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Introduction

Overall, the region's population is healthy when compared to state averages.[1] However, this aggregate masks disparities in health outcomes across the region. Such differences can have many causes beyond personal choices on food, exercise, and other activities. A current body of research known as social determinates of health (SDOH) attempts to understand the environment-based causes of such disparities, finding that where people are born, grow up, live, work, and age, as well as the systems put in place to deal with illness, determines health outcomes.[2] Moreover, many of these disparities are preventable through improving quality of life, economic opportunity, safety, and similar factors.

The SDOH framework shares much in common with CMAP's existing work on Inclusive Growth.[3] Through the Inclusive Growth Strategy Paper, CMAP identified that high levels of economic inequality limits the ability of many talented and skilled residents to succeed, due to compounding factors such as the community they live in, their race or ethnicity, and/or their socioeconomic status. These external limits on opportunity can extend across generations, circumscribing the lifelong earnings and entrepreneurial potential of residents through decreased access to quality education, employment, housing, community, or transportation choices. Health policy experts (see appendix A: Resource Group members) in our region believe that these same factors also drive health disparities in our region given the SDOH framework. Partners are already utilizing this framework to understand health outcomes in some parts of the region. For example, the Chicago Health Atlas documents how differences in race, ethnicity, economic hardship, and where someone lives in the City of Chicago are associated with very different life expectancies.[4]

The Chicago Metropolitan Agency for Planning (CMAP) is in the process of developing ON TO 2050, the region's next comprehensive plan, scheduled for adoption in October 2018. Plan development includes the creation of strategy papers, which are intended to help shape content for ON TO 2050 by providing the agency with direction on new topics, exploring how GO TO 2040 recommendations can be further refined, and identifying additional research needed to support the plan's development. This paper provides strategies for ON TO 2050 to improve health outcomes in the region by focusing on health equity, which is defined through the following vision. *All residents in the Chicago Metropolitan Region will reside in livable communities with equitable resources and opportunities necessary for optimal health and well-being.* Meaningful engagement of everyday people in the region, particularly in disadvantaged communities, and building regional partnerships are central in reaching this vision.

[1] For example, four counties in the region rank in the top 12 for overall health outcomes in the state of Illinois. www.countyhealthrankings.org

[2] http://www.who.int/social_determinants/sdh_definition/en/

[3] Chicago Metropolitan Agency for Planning, *Inclusive Growth Strategy Paper*.

[4] https://www.chicagohealthatlas.org/indicators/life-expectancy

CMAP is using a health equity framework because it is a natural extension of the agency's inclusive growth work. First, many of the factors identified by SDOH as affecting health outcomes also limit the economic potential of residents in the region (e.g. economic inequality, community in which they live, long commutes, poor housing options, and race or ethnicity). Second, many strategies to address economic inequality are human capital-based. Health is a key input to human capital and strategies that facilitate improved health complement and enhance already identified human capital recommendations flowing from the inclusive growth work.

This paper focuses heavily on collaboration between public health, transportation, and planning departments, and community-based organizations, health institutions, service providers, and regional agencies like CMAP. This strategy paper encourages partnerships among these groups on issues that are important to advancing health equity. Therefore, some of the strategies may be more or less appropriate to CMAP while others emphasize the direct involvement of key partners.

The strategy paper is divided into five sections:

- The first section describes **existing barriers to health equity**. This section summarizes barriers into broad thematic categories that emerged from stakeholder input.
- The second section provides an **assessment of the public health landscape**. This includes an evaluation of initiatives at peer MPOs to address health impacts and a review of public health planning at local and state health departments.
- Section three presents an **overview of existing agency work on public health**, including strategies already developed for the ON TO 2050 plan.
- Sections one through three informed the **strategy recommendations** for the agency and its partners to consider, in section four. This section illustrates two overarching strategies and three key strategy areas.
- The final section details **next steps** for how CMAP will continue to advance health equity in the region.

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Stakeholder input on health equity barriers

It is difficult to disentangle one factor from another when it comes to the SDOH drivers of health outcomes; they are connected through policies, practices, systems, and sectors, as well as through their impact on communities. For example, a lack of public safety can inhibit economic development in communities, which can reduce employment, income, and wealth, which in turn can reduce health. But, the levels of educational attainment, income, wealth, and employment, along with other factors, are all associated with risk of violence (public safety). Additionally, bias, discrimination, racism, and classism interplay and influence these other factors and thereby influence health outcomes as well. Given the scale and complexity of existing barriers to health equity, the Health Equity Resource Group decided to focus beyond one specific determinant or strategy to engage in a systems approach to health equity.

CMAP convened two listening meetings with key stakeholder groups to identify barriers to health equity, specifically considering those populations most vulnerable to the social determinants. Representatives from education, public health, municipal government, immigrant rights, advocacy, and other community-based groups shared their thoughts. Feedback was also collected via surveys administered in public spaces and events as part of the extensive ON TO 2050 public engagement process designed to gather input from a representative sample of the region. Participants suggested how to create a culture of health through the planning process and listed barriers ranging from individual behaviors to structural factors that hinder residents from achieving better health. For the purposes of the strategy development, the Health Equity Resource Group worked with listening group members to connect individual behaviors to larger population outcomes that would suggest a specific policy strategy recommendation. Broad thematic categories that emerged from stakeholder input are outlined below, many of which are incorporated in the overarching and key strategies of this paper.

Stakeholders most commonly identified the marginalization of certain groups as the key health equity barrier. Several respondents discussed the imbalance of power and privilege that persists across multiple sectors and exacerbates disparities between groups. This highlighted the importance of recommendations for eliminating racism and social exclusion in public decision-making. When recommending strategies to improve health, the Health Equity Resource Group decided to consider those strategies that would address the needs of vulnerable populations including undocumented residents, youth, elderly, and residents with disabilities. These groups tend to experience multiple unintended consequences of public decision-making resulting in worse health outcomes and persistent inequities. In addition, members of these groups tend to be excluded from the decision-making processes that affect them. Respondents recommended incorporating the voice of excluded populations in as many ways as possible.

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Housing affordability
Many stakeholders also identified availability of safe, healthy, accessible, affordable housing as critical to health. Respondents noted that many of the region's residents are housing cost-burdened, paying more than 30 percent of household income for housing costs. Many respondents shared concerns about displacement due to neighborhood improvements that can drive up housing costs and other costs of living. Rising housing costs could cause many residents to move to locations that potentially limit job and transportation access and otherwise reduce community connectedness. Additionally, substandard housing was a concern to many stakeholders. Without effective inspection enforcement process for landlords, residents may live in unhealthy homes. Immigrants and undocumented residents may be particularly vulnerable to housing barriers due to fear that landlords will report them to U.S. Immigration and Customs Enforcement if they complain of substandard housing.

Transportation accessibility
Many stakeholders indicated that access to transportation presents a barrier for both urban and suburban communities. Youth, low-income, residents with disabilities, and elderly residents are especially vulnerable as these groups often cannot drive and/or rely upon public transportation, walking, or bicycling. Transportation systems in suburban areas generally do not facilitate pedestrian and bicycle travel, while accompanying low-density, single-use development patterns limit the potential for transit. Additionally, participants raised concern about pedestrian safety due to physical barriers, which often a reason cited for not using non-motorized transportation options such as bicycles. Safety can also be a structural barrier to health equity, as, again, it can discourage the use of bicycles for transportation. Parents, for example, may be increasingly worried about traffic safety for their children, resulting in their refusal to let their children walk or bike to destinations.

Climate change vulnerability
Exacerbated health disparities caused by a changing climate were identified by stakeholders as a key barrier to health equity. Climate change vulnerability is the degree to which people and places are at risk from the impacts of climate change, and takes into account how well they can cope with those impacts.[5] As outlined in the Climate Resilience strategy paper, changes in climate have multiple impacts on residents within the Chicago region as extreme heat and drought have increased in recent years, and more frequent severe weather events are occurring.[6] However, not all individuals or communities are equally affected by climate change. The disproportionate impacts of climate change on individuals with pre-existing chronic illness and socially disadvantaged groups threaten to exacerbate existing health and social inequities.[7] Improving underlying health status and living conditions while strengthening the resilience

[5] Rudolph L, Gould S, Berko J. *Climate Change, Health, and Equity: Opportunities for Action*. March 2015. Public Health Institute, Oakland, CA.
[6] Chicago Metropolitan Agency for Planning, *Climate Resilience*
[7] Ibid.

and social cohesion of communities facing both climate impacts and health inequities can improve their ability to survive and thrive in the face of climate changes.

Built environment

Stakeholders identified disparities resulting from overlapping and interacting policies and practices that govern the built environment, noting that neighborhoods and communities in the Chicago region have physical characteristics that promote health while others do not. Stakeholders noted that many of the circumstances in communities of color today are the result of historical land use and real estate policies and practices that effectively barred people of color from being able to live, work, or spend time in certain neighborhoods. One of the legacies of these and related practices is the pervasive overconcentration of environmentally hazardous land uses and exposures in low-income, communities of color throughout the Chicago region. When factored alongside limited access to green space and appropriate active transportation options, the design of many Chicago-area communities has led to disparate health outcomes.

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The health equity landscape

As health equity spans a multitude of fields, gaining understanding of and building on related efforts at partner organizations are crucial to developing a robust regional framework to ensure multi-sectoral collaboration and address the interconnected challenges of health equity. Additionally, as public health and health equity have increasingly become a focus of planning and policy across the nation, initiatives and strategies pursued at peer organizations can reveal a range of approaches and best practices for CMAP to draw upon. As such, the following section details the current landscape for health equity policy and planning, both in the region and nationally, to provide context and guidelines for health equity in ON TO 2050.

Public health planning at local and state health departments

Local and state health departments in the State of Illinois are required to produce community health assessments as well as community health improvement plans in response to those assessments every 5 years.[8] To provide context for these external policies driving health equity in the region, this section reviews recently developed community health improvement plans from health departments across the Chicago metropolitan region, including in Chicago[9]; Cook[10], Lake[11], DuPage[12], and Kane[13] counties; and that of the State of Illinois[14].

Overall, community health improvement plans have a strong programmatic approach focused on changing individual behavior. For example, there is a strong trend of policies that focus on issues in the realms of healthy eating, active living, smoke-free policy, and worksite wellness. While valuable to public health and affected by public policy and planning, discussion of programmatic efforts are largely excluded from this strategy paper, as they are less pertinent to developing regional strategies for addressing barriers to health equity. Instead, this section highlights where the plans align public health with structure-level interventions in both the natural and built environments.

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[8] Illinois TITLE 77: PUBLIC HEALTH CHAPTER I: DEPARTMENT OF PUBLIC HEALTH SUBCHAPTER h: LOCAL HEALTH DEPARTMENTS PART 600 CERTIFIED LOCAL HEALTH DEPARTMENT CODE SECTION 600.400 PUBLIC HEALTH PRACTICE STANDARDS ftp://www.ilga.gov/jcar/admincode/077/077006000D04000R.html

[9] City of Chicago Department of Public Health, *Healthy Chicago 2.0.*

[10] Cook County Department of Public Health, *WePlan2020. Improving Community Health & Health Equity for Suburban Cook County.*

[11] Lake County Health Department and Community Health Center, *Live Well Lake County Community Health Improvement Plan,* August 24, 2016.

[12] Impact DuPage, *Impact DuPage: Driving DuPage Forward*

[13] Kane County Health Department, *Kane County Community Health Assessment and Improvement Plan*, Nov 2016.

[14] Illinois Department of Public Health, *State Health Improvement Plan*, April 2016.

While each community health improvement plan is different, some common areas for policy, planning, and programmatic focus emerged across the plans that were reviewed**:**

- Promoting active transportation as a means of advancing active living, including complete streets and investments in walking, bicycling, trails, and transit infrastructure.
- Tobacco reduction efforts.
- Worksite wellness policies and programming.
- Healthy food environment to promote healthy eating behaviors.
- Establishing health equity as a goal or vision.

The reviewed plans mentioned a few important planning and policy issues. While these are uncommon, not fully developed, or both, these are worth noting in a discussion of structural determinants of health inequities, given that inequitable policies are structural determinants of health inequities. Those that were found in the reviewed plans include housing affordability, climate change, economic equity, education equity, housing and community displacement reduction, and the Earned Income Tax Credit. Healthy Chicago 2.0 included a focus on utilizing a "Health in All Policies" approach, which resulted in passage of a resolution, a process of developing recommendations among city government agencies, and publication of a report, although this did not include a strong public engagement component, which is essential for advancing health equity.[15] Although they could have had a stronger focus on eliminating structural inequities, each of these efforts are noteworthy, because they represent movement toward focusing on policy change, which can help move toward health equity.

To address health equity comprehensively, strategies will need to focus on authentic public engagement, revenue policies, revitalizing disinvested communities, and building the capacity of neglected people and places. Analysis in the Inclusive Growth strategy paper concludes that these strategies can lead to stronger, longer periods of economic growth for the entire region. Additionally, the vision of "Health in All Policies" included in some plans requires broad implementation to be effective in achieving health equity. While not often found in community health improvement plans, these policy and planning strategies may be advanced via ON TO 2050's health equity focus.

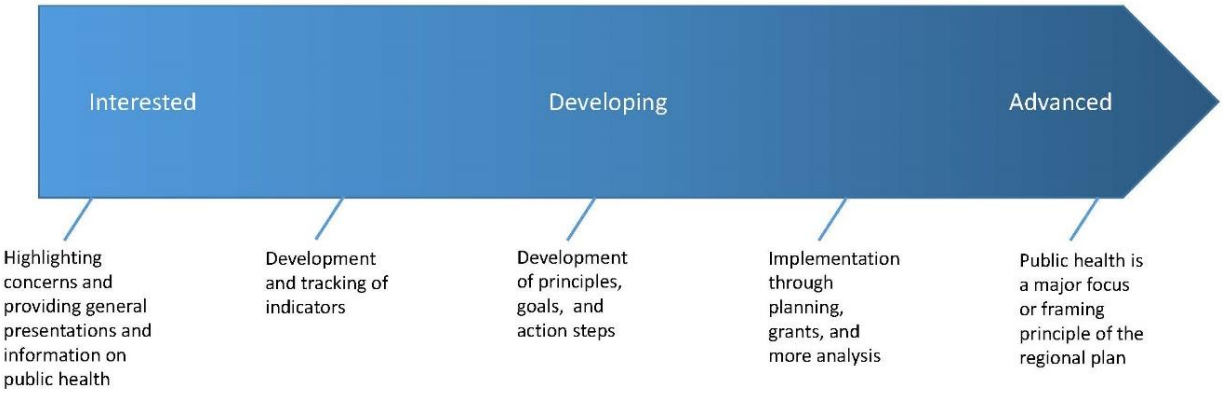
Public health at peer metropolitan planning organizations

A number of peer metropolitan planning organizations (MPOs) have developed various strategies and goals that focus on the interactions between health and land use or transportation. In addressing concerns regarding public health, the majority of CMAP's peer agencies detail active transportation, access to open spaces and parks, environmental pollutants, and health education as opportunity areas to promote community health. Many peer

[15] City of Chicago Health in All Policies Task Force Final Report August 1, 2017. https://www.cityofchicago.org/content/dam/city/depts/cdph/CDPH/HealthInAllPoliciesReport_08012017.pdf

organizations looked at public health from a broad lens, but certain organizations made targeted efforts to promote health among higher-risk segments of the population. For example, the Atlanta Regional Commission (ARC) and Metropolitan Area Planning Council (MAPC) of the Boston region both make concerted efforts to address health disparities among lower-income individuals. The Puget Sound Regional Council (PSRC) and Denver Regional Council of Governments (DRCOG) pay special attention to address the health needs of older adults and people living with disabilities. Ultimately, the chosen MPO approach is based on the organization's unique authority and the local context. As shown below, CMAP categorizes these **approaches to public health at peer MPOs within a range from "Interested" to "Developing" to "Advanced."**

Figure 1. CMAP analysis of peer agencies rubric.



Source: Chicago Metropolitan Agency for Planning

The **"interested"** category identifies regional organizations that make general connections to public health in their regional transportation plans or include health resources on their website.

- For example, the North Jersey Transportation Planning Authority (NJTPA) mentions the health benefits of meeting the U.S. Environmental Protection Agency (USEPA) Clean Air Act emissions standards and walkable communities, but does not provide specific recommendations, goals, or strategies related to public health.
- Additionally, the Delaware Valley Regional Planning Commission (DVRPC) created a Health Data Snapshot to understand the geographic distribution of health outcomes. The Data Snapshot offers maps, data descriptions, a Health Disparities Index, and a Community Investment Index (CI2). The Health Disparities Index reviews the relationship of four health-related indicators–overweight/obesity, asthma, diabetes, and high blood pressure–to behaviors partially dictated by development patterns and access to transportation choices. The CI2 links planning and grant making allowing planners to target projects that will be most competitive for funding and have the greatest local-area impact. DVRPC also provides teacher resource guides and structured lessons to supplement public school curriculum with health education.

- Though efforts such as snapshots represent a significant effort to support public health, organizations in the "interested" category have yet to take steps to adopt specific principles or goals to improve public health in the region.

The **"developing"** category of regional planning agencies have integrated public health into a regional transportation plan or are in the process of doing so. These agencies also provide health-related information, resources, or toolkits.

- The Mid-American Regional Council (MARC) in the Kansas City metropolitan area includes public health as a specific goal in their plan, "Transportation Outlook 2040", listing strategies including encouraging active transportation, promoting healthy community design, and attaining federal air quality and ozone standards, among others[16]. Selection criteria for regionally significant transportation projects that support "Transportation Outlook 2040" include five percentage points for promoting an increase in non-motorized travel and an additional five points for reducing precursor ozone emission levels. MARC also includes a "Healthy Living" page on their website, with information for individuals, communities, and employers in topics such as healthy eating, physical activity, and tobacco use.
- Additionally, the Metropolitan Council of the Twin Cities region created a "2040 Transportation Policy Plan" that includes a "Healthy Environment" goal and details strategies to decrease congestion, citing the positive impacts on air quality and related health impacts including decreased asthma and heart disease[17]. The "2040 Transportation Policy Plan" also covers water quality concerns, declaring the Mississippi River a public health hazard.

"Advanced" agencies are those with regional plans that make definitive connections between health and land use or transportation and identify how specific diseases can be impacted through policy changes in the built environment. These organizations have also institutionalized the integration of public health into plans and policy by designating staff to work on this topic area. Increasingly, advanced agencies are also beginning to pay specific attention to social determinants of health and how health inequities can be remediated by addressing these determinants.

- MAPC, the regional planning agency in Boston, uses factors such as violent crime, income, racial and ethnic segregation, unemployment, and others to create a comparative index. Moreover, MAPC has a Public Health department that focuses exclusively on integrating public health initiatives into all agency planning, project, and policy work, allowing the organization to provide detailed reports and presentations on public health, including one that directly links Complete Streets to healthier communities. Through this unique approach, MAPC is able to draft targeted approaches and recommendations that promote

[16] Mid-American Regional Council, *Transportation Outlook 2040*.
[17] Metropolitan Council, *2040 Transportation Policy Plan*.

public health. MAPC's website also features a data portal with roughly 50 charts and maps regarding public health in the region[18].

- Additionally, the Nashville Area Metropolitan Planning Organization has incorporated a goal to "Help Local Communities Grow in a Healthy and Sustainable Way" in their transportation plan titled "Middle Tennessee Connected."[19] Strategies to achieve this goal center on forming policy, providing funding, and conducting research that support the improvement of health outcomes through active transportation.

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[18] Metropolitan Area Planning Council, *Public Health*.

[19] Nashville Area Metropolitan Planning Organization, *2040 Regional Transportation Plan*.

CMAP's approach to public health

To date, CMAP has incorporated public health into a number of agency initiatives. In 2009, CMAP published a Health Report in partnerships with the University of Illinois at Chicago's School of Public Health and the Chicago Community Trust to inform development of GO TO 2040. The report included indicators to watch and 12 recommendations pertaining to "Integrated Prevention/Health Promotion Strategy," "Data for Integrated Planning and Monitoring," and "Public Health Infrastructure".[20] GO TO 2040 recommended public policies for land use, transportation, and housing with an emphasis on development patterns that support walkable communities, transit, and access to jobs. The plan also recommended focusing affordable housing in transit-rich areas with access to jobs and amenities.

Additionally, transportation programs like the Congestion Mitigation and Air Quality Improvement (CMAQ) program consider emissions and air quality when selecting projects. CMAP has also addressed Public Health through its Local Technical Assistance (LTA) program. Examples of LTA projects that address public health include a Health Impact Assessment for a busy intersection in the Village of Carpentersville and the Green Healthy Neighborhoods (GHN) plan that addresses repurposing vacant parcels in low-income neighborhoods of Chicago.[21], [22] The GHN plan recognizes that vacant and abandoned buildings, or parcels, influence health in myriad ways. For example, they are directly related to crime and resident perceptions of safety, which in turn create barriers to utilizing outdoor public space for things like recreation.[23]

ON TO 2050 and health equity

CMAP's work since GO TO 2040 was adopted, including research for ON TO 2050, has highlighted the importance of considering additional factors to achieve health equity in the region. These include strategies to help address unique challenges that communities face, adapt to a changing climate, and promote economic opportunity.

Many of the ON TO 2050 strategy papers include recommendations relevant to public health, and this paper expands upon those strategies most directly tied to advancing health equity in the region. Because CMAP's core agency responsibilities are land use and transportation planning, the bulk of these strategies focus on addressing health equity and structural factors that influence the social determinants. The following is a summary of major topic areas in land use and transportation planning relevant to health equity covered in other strategy papers:

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[20] Chicago Community Trust, *Health Report*, October 2009.
[21] Chicago Metropolitan Agency for Planning, *A Health Impact Assessment for Carpentersville*.
[22] Chicago Department of Planning & Development, *Green Healthy Neighborhoods*, March 20, 2014.
[23] Todman, L., et al. (2012). Mental health impact assessment: population mental health in Englewood, Chicago, USA. *Impact Assessment and Project Appraisal, 30(2)*, 116-123.

Land-use policies to support livability and municipal capacity

- **Integrating green infrastructure**, investing in **stormwater management**, and **conserving** natural resources and agricultural lands. Examples of potential health outcomes: improve air quality, protect the water supply, ensure food security, and mitigate climate change and its negative impacts (extreme weather, disasters, etc.).[24][25]
- Prioritizing **existing assets** and encouraging reinvestment and infill to create **compact, walkable, mixed use communities**. Examples of potential health outcomes: encourage physical activity and mitigate the addition of new impervious surfaces that lead to stormwater runoff, urban heat island effects, and exacerbation of climate change.[26]
- Reforming state and local **tax policies** to increase revenue and create a balanced local land-use mix. Examples of potential health outcomes: reduce inequities in access to amenities and services related to health by building municipal capacity.[27]
- Expanding **housing choice**. Examples of potential health outcomes: provide more affordable housing and alleviate financial stress to free up resources for healthy lifestyles.[28]
- **Reinvest in disinvested areas** to promote a strong quality of life and access to jobs within communities. Examples of potential health outcomes: reduce stress from shorter commute times, improve access to health resources, and mitigate the impact of new impervious surfaces.

Modernizing transportation to improve regional mobility and access

- Invest in **transit** access and expand services. Examples of potential health outcomes: link more people to jobs, training, education, healthcare, and activities.[29]
- Promote **active transportation** by providing more convenient and safe pedestrian and bicycling facilities and environments. Examples of potential health outcomes: Reduce inequities in obesity, diabetes, heart disease, and asthma.[30]
- Promote **environmental justice** in freight planning and improve **highway operations** for increased safety and efficiency. Examples of potential health outcomes: Reduce inequities in proximity to air and noise pollution; mitigate congestion and traffic injuries/fatalities.[31]
- Expand **transportation system funding** with pricing mechanisms and additional revenue streams. Examples of potential health outcomes: reduced auto-dependence and

[24] Chicago Metropolitan Agency for Planning, *Integrating Green Infrastructure*.
[25] Chicago Metropolitan Agency for Planning, *Stormwater Management*.
[26] Chicago Metropolitan Agency for Planning, *Asset Management*.
[27] Chicago Metropolitan Agency for Planning, *Tax Policies and Land Use Trends*.
[28] Chicago Metropolitan Agency for Planning, *Expanding Housing Choice*.
[29] Chicago Metropolitan Agency for Planning, *Transit Ridership Growth Study*.
[30] Chicago Metropolitan Agency for Planning, *Non-motorized Transportation*.
[31] Chicago Metropolitan Agency for Planning, *Highway Operations*.

Vehicle Miles Traveled (VMT) and more capacity to build resilient infrastructure and reduce inequities in mobility.[32]

Along with the strategy papers specifically addressing unique challenges that these communities face, the Municipal Capacity paper covers a wide range of recommendations to help municipalities maintain and enhance their infrastructure, address their fiscal condition, explore service sharing, and enhance their technical assistance and resources. CMAP is additionally in the process of researching and identifying flood risk areas, climate vulnerability areas, and areas with low access to parks and open space, which can guide future priorities for targeted investment to improve health equity in these aspects. To advance health equity, such efforts will need to utilize a "development without displacement" approach that uses multiple strategies that can reduce economic displacement of people from their homes and communities.

As health equity and its structural determinants span a wide range of policy areas, there are also many fields beyond CMAP's purview and expertise, such as public safety, education and workforce training, and local food production. While CMAP is engaged in research in topics relevant to these fields—for example, CMAP tracks and analyzes key agricultural assets, as well as industry clusters that provide middle- and high-wage jobs—implementation will rely on cross-sector collaboration with various regional partners. As such, this strategy paper also explicitly addresses stakeholder groups and key implementers crucial for including in the process to advance regional goals for health equity.

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[32] Chicago Metropolitan Agency for Planning, *Transportation System Funding Concepts*.

Strategy recommendations

This strategy paper articulates how a health equity lens will be incorporated into strategies across ON TO 2050 topic areas. Thus, it builds on many of the strategies already in other strategy papers and incorporates processes for measuring health and health equity impacts. This section identifies overarching strategies and strategies within three key strategy areas.

Overarching strategies

Standardize best practices that promote health equity

Health equity can be understood as an inclusive process of assurance of the conditions for optimal health across diverse groups. Developing standardized equitable practices and processes with a focus on advancing health and health equity will help ensure that public projects and planning promote health equity.

Continue to foster inclusive public outreach processes

Disadvantaged or underrepresented population groups often lack representation in the development and political process. Without giving all population groups an equitable voice, health equity is impossible to achieve. A primary goal of all CMAP's LTA projects is to elevate community engagement in planning –particularly focusing on engaging populations and issues that are typically underrepresented in previous planning processes. CMAP and its partners should continue to investigate model practices and existing resources to help communities address public health concerns through broader-based stakeholder engagement, collaborative processes, and other forms technical assistance. For example, municipalities can form health advisory committees involving populations who are particularly vulnerable to health impacts, such as seniors, youths, people with disabilities, and low-income, minority populations.[33] In many cases, the most effective way to engage residents is through community events. Block parties, street fairs and festivals, and community gardens can all help bring different groups together and help residents to have more opportunities to be informed and engaged. Developing a more formal outreach program may be helpful to increase communication and collaboration among communities' various community groups in an effort to advance health equity.

Support health impact assessments for substantial transportation and development projects

Health Impact Assessments (HIAs) are powerful tools designed to help communities make informed decisions that improve public health through community design that can positively impact health. While Environmental Impact Statements have become standard procedure for making sound development decisions and protect environmental interests, HIAs are still underutilized in project selection and development. Effective use of HIAs highlights how specific developments affect health in certain populations, helping to address health inequities

[33] Gilbert, Richard, *Healthy Communities for Youth and Old: How Transit and Better Community Design Help the Most Vulnerable Generations*," Centre for Sustainable Transportation, May 1, 2016.

by prioritizing key transportation and infrastructure projects in disadvantaged communities. CMAP should recommend and provide technical assistance dollars for conducting HIAs that utilize health equity concepts and goals in the planning and development processes of major transportation and infrastructure projects, such that these HIAs both measure potential health impacts of future projects and their ability to reduce health inequities.

Develop and implement displacement prevention strategies
Displacement can have significant implications on public health. Among other concerns, employment, income, mental health, and overall well-being related to increased levels of stress are all adversely affected when residents are displaced. CMAP should seek to further understand how community displacement relates to development and transportation projects, along with policy remedies that limit impacts, such as the use of Community Benefits Agreements.

Improve data collection, analysis, and availability for evidence-based policy and decision-making

Dependable and timely data can track progress in improvements in social determinants of health, structural determinants of health inequities, and health status and outcomes. When properly collected and analyzed, quality health data and metrics serve as an important first step in reducing health inequities. Data can help shift the focus of strategies to effect change among populations and areas with the greatest needs. They can guide interventions of various types, measuring relative failures and successes, and indicating changes to future interventions.[34] The following strategies will standardize health data across municipalities and allow for long-term monitoring of health impacts.

Expand evaluation metrics to highlight benefits to economically disconnected areas
In programming Congestion Mitigation and Air Quality Improvement (CMAQ) funds, CMAP calculates a metric for areas with high concentrations of particulate matter emissions and large minority and low-income populations. Along with age, these are significant predictors of sensitivity to air pollution and therefore indicate where health might improve most by making emissions reductions. In the last programming cycle, CMAP included existing air pollution in the CMAQ analysis and is seeking the most comprehensive air quality data available. This will enable further targeting of investments in a way that benefits sensitive populations as well as regional air quality. If more granular data can be used – at perhaps the census tract level – on observed or modeled asthma rates or other indicators of respiratory distress, this could further improve the scoring for CMAQ projects.

[34] CSDH (2008). Closing the gap in a generation: health equity through action on the social determinants of health. Final Report of the Commission on Social Determinants of Health. Geneva, World Health Organization.

Explore options for expanding and coordinating primary health data collection

One of the most regularly collected sources of primary health information across counties is the Behavioral Risk Factor Surveillance System (BRFSS) survey.[35] It is collected every two years and available at county level geographies. For a fee, local health departments can contract with the Illinois Department of Public Health to conduct a local version of the BRFSS or oversample at the community level to allow for more refined data by race and geography. This allows for expanded information on mental health at the community level, if additional questions are added. Oversampling this data will allow more specific health data tracking in an effort to highlight and address health inequity among population groups. County, municipal public health departments, and hospitals and health institutions, with philanthropic support, should contract for such oversampling. Although these data are self-reports about health status and behaviors, they nonetheless represent one of the clearest sources of information about health outcomes. Data users should coordinate for more robust collection of BRFSS data in order to more fully understand how health varies by geography and specific population.

Hospital systems, universities, and public health departments routinely collect health data from target areas and specific populations. These data can often be rich but are rarely standardized across place or institution. Entities that collect such data should explore options for greater coordination and sharing of data.

CMAP and partners should develop an index of health and structural determinants of health inequities indicators that is common across the region and can be broken down by race/ethnicity, class, gender, and disability

Clear indicators are needed to measure progress toward achieving health equity in the region. Similar to the concept of County Health Rankings,[36] CMAP should assist partners in monitoring key health measures that are disaggregated by race/ethnicity, class, gender, disability, and geography as an immediate next step. CMAP should convene county health departments and others to identify common data sources/metrics that can be disaggregated by race and geography, enabling the monitoring of progress on reducing concentrated disadvantage and health inequity. Currently, most health indicators rely on secondary sources that are available at the county level. A common index of health and structural determinants of health inequities indicators, will allow for better monitoring within municipalities or counties (Example: Oversampling of BRFSS may yield a key racial health indicator that can be disaggregated by race/geography, with a broader regional goal being to reduce inequities across and within municipalities). One resource that may be of use is the National Equity Atlas, which utilizes census data and includes measures pertaining to economics and employment, disconnected youth, school poverty, air pollution, asthma, housing burden, commute time, neighborhood poverty, and others.[37] The Chicago region is home to numerous education institutions that

[35] Centers for Disease Control and Prevention, *Behavioral Risk Factor Surveillance System*.
[36] University of Wisconsin Population Health Institute. *County Health Rankings*.
[37] Policy Link and the Program for Environmental and Regional Equity (PERE). National Equity Atlas. Accessed on November 20, 2017 http://nationalequityatlas.org/.

could play a strong partnership role in helping CMAP to develop and track indicators of health equity.

Monitor integration of health and health equity in municipal policies
Comprehensive policy reviews are needed to ensure health inequities are properly being addressed in municipal decisions. Regular policy assessments by municipalities, local health departments, and local planning departments will track progress of integration and implementation of health and health equity in municipal policies. CMAP or partners should assist municipalities in creating an assessment tool that monitors the degree to which policies and practices integrate health and health equity, measuring integration of health equity goals, and also utilizing policy impact evaluation studies, that would seek to evaluate the impact of policy and planning efforts on health inequities. The National Academies of Science, Engineering, and Medicine, sponsored by the Robert Wood Johnson Foundation, offers an interactive website with information on the underlying causes and conditions of health inequity –as well as examples of community-based solutions that address health disparities and promote health equity.[38] A similar health equity toolkit is currently implemented in Ontario, Canada.[39]

Key strategy areas

Pursue environmental justice and climate resilience for vulnerable communities

The effects of climate change have significant implications for the built environment, economies, and ecosystems—all of which impact the living conditions upon which people's health depends. As the Climate Resilience strategy paper describes, climate change impacts in northeastern Illinois will include more frequent and severe weather, extreme heat, and drought, which will heighten risks of illnesses and mortality as well as emotional distress and property damage. Building resiliency into public policy, planning, and infrastructure will help communities withstand and recover from many overlapping challenges posed by climate change and other related environmental issues. A focus on environmental justice is necessary in this process to help the most vulnerable communities build resilience against environmental challenges and advance the goal of improving quality of life for all residents in the region.

Prioritize investment to limit the negative air quality, noise, congestion, pollution, and other impacts of major transportation facilities
Environmental justice has already been incorporated in several CMAP transportation planning and investment efforts. As part of its freight planning work, CMAP also developed a Regional Strategic Freight Direction (RSFD) memo to address freight impacts in EDAs, which strongly

[38] The National Academies of Science, Engineering, and Medicine, Communities in Action: Pathways to Health Equity, January 25, 2017.
http://resources.nationalacademies.org/infographics/healthequity/healthequity.html
[39] Ontario Ministry of Health and Long-Term Care. Health equity impact assessment (HEIA) workbook. 2012.

overlap the region's freight land use clusters. The RSFD recommends directing CMAQ funds to projects and facility improvements, such as cleaner and quieter trucks and locomotives, noise walls, and highway-rail grade separations, to freight activity proximate to EDAs in order to directly mitigate environmental justice concerns.

However, to broaden the reach of environmental justice in investment and development decisions in local communities region-wide, many strategies will also require partner agencies and municipalities to take the lead.

- Municipal and county public health departments should enact ordinances to protect residents from exposure to environmental pollutants. These regulations could include restrictions on industrial chemical shipping and storage (e.g. Petcoke and manganese); enforcement of existing lead paint removal requirements; and new minimum targets for municipal lead pipe removal in conjunction with existing water service modernization efforts. Unhealthy home conditions, like lead paint, are especially detrimental to children, who are particularly susceptible to lead poisoning and can suffer permanent brain damage as a result. Municipalities should partner with organizations such as the Metropolitan Tenants Organization and the Civitas ChildLaw Center at Loyola University to develop programs and secure funding to incentivize proactive inspection and abatement of lead and other harmful substances from homes.
- To advance environmental justice, CMAP and partners could research and implement best practices for environmental justice integration into local planning and transportation funding. CMAP's Local Planning Program offers resources that help municipalities to develop policies that support the goals of GO TO 2040, both through the Local Technical Assistance program and through more general model ordinances and toolkits. CMAP should develop and disseminate resources to provide municipalities, transportation departments, and transportation providers with tools and practices to implement environmental justice into their local processes.

Build resilience for climate change, particularly in under-resourced communities.
Climate impacts do not affect all communities in the region equally. A community's geographic location, physical and socioeconomic characteristics, and capacity can significantly influence its degree of vulnerability to climate change. At the broadest level, our region should emphasize strategies that reduce effects, particularly in communities that are least equipped to respond to climate change.

CMAP's Climate Resilience strategy paper covers a wide range of recommendations to build climate resilience through land use planning, infrastructure planning, natural resource management, economic development, and capacity building.[40] Certain populations have greater vulnerability from climate impacts and associated health risks. For instance, older adults, infants and children, as well as people with disabilities, may be less physically able to respond to disasters or extreme temperatures, and can face a greater risk of heat or cold related

[40] Chicago Metropolitan Agency for Planning, *Climate Resilience*, December 2016.

deaths and illnesses. As such, the strategy paper emphasizes equitable reduction of vulnerability by ensuring that the most vulnerable communities have infrastructure and service capacities to withstand and recover from climate impacts.

CMAP is also in the process of creating a climate vulnerable population layer, using a similar methodology as the Economically Disconnected Areas layer but with a few additions to capture additional variables that contribute to climate vulnerability. These additional variables are largely based off of work done by the Center for Disease Control and Prevention (CDC) and their Social Vulnerability Index for resilience to natural disaster.[41] This climate vulnerability layer would highlight populations within the region that could be more vulnerable to the impacts of climate change. Such a map could assist implementers as they prioritize hazard mitigation planning, capacity building, green infrastructure installation, and other activities.

Integrate healthy community design approaches to support the health of residents

GO TO 2040 recommended achieving greater livability through land use planning and multimodal infrastructure improvements. Community design and planning to create a livable built environment can have significant impacts on public health by various mechanisms, including opportunities for physical activity, economic vibrancy, mental health, and mitigating community violence. As investments are made in infrastructure, housing, and other aspects of the built environment, integrating health equity can ensure that the greatest potential benefits are realized for all residents.

Continue to promote active transportation in local planning to create walkable communities

With increasing linkages between our travel choices and health outcomes, many health professionals are turning to non-motorized transportation to reduce air pollution, prevent traffic injuries and deaths, and lower obesity, cardiovascular disease, diabetes, and cancer rates. Strategies to increase safety and create walkable communities can help seniors and disability populations overcome mobility barriers by locating services and amenities in close proximity to their homes. Additionally, improving walking and biking connections between neighborhoods, schools, parks, playgrounds, trails, and natural areas can foster equitable access to recreational opportunities, particularly for children and families. For example, some cities in the U.S., sponsored in part by the CDC, have adopted "Safe Routes to Play" or "Safe Access to Recreational Opportunities" initiatives to incorporate youth engagement and safety in planning for parks, playgrounds, as well as trails and active transportation routes that connect recreational opportunities to schools and residential neighborhoods.[42] CDC has created a Transportation Health Impact Assessment Toolkit for planning and health professionals.[43] Strategies proposed for promoting positive health outcomes include: reducing VMT, expanding public transportation, promoting active transportation, incorporating healthy community

[41] Center for Disease Control and Prevention, *Social Vulnerability Index*.
[42] Institute for Public Health Innovation, *Safe Access to Recreational Opportunities Blueprint*, September 2014.
[43] U.S. Department of Transportation, *Transportation and Health Tool*, October 2015.

design features, improving safety for all users, and ensuring equitable access to transportation networks. AARP has also shown a commitment to livable communities and complete streets, to help senior populations "age in place."

Through the LTA program, CMAP has assisted several communities in the region develop transportation plans that promote non-motorized transportation and integrate Complete Streets policies. These include several Bicycle and Pedestrian Plans (e.g. Arlington Heights, Evanston, Downers Grove), Transportation Master Plans and Access Studies that make recommendations for pedestrian and bicycle infrastructure improvements (e.g. Crystal Lake), as well as the South Council of Mayors/SSMMA Complete Streets and Trails Plan. In collaboration with the Active Transportation Alliance and the National Complete Streets Coalition, CMAP developed a Complete Streets Toolkit to help communities incorporate a Complete Streets approach into local planning, design, and construction processes and documents.[44] CMAP also developed an Aging in Place White Paper that promotes age-friendly strategies to help communities plan for their senior population.[45] CMAP and its partners should continue these and other efforts to help localities enable safe, convenient, and comfortable travel and access for all users, regardless of their age, abilities, or mode of travel.

Health equity requires a focus on engineering and education so that all populations have safe public spaces and travel modes. While police enforcement saves lives, an increase in enforcement may not be appropriate in communities that have experienced poor relations with police. Rather than investing in increased police presence, municipalities should consider automated enforcement, consistent enforcement practices, and/or training of officers in de-escalation and bias to ensure that enforcement is appropriate and safe.

Expand housing choice to improve housing affordability

Housing affordability is an important determinant of health. It allows for better savings and wealth accumulation, which offers residents more resources to access services such as health care and healthy food, as well as reduced stress, a key factor in many chronic health issues.[46] Quality housing mitigates health risks from living in unsanitary housing conditions. As such, expanding housing choice so that all households in the region can find a quality affordable home that fits each household's preferences is key to achieving health equity. One layer of affordable housing that is pertinent to disability community is linking affordable, accessible housing to those who need them. Some housing departments provide this service, as well as organizations like Access Living.[47]

[44] Chicago Metropolitan Agency for Planning, *Complete Streets Toolkit*, March 2015.
[45] Chicago Metropolitan Agency for Planning, *Aging in Place*, June 2016.
[46] Enterprise Community Partners, Inc. and The Center for Housing Policy, *Positive Impacts of Affordable Housing on Health: A Research Summary*, 2007.
[47] Access Living, *Housing*, https://www.accessliving.org/housing

The strategy paper on Expanding Housing Choice outlines strategies that CMAP and its partners can undertake to comprehensively address the barriers to housing choice.[48] As the strategy paper indicates, while CMAP is already working to expand housing choice in the region through *Homes for a Changing Region* and other LTA projects, the broad nature of the challenges require actions from private sector developers, financial institutions, multiple levels of government, individuals, and many others. Undertaking the range of planning, assistance, research, and convening strategies outlined in the paper will lessen those barriers and thereby improve housing affordability, and by extension public health, in the region.

Develop effective municipal rental regulations programs
Rental housing is a large and important component of the region's housing stock, particularly for low-income and minority communities who are less likely to own homes. Municipalities should adopt rental regulations and code enforcement best practices to ensure the provisions of safe and healthy homes for residents. The Regional Housing Solutions tool offers a range of strategies that municipalities can employ to build relationships with landlords and ensure a healthy rental housing stock.[49] Municipalities should develop and enforce landlord registration and licensing requirements, and maintain a rental property information system to score properties by violations. Through the system, municipalities can pursue performance-based rental licensing to require more stringent inspections and fees for negative scoring properties. Municipalities can also develop manuals and educational programs for landlords, or offer incentives for compliance and good property management. Effective rental regulations programs will help mitigate health inequities by helping communities devote resources to worst-performing properties and provide safe housing conditions for non-homeowners.

Update development regulations to guide healthy land use planning and environmental design
Adapting current zoning policies to allow for consideration of public health and health equity will allow municipalities to simultaneously address multiple determinants of health inequities in a cost-effective and sustainable way. Local governments can use health data to create development regulations and siting requirements that promote health in the long-term. For example, restrictions could limit the proximity of industrial and residential areas, or require strong buffering and mitigation. Municipalities could also require that schools are located in safe, walkable places and not on major thoroughfares or truck routes. By incorporating building, environmental, and design standards, such as appropriate lighting, quality open spaces, and guidelines for securing vacant and abandoned buildings, municipalities can prevent crime and increase public safety.

Municipalities could also explore aging friendly and accessible design guidelines and development regulations. For example, permitting accessory dwelling units (self-contained

[48] Chicago Metropolitan Agency for Planning, *Expanding Housing Choice*, May 2017.
[49] Regional Housing Solutions. https://www.regionalhousingsolutions.org/strategy/regulation. RHS was developed in partnership between CMAP, Institute for Housing Studies at DePaul University, the Metropolitan Mayors Caucus, and the Metropolitan Planning Council.

living units adjacent to or within a single-family dwelling) can allow senior populations to age in place. Allowing home accessibility modifications or incorporating ADA standards in development can expand housing choice for disability populations and allow them to live independently. The City of Chicago's HomeMod Program provides accessibility modification services, including ramps, porch and stair lifts, roll-in showers, widenend doorways, accessible sinks and cabinets.[50] Another example is the Village of Bolingbrook Accessibility/Visitability Requirements. Through its building code, the Village has outlined several requirements for new construction to ensure that physically challenged individuals can enter and maneuver in these homes.[51] In addition, municipalities can adapt community-level planning and design guidelines to support aging in place and accessibility. Particularly in lower-density, suburban or rural areas, critical support services like health clinics can be located in close proximity to other community amenities to mitigate mobility challenges for senior or disability populations. CMAP should support local initiatives for healthy development regulations and continue to provide guidance and technical assistance through LTA to help municipalities adopt regulations that advance health equity goals.

Develop a quality of open space standard with particular attention to EDAs

Ensuring that access to quality open spaces is equitable across geography, race, and income is essential to health equity in the region. Parks and green spaces not only contribute to better air quality, reduced urban heat island effect, and more recreational opportunities, they can also enhance placemaking and improve climate resilience, ultimately benefiting both physical and mental well-being of communities. GO TO 2040 recommended increasing park accessibility and CMAP has since developed several indicators to evaluate access to open space in the region. CMAP should continue to refine these metrics when determining areas for priority conservation or investment. CMAP should also pursue opportunities to increase access to quality open space through LTA projects, especially in underserved areas, and by encouraging municipalities to adopt regulations such as minimum open space requirements in new developments. Specifically, it will be important to ensure that strategies address both access and quality of open space in EDAs to insure that residents enjoy the full range of health benefits these places provide.

Invest in vulnerable communities

In the Inclusive Growth strategy paper, CMAP analysis shows that high levels of economic inequality are limiting our region's ability to grow.[52] Inequality unfolds across a number of dimensions, limiting some residents' opportunities to succeed due to the lack of economic opportunity within the communities they live in. Limited opportunity can extend across

[50] City of Chicago, Mayor's Office for People with Disabilities. *Accessible Housing.* https://www.cityofchicago.org/city/en/depts/mopd/provdrs/hous.html.

[51] Metropolitan Planning Council, *Home Grown: Village of Bolingbrook Accessibility/Visitability Requirements.*

[52] Ana Marie Santacreu, "What Causes a Country's Standard of Living to Rise?" Federal Reserve Bank of St. Louis, The Economy Blog (2015). https://www.stlouisfed.org/on-the-economy/2015/december/what-causes-countrys-standard-living-rise.

generations, circumscribing the lifelong earnings and entrepreneurial potential of residents through decreased access to quality education, employment, housing, or transportation choices across the life course, all of which have significant repercussions on public health and health equity. The following strategies focus on ensuring positive health outcomes across socioeconomic factors by promoting more economic opportunity.

Expand high-quality transportation options in excluded communities
Providing transit service that runs frequently, has longer hours of service over night, and connects to major job centers is a key strategy for connecting excluded residents to opportunity. CMAP should evaluate the existing level and quality of transit service -- and how well it supports access to the region's employment centers from EDAs and provide guidance on changes or additions to available transportation resources that would improve mobility options in EDAs, including possible roles for ride sharing companies. Additionally, CMAP should evaluate the job opportunities that are accessible using the existing transit options available during various time periods (i.e., using peak hour service vs. off-peak service).

Equally important, transportation service providers should make ADA a priority when improving transit services. Mitigating mobility barriers for seniors and people with disability is essential for ensuring their access to services, amenities, and recreational activities, combatting social isolation. Service providers should consider public-private partnership opportunities with ridesharing companies like Lyft, and programs to provide volunteer drivers or taxi subsidies for older populations who cannot drive, especially for those who live in communities that are not walkable or well-served by transit. Use of technology is also a great way to improve quality transportation services. For example, developers at Microsoft have been working on an application called "Chi Safe Path" that provides a mapping and routing services for people with disabilities.[53] They are also exploring ways to improve road safety for disability populations using data and new technologies.

CMAP should investigate various funding concepts in an effort to improve mobility for all communities
Financial considerations play a primary role in the choices travelers make, and they can also encourage use of active modes of transportation by rebalancing the cost of driving versus walking, biking, or taking transit. CMAP's Transit Ridership Growth Study found that charging more appropriate fees for parking has a major positive impact on transit and other active modes.[54] Charging more to drive in congested periods ("congestion pricing") also promotes public and non-motorized transportation while reducing emissions, ultimately leading to positive health outcomes stemming from healthier, more active lifestyles and improved air quality. These initiatives may also increase costs, particularly for low-income residents. New fare and congestion pricing initiatives should offer options to reduce the burden on low-income residents. CMAP should encourage regional transportation agencies to investigate various funding concepts in an effort to increase public transit use and promote transit and active

[53] Chi safe path, http://www.chisafepath.com/
[54] Chicago Metropolitan Agency for Planning, *Transit Ridership Growth Study*

transportation. CMAP and partners should also identify options to provide reduced fares and fees for rising transit fares, increased tolls, and other transportation fees, to reduce costs for low income residents.

Reinvest in disinvested areas

Like EDAs, disinvested areas disproportionately likely contain many of the SDOH factors that can hurt health outcomes. Due to the long-term flight of businesses, populations, and investment, disinvested areas have weak commercial and housing markets; aging, constrained, and poorly maintained physical infrastructure; and insufficient community resources and amenities.[55] To address these challenges, and thereby create environments that can help improve health outcomes, CMAP and partners should promote targeted strategies to direct investment to disinvested areas. The strategy paper on Reinvestment and Infill outlines a range of strategies, including regulatory tools to reduce blight and vacancies, align infrastructure investments, and enhance partnerships with the private sector and lending institutions. CMAP is also currently undertaking research to advance spatial understanding of disinvested areas and consider indicators to capture factors that lead to disinvestment. The compound challenges of disinvestment will also require action from developers, land-banks, financial services, multiple levels of government, and many other civic organizations. CMAP should continue to assist municipalities in addressing the unique challenges of disinvested areas and convene multisectoral partnerships, in order to increase local access to economic opportunities as well as quality housing, education, and recreational activities.

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[55] Chicago Metropolitan Agency for Planning, *Reinvestment and Infill Strategy Paper. http://www.cmap.illinois.gov/documents/10180/517111/Reinvestment+and+Infill+Strategy+Paper/f075aca4-49d1-450a-9af5-097bfdb12ac4*

Next steps

The framework in this document sets a direction to advance health equity in ON TO 2050. Because public health and well-being relate to all aspects of planning, this framework presents health equity considerations for planning topics in ON TO 2050. CMAP expects these recommendations to inform not only ON TO 2050, but also technical assistance projects, policy updates, research products, and data sharing. The recommendations of ON TO 2050 will synthesize these health equity strategies into a comprehensive vision for the region.

CMAP cannot achieve health equity alone. Regional partners are critical to the successful implementation of many strategies. This document includes recommendations aimed at partners in local and state governments, non-profits, philanthropy, and the private sector. Further discussions on the most effective way to advance regional collaboration will be essential as the agency develops and then implements ON TO 2050.

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Appendix A: Resource group members

To evaluate the potential for health equity strategies to benefit the Chicago region specifically and to initiate a broader conversation about the best ways to achieve those ends in ON TO 2050, CMAP convened a resource group of subject matter experts. These experts included representatives from regional County and City of Chicago departments, community based organizations, non-profits, public unions, and health and research institutions who met six times in 2017 to help evaluate and give feedback on developing agency thinking on health equity.

Health equity resource group

Adam Becker	Consortium to Lower Obesity in Chicago Children
James Bloyd	Cook County Department of Public Health
Carol Caref	Chicago Teachers Union
Ann Cibulskis	City of Chicago Department of Public Health
Deanna Durica	Cook County Department of Public Health
Jackie Forbes	Kane County Division of Transportation
Chloe Gurin Sands	Metropolitan Planning Council
Sarah Hainds	Chicago Teachers Union
Lilian Jimenez	Cook County Commissioner Jesus "Chuy" Garcia
Tenisha Jones	Greater Auburn Gresham Development Corp
Patrick Lenihan	School of Public Health, University of Illinois Chicago
Jess Lynch	Illinois Public Health Institute
Rob Mapes	AgeOptions
Anne Posner	City of Chicago Department of Public Health
Heather Schady	Active Transportation Alliance
Laura Schneider	Lake County Health Department & Community Health Center
Richard H. Sewell	School of Public Health, University of Illinois Chicago
Raj Shah	Family Medicine and Rush Alzheimer's Disease Center
Will Snyder	Presence Health
Felipe Tendick-Matesanz	Restaurant Opportunities Center United
Carmen Vergara	Esperanza Health Centers

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Appendix B: Acronyms

ADA	American with Disabilities Act
ARC	Atlanta Regional Commission
BRFSS	Behavioral Risk Factor Surveillance System
CDC	Center for Disease Control and Prevention
CMAP	Chicago Metropolitan Agency for Planning
CI2	Community Investment Index
CMAQ	Congestion Mitigation and Air Quality Improvement
DVRPC	Delaware Valley Regional Planning Commission
DRCOG	Denver Regional Council of Governments
EDAs	Economically Disconnected Areas
HIA	Health Impact Assessments
LTA	Local Technical Assistance
MAPC	Metropolitan Area Planning Council
MPO	Metropolitan Planning Organization
MARC	Mid-American Regional Council
NJTPA	North Jersey Transportation Planning Authority
PSRC	Puget Sound Regional Council
SDOH	Social Determinants of Health
SDOHI	Structural Determinants of Health Inequities
USEPA	U.S. Environmental Protection Agency
VMT	Vehicle Miles Traveled
WHO	World Health Organization

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