.cdc.gov/transportation/
	Active Living by Design Resource Guides (2012)	Active Living by Design (North Carolina Institute for Public Health/UNC Chapel Hill) (funded by the Robert Wood Johnson foundation)	Resource guides about a variety of subjects, including active living, provides a list of relevant programs, organizations, tools and presentations.	http://www.activelivingbydesign.org/ALBD_Resource_Guides
	Active Living Research Resources (2012)	Active Living (University of California, San Diego) (funded by the Robert Wood Johnson foundation)	Database of research and other documents that can be sorted by transportation and other topics	http://www.activelivingresearch.org/toolsandresources/all

	APHA Resource Page (2012)	APHA	APHA developed this resource page to highlight new and useful health and transportation resources from partner organizations, whether national, State, local, private or otherwise	http://www.apha.org/advocacy/priorities/issues/transportation/resources.htm
	Designing and Building Healthy Places (2012)	Centers for Disease Control and Prevention (CDC)	Resources with recommendations to improve public health	http://www.cdc.gov/healthyplaces/
	Design for Health (2004-2012)	Collaboration between University of Minnesota, Cornell University, University of Colorado	The resource library contains event presentations, fact sheets, journal articles, and reports, organized by information types and topic area.	http://designforhealth.net/resources/
	ChangeLab Solutions Healthy Planning Tools (2012)	Collaboration between California Department of Health Services, California Endowment, Kaiser Permanente	List of resources and tools regarding collaboration between public health and planning.	http://changelabsolutions.org/healthy-planning/search-tools
Health Impact Assessment (HIA) Resources	"Planning for Healthy Places with Health Impact Assessments" Online Course (2006)	APA (funded by CDC and in partnership with NACCHO)	Online course that explains the value of conducting an HIA and provides a how-guide to the steps involved in conducting an HIA.	http://professional.captus.com/Planning/hia2
	Growing the Field of Health Impact Assessment in the United States: An Agenda for Research and Practice (2006)	Dannenberg et al., American Journal of Public Health	Documentation of 2004 workshop on advancing use of HIAs.	http://hsc.unm.edu/community/iph/docs/GrowingHIA.pdf
	Health Economic Analysis Tool for Walking and Bicycling in the United States: Summary of prospective U.S. users' interest and recommendations. (2010)	Fenton, Mark and Brigid Junot. Active Living by Design. (funded by the Robert Wood Johnson foundation)	Study that explores the development and dissemination of HEAT tools in the United States through a short survey and interviews with potential users (professionals and advocates).	http://216.92.169.205/files/HEATReport_Final.pdf

	Transportation Health Impact Assessment Toolkit (2011)	CDC	Resources on HIAs, including strategies, publications, background information, tools, and case studies	http://www.cdc.gov/healthyplaces/transportation/HIA_toolkit.htm
	HIA tools, including Health Economic Analysis Tool (HEAT) for Walking and Bicycling (2011)	World Health Organization (WHO)	Resources for HIA as well as a specific online tool to estimate the economic savings resulting from reductions in mortality as a consequence of regular bicycling and/or walking.	http://www.euro.who.int/en/what-we-do/health-topics/environment-and-health/health-impact-assessment
	HIA resources (2012)	Human Impact Partners	Capacity building HIA resources, including fact sheets and case studies.	http://www.humanimpact.org/hia

Appendix B: Sample MPO Discussion Questions

1. How would you define “health issues” as it relates to MPO transportation planning, and what topics does it include?

2. Please describe your activities and initiatives that link transportation planning and public health.

    a. How long have you been working on these activities?

    b. How do you incorporate these activities into your transportation planning process (vision, LRTPs, project selection, etc.)?

    c. How do you consider the health impacts across modes of transportation?

3. What characteristics of your region or community have been particularly relevant to transportation and health planning (i.e. a growing elderly population, active Environmental Justice communities, and air quality nonattainment area)?

4. Who are the key partners for your health and transportation activities? Do you currently work with health professionals? Please describe your relationship, shared roles and responsibilities, and benefits for each partner.

5. How do you fund your activities? Do you share funding responsibilities with partners?

6. How do you track the results of your transportation and health activities?

    a. Do you have specific performance measures in your LRTP that relate to health impacts?

    b. Have you used technical tools or Health Impact Assessments to measure health impacts of projects or programs?

7. Have you received health related requests, including requests for health impact assessments? If so, from whom and how did you respond?

8. What are they biggest accomplishments or milestones from your transportation and health activities? What are your near-term next steps?

9. What are gaps that still exist for incorporating health into your activities? Where do you see targeting improvement for the future?

10. What do you see as the greatest opportunities for other MPOs to engage in transportation planning for healthy communities?

Appendix C: Scan and Case Study Tables

Appendix C Table 1 Survey of Potential Case Study MPOs

MPO (Municipality)	State	Partners	Health Area(s)	Specific activities of interest
Sacramento Area Council of Governments	CA	• Complete Streets Coalition	• Planning • Food access • Active transportation	• Sacramento Region Blueprint Transportation and Land Use Plan (2004) • Health included in draft MTP • Sacramento Metropolitan Air Quality Management District has developed an evaluation of development near major roadways • Recipient of HUD Sustainable Communities Regional Planning Grant focused on transit-oriented development • Research and development into adding health component to scenario planning tool I-PLACE^{3}S • Collaboration on local food production and access o Food Access in the Sacramento Region o Rural-Urban Connections Strategy Local Market Assessment • Complete Streets effort o Walkability audits, online bicycle trip planner, and coalition o Complete Streets Resource Toolkit ▪ Health & Safety page ▪ Sacramento County Department of Health & Human Services presentation
San Francisco Metropolitan Transportation Commission	CA	• San Francisco Department of Public Health	• Health impact assessment	• Identified three performance targets for Healthy & Safe Communities to evaluate land use scenarios for the regional plan, Plan Bay Area • San Francisco Department of Health programs o Health Development Measurement Tool, a set of evaluation and planning tools to consider health in urban development o Program on Health, Equity and Sustainability, which includes HIA guidance and projects

San Diego Association of Governments	CA	• San Diego County's Health and Human Services Agency	• Planning • Active transportation • Health impact assessment	• Public health incorporated into RTP in particular around land use and transportation • MPO services contracted to support San Diego County's two CDC grants (Communities Putting Prevention to Work (CPPW) grant and Community Transformation Grant) for the Healthy Works initiative • Smart Growth Toolkit and Healthy Communities Atlas • HIA training and pilot
Shasta County Regional Transportation Planning Agency	CA	• Shasta County Health and Human Services Agency	• Active transportation • Health impact assessment	• Inclusion of health implications of nonmotorized facilities in RTP • Healthy Communities Initiative, including a development checklist • Healthy Shasta Partnership – information, HIAs, and visioning
Southern California Association of Governments	CA	• Riverside County Health and Planning Departments • County of Los Angeles Public Health	• Planning • Active transportation	• Riverside County Health Component to General Plan • Public health community is providing recommendations on health metrics to include in 2012 RTP • Policies for Livable, Active Communities and Environments (PLACE) Program
Denver Regional Council of Governments	CO	• Denver Bike Sharing • Colorado Tri-County Health Department • Getting There Collaborative	• Safety • Active transportation • Access to food • Aging in place	• Denver Safe Routes to School • Health Department recipient of CDC Communities Putting Prevention to Work (CPPW) grant – focus on Safe Routes to School, active transportation and access to healthy foods • Denver Living Streets Initiative • Area Plan on Aging and guidance for transportation for older adults
Pikes Peak Area Council of Governments (Colorado Springs)	CO	• El Paso County Public Health • Pikes Peak Area Agency on Aging	• Planning • Active Transportation • Access to food • Aging in place	• 2012 Update to RTP includes chapter on integrating public health, drawing upon the El Paso County Public Health's Community Health Assessment
Chicago Metropolitan Agency for Planning	IL	• Chicago Community Trust	• Access to food	• GO TO 2040 mentions health for livability and quality of life • Health Strategy Paper (2009) in support of GO TO 2040: CMAP, Chicago Community Trust, and University of Illinois at Chicago School of Public Health • MetroPulse Chicago, the Regional Indicators Project, includes health indicators (obesity, walkability, food access, etc.)

Metro (Portland)	OR	• Oregon Health Authority • Oregon Public Health Institute	• Health impact assessments	• HIA for Lake Oswego to Portland Transit Project • Oregon Health Authority HIA partner
Nashville Area Metropolitan Planning Organization	TN	• Nashville Metro Health Department • State departments of transportation, environment and conservation, and health	• Planning • Active transportation • Access to food	• Health goals/objectives in RTP • Designation of 15 percent of Surface Transportation Program (STP) funds for active transportation projects • Citizen-based Bicycle and Pedestrian Advisory Committee with a formal role in reviewing and scoring nonmotorized projects • Health Department recipient of CDC Communities Putting Prevention to Work (CPPW) grant – focus on active transportation and access to healthy foods
Puget Sound Regional Council	WA	• King County • Public Health – Seattle & King County • Central Puget Sound Sustainable Communities Consortium	• Planning • Active transportation • Access to food	• Inclusion of health in Vision 2040 (LRTP) (see also http://psrc.org/assets/1767/V2040-Health.pdf and http://www.psrc.org/assets/2019/appIF1-health.pdf) • Health Department recipient of CDC Communities Putting Prevention to Work (CPPW) grant – focus on healthy foods and walking/biking • A Study of Land Use, Transportation, Air Quality and Health in King County, WA (2005) • Recipient of Sustainable Communities Regional Planning Grant to implement Vision 2040 (see webpage, application and MOU) • HealthScape program, including a Development Impact Assessment Tool
Madison Area Transportation Board	WI	• Capital Region Sustainable Communities (27 organizations) including Capital Area Regional Planning Commission and the MPO	• Planning (transit-housing-jobs) • Health impact assessment	• Recipient of Sustainable Communities Regional Planning Grant (see website) • Wisconsin Health Impact Assessment Online Toolkit (State was recipient of CDC pilot grant on HIAs; planned incorporation into the Wisconsin Rail Plan 2030)

Appendix C Table 2 Types of Motivation/Input for Integrating Health into Transportation Planning

Source of Motivation/Input	Participants	Actions	Examples
Partners	Public health departments, non-governmental organizations (NGOs), schools, and community groups	• Participate in an MPO initiative or committee, thereby bringing health considerations to a transportation project • Invite an MPO to participate in a health-related initiative, thereby initiating early thinking about linking transportation projects to health impacts	The San Diego County Health and Human Services Agency invited SANDAG to assist in scoping out, and then working on, two Federal grants to promote physical activity.
Communities	Members of the public, advocacy groups	• Provide specific feedback to the MPO through public meetings or comments, or proactively approach the MPO to place the issue on the MPO's agenda • Give input to local governments and the elected officials that serve on MPO policy boards • Publicize issue or event in local media	SACOG's MPO membership has indicated that air quality, quality of life and rural issues are important to the region's populations.
Local government	Local, regional, and State government elected officials and agencies	• Bring health issues directly to the MPO or introduce them more indirectly through championing initiatives or campaigns that attract MPO interest • Pass legislation that mandates MPOs to include programs or projects in their plans that address health	Nashville Area MPO became interested and involved in the statewide obesity initiative, which resulted in transportation-related actions such as Complete Streets policy adoption.
National	Federal government officials, agencies, and programs; national NGOs	• Promote a national initiative such as the White House's Let's Move Initiative, aimed to reduce childhood obesity • Provide grant funding, such as the CDC Putting Prevention to Work grant or Partnership for Sustainable Communities grants to support livable communities, which can incorporate health considerations	PSRC received a HUD grant in which public health stakeholders are participating, and one of the county public health departments received a CDC grant that has helped fund PSRC to develop a bicycle and pedestrian toolkit and to integrate health into the LRTP.
Research and analysis	MPO staff, academics, local technical staff	• Develop tools by which health-related transportation infrastructure and other investments can be tracked and measured • Assess and quantify connection between land use and transportation strategies and healthy behavior outcomes	SACOG has a strong data and technical mapping capacity and currently manages I-PLACE^{3}S, a scenario planning tool. In 2009, SACOG partnered with a group at the University of British Columbia, to develop health and climate change / air pollution modules for I-PLACE^{3}S.

Appendix C Table 3 Incorporation of Health into the Transportation Planning Process by Case Study MPOs

MPO Name	Regional Vision and Goals	Development of Transportation Plan	Development of S/TIP	Monitor System Performance
Nashville Area MPO	• Connection with Eat Well Play More Tennessee	• Data and research to identify long-term health needs and connections	• Designation of 15% of funding for active transportation • Project selection criteria includes food access, health disparities, and physical activity	• Systems-level performance measurement but interested in shifting to performance-based project management
PSRC	• Studies connecting health and transportation • Inclusion of health goals in Vision 2040	• Inclusion of health in definition of LRTP priority measures	• LRTP health priority measures may be applied to project selection in future	• LRTP priority measures are being used to monitor plan and communicate with the State legislature
SACOG	• Blueprint Project to study linkages between transportation, land use, and air quality	• Inclusion of health narrative and access measures in MTP • Air quality focus in Sustainable Communities Strategy	• Project selection criteria indirectly address health • Requirement for bicycle / pedestrian component in STP road rehabilitation funding	• Performance measures and metrics are being pursued and developed for assessing the MTP and funding trends
SANDAG	• Draft Health and Wellness Policy Framework • Developing health-related indicators for the regional comprehensive plan	• Inclusion of the connections between land use, physical activity, and health benefits of physical activity	• Voter-approved list of projects funded by sales tax provides limited support to smart growth and bicycle, pedestrian, and safety projects and requires bicycle/pedestrian accommodation where possible	• Developing health-related indicators for LRTP

Darker colors signify greater progression in activity