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HUMAN CAPITAL STRATEGY MEMO

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Introduction

Human capital remains one of the most important determinates -- if not the most important -- of regional economic vitality. Access to talent continues to be a top priority for companies looking to expand, relocate, or reorganize because workers' knowledge and ingenuity will always be the primary source of growth. Metropolitan Chicago is home to a well-educated and diverse workforce of over 5 million workers. Yet, the region struggles to keep pace with the nation overall and peer regions with similar large, complex, and established economies -- like New York, Los Angeles, and Boston.¹ Slowed economic and population growth constrain our widespread prosperity, and current projections show these trends could continue as shifts in industry competition, globalization, and technology challenge all regions. To prosper, the region needs to make strategic investments that will enable it to adapt to rapid changes, sustain a high quality of life, and build on advances in education and workforce development.

The workforce development and community college systems often serve as the primary providers of education, training, and some related social services for working-age individuals. These systems aim to provide individuals with the skills and knowledge needed to succeed in the labor force. As the rate of economic and technological change accelerates, this complex system must contend with emerging trends to create a high-quality labor force. Residents increasingly need to earn additional postsecondary training to enter the workforce and continuously enhance their skills over time. The region's workforce is aging and diversifying, while new analysis shows that high concentrations of economic inequality and inopportunity limit our region's ability to grow.² Education and training providers must become more responsive to the needs and technology of industry, while ensuring all residents have access to training with regional economic value. Prioritizing new models and geographies -- such as sector-based career pathways programs and economically disconnected areas³ -- can help the region to navigate these opportunities and challenges.

Acting on the CMAP Board's guidance for ON TO 2050 -- to refine existing policies, explore limited new policy areas, and develop more specific implementation strategies -- this strategy memo on human capital focuses on major shifts in adult education and training since the GO TO 2040 comprehensive plan was adopted in October 2010. As in the previous plan, ON TO 2050 will emphasize adult education and training but acknowledge the vital role and importance of primary and secondary education quality. CMAP continues to support the work of other organizations striving to improve our region's education system. This memo's policy

¹ CMAP Regional Economic Indicators website, 2017, <http://www.cmap.illinois.gov/economy/regional-economic-indicators/trends>.

² CMAP ON TO 2050 strategy paper, "Inclusive Growth," 2017, <http://www.cmap.illinois.gov/onto2050/strategy-papers/inclusive-growth>.

³ Economically disconnected areas refer to neighborhood tracts that have real median household incomes less than 60 percent of the Chicago regional median by household size, and either high-minority populations or low levels of English proficiency relative to regional averages.

direction will inform how ON TO 2050 can help the Chicago region to improve the efficacy of training and adult education to support the region's economic development goals. This memo is one of three that develop strategies to improve the region's economic resilience; two other memos discuss regional economic development and innovative capacity.

Research and stakeholder engagement

To develop this strategy, CMAP staff reviewed literature, analyzed data, and identified major policy developments and consulted partners at organizations that directly impact regional workforce development goals. These stakeholders included representatives from organizations across county and sub-regional economic development, traditional and technical education, workforce service delivery, community development, education and training funding, and workforce advocacy and research. Stakeholders helped to identify the region's emerging needs for enhancing the competitiveness of the region's workforce, potential opportunities available to residents, and how such needs can best be addressed in long-range planning.

CMAP staff also solicited feedback on the strategy from the agency's working committees, particularly the Economic Development and Human and Community Development working committees. Both the interviews and presentations to the working committees provided feedback on the relationship between improved workforce development and growth in the region's broader economic and innovative capacities. Such feedback helped shape and refine recommendations in this report.

Emerging needs in human capital

Human capital recommendations in GO TO 2040 and CMAP's subsequent analyses -- coordinating workforce and economic development efforts, strengthening the role of workforce intermediaries, improving education quality and access -- aim to improve the competitiveness of the region's workforce. CMAP continues to advocate strongly for these existing recommendations. Since GO TO 2040 was adopted, opportunities and challenges have continued to emerge for the regional workforce development system. Key technological advances and demographic trends are shifting the demands placed on the Chicago region's adult education and training programs. Moving forward, workers will face additional training and education requirements to compete in the job market. Addressing the indirect obstacles to residents' long-term employability will require the workforce development system to become more responsive and employers more engaged in addressing the evolving needs of both industry and workers. New strategies for greater coordination and planning may be necessary to ensure all residents have access to affordable, high-quality postsecondary education and skills training throughout their careers.

Changing nature of work

A growing body of research examining the potential effects of currently available technologies has begun to shed light on how advancements may change employment, demand for skills, and economic stratification. This research indicates that such changes are occurring at an accelerated

Closer look: Technology in the workplace

The scope of what technology can do continues to expand, building on advances in artificial intelligence, machine learning, advanced materials, and the automation and digitalization of services.⁴ A significant share of tasks -- across almost every occupation and skill level -- already has the potential to be undertaken by existing technologies.⁵ However, current research estimates that technological advancements will replace relatively few jobs entirely, as many workers in occupations vulnerable to automation perform a variety of other interactive tasks that remain difficult to computerize.⁶ Instead, advancements could augment jobs where workers use judgement, problem-solving, and other skills in unpredictable or creative environments.

Managerial decision-making may increasingly use big data and sub-fields of artificial intelligence. Many jobs will likely refocus on non-routine, interactive tasks that are less susceptible to computerization, leveraging intuition and caring tasks that require social aptitude and adaptability. For example, real-time information about individuals' needs would enhance teaching, elder and healthcare, hospitality, and creative industries.

scale, scope, and speed from previous economic transformations.⁷ This acceleration could make it increasingly difficult for workers to acquire the education and new skills to adapt to a more competitive labor market.⁸ While conclusions vary widely, research generally indicates that computer-driven technologies will transform the future of work in sectors ranging from retail and warehousing to finance and healthcare. Most occupations, at all skill levels, should anticipate widespread changes as technology augments work, altering how workers use their time and conduct tasks.⁹

As new technologies find applications throughout the economy, workers will need to interact more adeptly and collaboratively with technology to accomplish a wide range of problem-solving, creative, or non-computerized tasks.¹⁰ Workers will continue to need higher levels of literacy and numeracy, as well as the ability to anticipate, identify, and solve problems. Oral and written communication skills and the ability to work in teams will also have increased importance.¹¹ With technical competency as a basic requirement for most occupations, workers will require a broad range of improved professional skills.

⁴ Erik Brynjolfsson and Andrew McAfee, *Race against the machine: How the digital revolution is accelerating innovation, driving productivity, and irreversibly transforming employment and the economy*, (Brynjolfsson and McAfee, 2012).

⁵ James Manyika, Michael Chui, Mehdi Miremadi, Jacques Bughin, Katy George, Paul Willmott, and Martin Dewhurst, *A future that works: automation, employment, and productivity*, (McKinsey Global Institute, 2017).

⁶ Melanie Arntz, Terry Gregory, and Ulrich Zierahn, "The risk of automation for jobs in OECD countries: A comparative analysis." *OECD Social, Employment, and Migration Working Papers* 189 (2016).

⁷ Manyika et al. *A future that works*.

⁸ Carl Benedikt Frey and Michael A. Osborne. "The future of employment: how susceptible are jobs to computerisation?" *Technological Forecasting and Social Change* 114 (2017): 254-280.

⁹ Era Dabla-Norris, Si Guo, Vikram Haksar, Minsuk Kim, Kalpana Kochhar, Kevin Wiseman, and Aleksandra Zdzienicka, *The new normal: A sector-level perspective on productivity trends in advanced economies*, (International Monetary Fund, 2015).

¹⁰ Frey et al. "The future of employment."

¹¹ World Economic Forum. "Skills Stability" *The Future of Jobs: Employment, Skills and Workforce Strategies for the Fourth Industrial Revolution*. January 2016.



This trend is already happening: nearly all job growth since 1980 has occurred in occupations with relatively high requirements for social skills -- e.g., flexibility, judgment, social intelligence, and teamwork.¹²

The evolving technology and needs of employers has led to shifts in how individuals relate to the labor market. With a standardization of skills in some sectors like manufacturing and healthcare, employers increasingly expect to hire new workers with the skills they require, rather than invest in extensive education and training. National research has found an existing decline in the percent of workers receiving employer-sponsored or on-the-job training.¹³ Moreover, average U.S. annual wages for those with a high school diploma have not seen growth since 1970.¹⁴ Workers must now seek out and pay for more postsecondary training before entering the workforce.

Individuals tend to move jobs frequently and change occupations over the course of their careers. These trends present particularly acute challenges for residents in the region's economically disconnected areas (EDAs). For many low-income and entry-level workers, these trends can result in a cycle of temporary or contract work without the job security or training to pursue better opportunities. With the cost burden of postsecondary training shifted further onto individuals and households, workers must guide their own preparation for workforce readiness -- that is, how they plan to pursue, progress through, and complete the education and training required to attain relevant skills. With more job-to-job moves, physically accessing jobs can prove challenging. Yet, minority residents, particularly African Americans and workers in EDAs, have longer commute times in the Chicago region.¹⁵ Commute options will remain a key issue for low- and moderate-income workers, many of whom must own cars or take long, circuitous transit routes to reach employment and education opportunities. Priority should be given to transportation and land use decisions that better support such connections.

Shifting demands on adult education and training systems

The region's educational and workforce development systems help bridge the gaps between adults seeking to build a career and employers looking to build their workforce. The region's community colleges provide residents with access to both occupational education and college transfer programs, as well as non-degree programs like continuing and adult education. The

¹² David J. Deming, *The growing importance of social skills in the labor market*. No. w21473. (National Bureau of Economic Research, 2015).

¹³ Council of Economic Advisers. *Economic Report of the President*, 2015. http://www.nber.org/links/cea_2015_erp.pdf.

¹⁴ R. Abel Jaison and Richard Dietz, "Do the benefits of college still outweigh the costs?" *Current Issues in Economics and Finance* 20:3 (Federal Reserve Bank of New York, 2014).

¹⁵ CMAP ON TO 2050 snapshot, "Travel Trends: Understanding how our region moves," 2017, <http://www.cmap.illinois.gov/onto2050/snapshot-reports/transportation-network/travel-trends>. See also: Christopher Ingraham, "The astonishing human potential wasted on commutes," *Washington Post*, February 25, 2016, <https://www.washingtonpost.com/news/wonk/wp/2016/02/25/how-much-of-your-life-youre-wasting-on-your-commute/>.

workforce development system consists of an array of mostly federally funded training providers, including public, non-profit, and for-profit programs. These institutions may also provide job-placement assistance, apprenticeships, and related support services like transportation or childcare. Stakeholder interviews underscored the challenge for these complex systems to become more nimble and responsive to accelerating change in the needs of both employers and workers. Since GO TO 2040, the region's education and training programs have utilized best practices and federal legislative reform to address the substantial needs among the low- and middle-skilled workers. Still, persistent administrative challenges and constrained public resources undermine the resilience of these systems.

As technology augments work, higher levels of postsecondary training -- as well as additional training throughout a career -- have become necessary to compete for available job openings. The demand for more education is already evident in the rising number of degrees conferred by postsecondary institutions in the U.S. All levels of degree and all race/ethnicity groups have seen significant increases in educational attainment, with the highest growth in sub-baccalaureate certifications and Associate's degrees. For example, the number of Associate's degrees conferred nationwide to Black and Hispanic students increased by 79.6 percent and 136.9 percent respectively between the 2002-03 and 2012-13 academic years.¹⁶ Despite this progress, significant gaps in educational attainment persist across demographic groups.¹⁷ Moreover, metropolitan Chicago had nearly 150,000 young adults between 16-24 years (12.1 percent) disconnected from both work and school in 2015, including 22.9 percent of young black residents ages 16-24.¹⁸ Many of these "opportunity youth" have a high school diploma but require substantial remedial education for literacy, numeracy, and computer skills.

Although increasingly available, not all sub-baccalaureate programs -- including short-term credential, licensure, and certification programs -- are uniformly valuable for workers or employers.¹⁹ Stakeholders expressed a growing recognition in the Chicago region of the full breadth of training, in-demand skills, and meaningful work experience required to build long-term employability. These sub-baccalaureate programs can play an important role in connecting residents to pathways for upward mobility. However, their topics and structures may need to

¹⁶ Lauren Musu-Gillette, Jennifer Robinson, Joel McFarland, Angelina Kewal Ramani, Anlan Zhang, and Sidney Wilkinson-Flicker, *Status and Trends in the Education of Racial and Ethnic Groups 2016*, NCES 2016-007 (National Center for Education Statistics, 2016).

¹⁷ CMAP ON TO 2050 strategy paper, "Inclusive Growth," 2017, <http://www.cmap.illinois.gov/onto2050/strategy-papers/inclusive-growth>.

¹⁸ Sarah Burd-Sharps, Kristen Lewis, Rupsha Basu, Rebecca Gluskin, Laura Laderman, and Marina Recio, *Promising Gains, Persistent Gaps: Youth Disconnection in America*. (Measure of America of the Social Science Research Council, 2017), <http://www.measureofamerica.org/youth-disconnection-2017/>.

¹⁹ Veronica Minaya and Judith Scott-Clayton, "Labor Market Trajectories for Community College Graduates: New Evidence Spanning the Great Recession. A CAPSEE Working Paper," (Center for Analysis of Postsecondary Education and Employment, 2017).



be further rationalized or enhanced based on a strong understanding of the needs of growing industries. Many education and training providers are already adjusting their policies and curricula to reflect best practices for such programs. CMAP and partners should continue to support strategies for coordinating regional workforce and economic development goals.

In many ways, the Chicago region has been a national leader in the implementation of recent legislative reform to the public workforce system. Federal legislation enacted in 2014 with bipartisan support, the Workforce Innovation and Opportunity Act (WIOA), requires workforce boards to conduct state-level and regional strategic planning, as well as to strengthen and expand partnerships with the private sector. The law emphasized the central role that data collection and reporting play in unified planning and partnership development.²⁰ Such tools are especially important given a renewed national focus on serving populations with barriers to accessing or sustaining employment. Metropolitan Chicago can build off of related local and state efforts to further improve regional planning and integrated data systems. Ongoing implementation of WIOA may also provide a setting in which new practices can be tested and scaled based on demand-driven strategies that leverage industry engagement to guide regional workforce development.

The regional education and workforce systems have built a range of programs aimed at improving access to adult education and training opportunities. Community colleges around the state have taken steps to increase enrollment in career training across district boundaries and reduce unnecessary duplication. In response to limited public funding, all 39 of Illinois' community college districts recently signed on to participate in the Comprehensive Agreement Regarding the Expansion of Educational Resources (CAREER Agreement). The agreement allows students to enroll in career and technical education programs offered at any other Illinois community college if the program is not offered in their home district, while paying in-district resident tuition and fee rates. This cooperation offers a prime example of strategies to improve the efficiency and responsiveness of the community college system to shifting education and employment trends.

The State has also made progress in articulating career pathways programs. These programs provide postsecondary education and training as a series of manageable steps leading to industry-recognized credentials in growing occupations. This model can drive higher success rates among participants and helps workforce partners enhance the delivery of career counseling, job-placement assistance, and support services. Along with nine other states, Illinois participates in the Center for Law and Social Policy's Alliance for Quality Career Pathways to develop a consensus framework with criteria and indicators to help improve, scale, and sustain a regional career pathways system. Community colleges have also partnered with area

²⁰ David Bradley, *The workforce Innovation and Opportunity Act and the One-Stop Delivery System*, Congressional Research Service Reports No. R44252 (Congressional Research Service, 2015).

employers to develop some apprenticeship programs and related curricula. Apprenticeships have been more common in the trades, however, insurance and financial firms have recently developed programs.²¹ These programs enable students apply academic learning, earn some income while studying, and potentially enter a career tract.

Looking beyond immediate employment needs, the education and workforce development systems have begun to more directly target occupations that provide opportunities for advancement and offer better pay in industries with the potential to grow. Inclusive growth will be a critical recommendation in ON TO 2050, and this increased focus provides CMAP and partners additional opportunities to leverage each other's work. Stakeholder interviews revealed an increasing emphasis within the workforce development system on connecting individuals to jobs with pathways for growth in skills and compensation. This shift reflects the concern that accelerated technological change and other macro issues could exacerbate existing trends towards labor market polarization -- with employment growth occurring primarily in high-income and low-income occupations, accompanied by an erosion of those in the middle. The profile of a middle-income job -- traditionally in middle-skill construction, production, or clerical roles -- is shifting towards occupations that require more training. Research has shown that the distribution of jobs by skill level has shifted since 1980 as the number of jobs requiring medium levels of skill has shrunk and that such polarization has intensified since the 1990s.²² The 2001 and 2007-09 recessions in particular drove economic stratification via the relative loss of middle-skill, middle-income jobs, when the economy failed to recover such jobs in the following expansions.²³

As new technologies increasingly refocus jobs towards non-routine and cognitive tasks, jobs may be increasingly either low-skill (e.g., personal services or food production) or high-skill (management and professional occupations) with a widening pay gap in-between.²⁴ Due to several long-running structural changes in the economy, real median household income has declined nationally, down by 4.5 percent in the Chicago metropolitan area between 1989-2015.²⁵ Given existing disparities in employment and income outcomes for the region's economically

²¹ Stephanie Jones, "Illinois' Harper College to Host Zurich's Apprenticeship Program," *Insurance Journal*, June 18, 2015.

²² David Autor and David Dorn, "The growth of low-skill service jobs and the polarization of the U.S. labor market," *The American Economic Review* 103, no. 5 (2013): 1553-1597.

²³ A. Cheremukhin, "Middle-skill jobs lost in US labor market polarization." See also Nir Jaimovich and Henry E. Siu. *The trend is the cycle: Job polarization and jobless recoveries*, No. 18334 (National Bureau of Economic Research, 2012).

²⁴ Maximiliano Dvorkin and Hannah Shell, "Labor market polarization: How does the district compare with the nation?" *The Regional Economist* 2 (The Federal Reserve Bank of St. Louis, 2017).

²⁵ CMAP Regional Economic Indicators website, 2017, <http://www.cmap.illinois.gov/economy/regional-economic-indicators/trends/trends>.

disconnected areas, local education and training systems will remain critical to helping workers attain sufficient skills training to secure middle-income, higher-skilled opportunities.

Deepening need for inclusive strategies that catalyze growth

Metropolitan Chicago is home to an estimated 5.6 million working-age residents whose backgrounds and needs are diverse and whose contributions are essential to the region's economic prosperity. The Chicago region's population growth has slowed recently, gaining just 1.1 percent since 2010 and reflecting the region's slower economic growth compared to the nation and our peers.²⁶ Accordingly, the metropolitan labor force -- those that are 16 years or older and either working or actively seeking work -- declined by approximately 65,000 workers between 2008 and 2015.²⁷ Further trends in age, diversity, and labor force participation have significant implications for planning at both the regional and local levels.

The regional workforce is aging rapidly as people continue to live longer, delay or reduce childbearing, and retire later in life. Today, residents who are 55 and older make up more than a quarter of the population and growth in these age groups is increasing nationwide (Figure 1). Recent Census data points to a simultaneous decline in the population share of children (19 years and under) as millennial residents age into older age groups. An aging population will affect the region's productivity. Some industries like healthcare may experience increased demand, while others experience shrinking pipelines of workers with specialized skills and knowledge. This problem is not isolated to manufacturing, but will be felt throughout the region's economy. For example, within the information technology sector, many large and established companies that still own and service legacy mainframe computers -- such as airlines and financial transaction processors -- can expect to replace 20 percent of trained mainframe developers over the next 5 years.²⁸

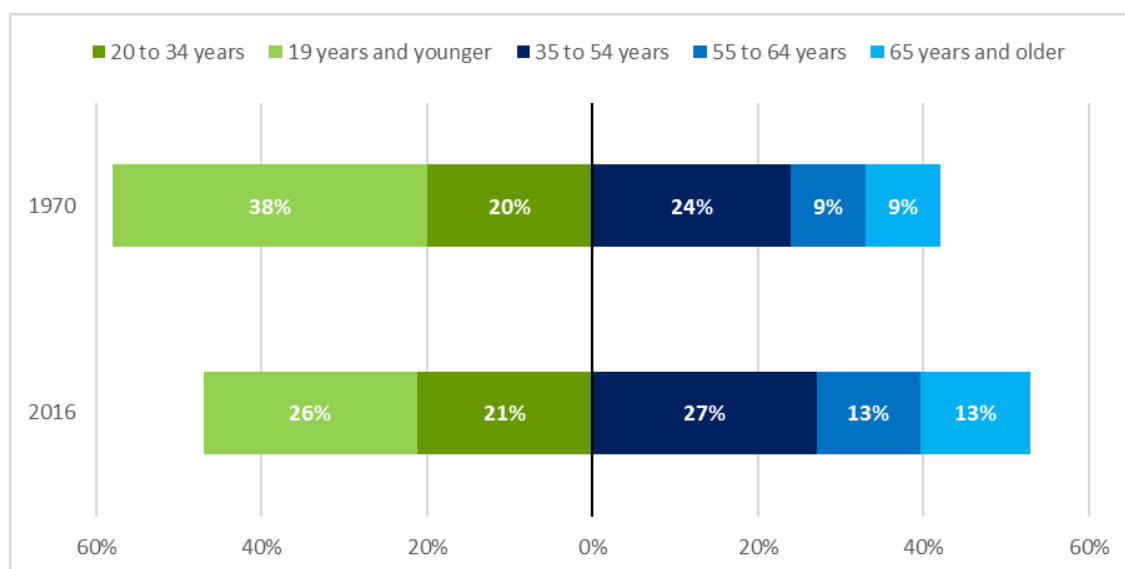
²⁶ CMAP ON TO 2050 snapshot, "Population change in the CMAP region," 2016, http://www.cmap.illinois.gov/about/updates/policy/-/asset_publisher/U9jFxa68cnNA/content/population-change-in-the-cmap-region.

²⁷ CMAP analysis of American Community Survey data, 1-year estimates in 2005-2015 for the Chicago-Naperville-Elgin metropolitan area.

²⁸ SHARE and International Business Machines Corporation (IBM), "The pieces are falling into place: mainframe clients find help from IBM and others to mitigate the effects of a skills shortage," *IBM Systems Magazine* (2015).



Figure 1. Aging in the CMAP region, 1970-2016



Source: Chicago Metropolitan Agency for Planning analysis of U.S. Decennial Census data 1970 and Population Estimates Program data 2016.

Emerging research highlights the negative influence that persistent economic disparities among residents exert on regional economic growth. Ongoing shifts in the region’s racial and ethnic mix will effect human capital development needs and future economic growth in the region. CMAP projects that metropolitan Chicago’s increasing racial and ethnic diversity will continue through 2050 -- a trend that is related to changes in economic opportunity. The proportion of persons of color increased from 34 percent of the region’s population to 49 percent between 1990-2016. The shift is due primarily from growth in the Hispanic population prior to the recession, and accelerating growth in the Asian population since the recession.²⁹ Current forecasts for 2050 show a continued decline in the white, non-Hispanic share of the population, with a corresponding increase in the Hispanic and Asian shares. Demographic trends are both a condition and a consequence of economic prosperity as residents choose where to live based on their perceptions of quality of life and economic opportunity. For example, among its peer regions, only metropolitan Chicago has seen declining African American populations due in large part to the impact of economic and racial inequalities.

Many residents in the Chicago region experience persistent disparities in employment, educational attainment, and household income based on race and ethnicity (Figure 4), hindering the region’s ability to realize its residents’ full potential and productivity. Black and Hispanic residents have lower educational attainment rates and median household income rates than the regional averages. ACS data for the 2001-14 period revealed that unemployment rates for black residents were nearly double that of the region’s white residents.

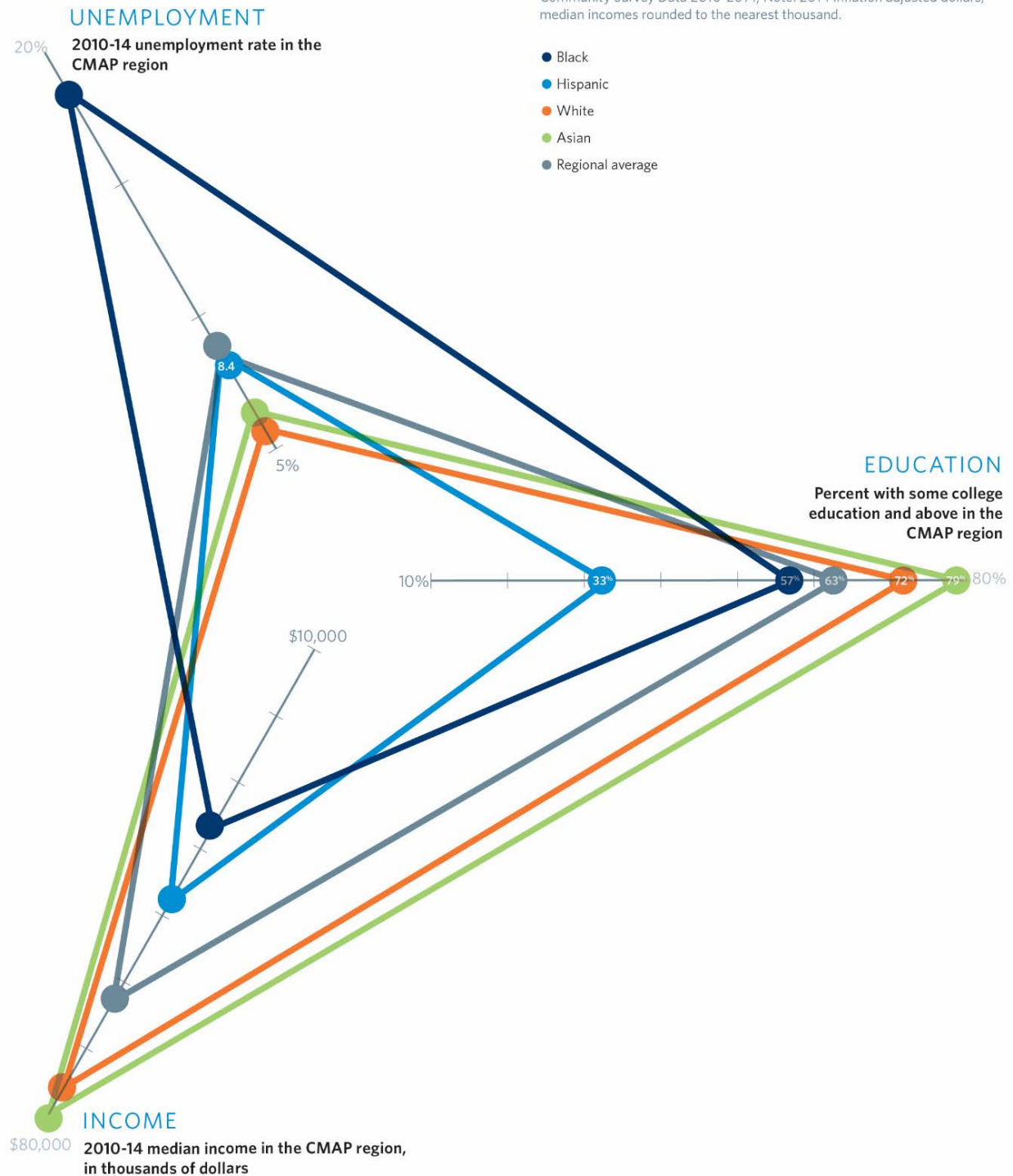
²⁹ Chicago Metropolitan Agency for Planning analysis of U.S. Decennial Census data, 1990, and Population Estimates Program data, 2016.

Figure 2. Disparate outcomes by race and ethnicity

Disparate outcomes by race/ethnicity in the Chicago region, 2010-14

Note: Unemployment is for population 16 and above. The Bureau of Labor Statistics provides regional unemployment rates used in other CMAP products. Census unemployment is behind current rates, but is the most appropriate source to analyze unemployment by race.

Source: Chicago Metropolitan Agency for Planning analysis of American Community Survey Data 2010-2014; Note: 2014 inflation adjusted dollars; median incomes rounded to the nearest thousand.



Moreover, labor force participation rates among black residents between 2005-15 were on average a full five percentage points below any other group.³⁰ Given the regional trend of increasing diversification, these disparate outcomes have serious implications for regional and sub-regional planning.³¹ As the population changes, older and more diverse population groups may hold varying preferences and face different challenges in housing, transportation, employment opportunities, and other factors that impact quality of life.

The region's primary asset, its human capital, is being diminished when residents cannot fully contribute to and benefit from the regional economy. The disparities in educational and economic outcomes across the region's diverse residents undermines the economic growth and resilience of metropolitan Chicago in the face of economic shocks. Between 2006 and 2010, income inequality was one of the most effective ways of predicting a county's risk of entering into recession.³² A growing body of research emphasizes the connection between inclusion and economic growth. Research from the Cleveland Federal Reserve on growth factors for 118 U.S. regions showed that racial and ethnic diversity, openness to immigrants, low rates of racial segregation, and low levels of income stratification strongly contribute to regional growth in employment and output.³³

If metropolitan Chicago remains less attractive to workers and families relative to our peers, lackluster population growth could burden the economy with a narrower tax base, fewer job opportunities, and a smaller labor pool. Strengthening the region's economic competitiveness will require developing inclusive strategies to leverage its full human capital and catalyze economic growth. Key among these strategies are ensuring that low-income and minority populations have better access to opportunities.³⁴ The benefits could foster longer and more robust periods of growth for the overall economy. Likewise, supporting the region's traded clusters – the industries that connect the region to the global economy -- could decrease inequality by raising the demand for labor,³⁵ increase the effects of policies aimed to spread

³⁰ Chicago Metropolitan Agency for Planning analysis of American Community Survey data, 2005-15.

³¹ CMAP ON TO 2050 strategy paper, "Inclusive Growth," 2017, <http://www.cmap.illinois.gov/onto2050/strategy-papers/inclusive-growth>.

³² Paul Lewin, Philip Watson, and Anna Brown, "Surviving the Great Recession: the influence of income inequality in US urban counties," *Regional Studies* (2017): 1-13.

³³ Randall Eberts, George Erickcek, and Jack Kleinhenz, "Dashboard Indicators for the Northeast Ohio Economy: Prepared for the Fund for Our Economic Future," Federal Reserve Bank of Cleveland Working Paper (2006):20.

³⁴ Christ Benner and Manuel Pastor. *Equity, Growth, and Community: What the Nation Can Learn from America's Metro Areas*. (California: University of California Press, 2015) DOI: <http://dx.doi.org/10.1525/luminos.6>.

³⁵ Manuel Pastor, Peter Dreier, Eugene Grigsby III, and Marta López-Garza, "Growing Together: Linking Regional and Community Development in a Changing Economy," Shelterforce (1998): 2.

opportunity,³⁶ and offer pathways to upward mobility. Such cooperative measures will help to create strong economic growth that creates opportunities accessible to all residents and ultimately attracts population growth.

Strategies for ON TO 2050 and beyond

ON TO 2050 will provide policy and technical guidance on future CMAP work, with a focus on the core agency responsibilities of transportation and land use planning. The following section outlines strategies that CMAP and its partners can undertake to better realize the full potential of the region's human capital. Regional workforce development consists of a broad range of strategies to develop talent and skills, connect employers and workers, and facilitate economic mobility -- each tailored to specific labor market needs. In light of the highly competitive and rapidly changing global economy, it is vital that training and skills programs are deployed and well-integrated with related programs and initiatives. These Human Capital strategies are assumed to focus on opportunities within traded clusters, to prioritize efforts and promote regional economic growth that can create additional opportunities for inclusive growth.

Recommended actions focus on continued coordination and rationalization of workforce development programs, as well as opportunities to incorporate sector-based strategies into sub-regional planning. Achieving regional human capital goals will require a variety of institutions, programs, and services. While this strategy paper includes a number of ongoing reforms and programs, advancing some strategies will require entities other than CMAP to take the lead.

Multiple ON TO 2050 projects articulate recommendations that could improve equitable access to employment opportunity, adult education and training, and workforce development services. Complementary strategy papers address topics such as the regional economy, inclusive growth, housing choice, infill development, municipal capacity, and transportation.³⁷

Pursue a regional approach to workforce development focused on traded clusters

The Chicago region's employment and training goals depend on broadly growing the regional economy. At the same time, increasing foreign competition indicates that future economic growth will primarily occur in specialized industry clusters equipped to compete globally.³⁸ The Chicago region maintains a highly diversified economy with significant relative concentrations

³⁶ Raj Chetty, David Grusky, Maximillian Hell, Nathaniel Hendren, Robert Manduca, and Jimmy Narang, "The Fading American Dream: Trends in Absolute Income Mobility Since 1940 (Non-Technical Summary)" (2016) http://www.equality-of-opportunity.org/assets/documents/abs_mobility_summary.pdf.

³⁷ See CMAP ON TO 2050 Strategy Papers: <http://www.cmap.illinois.gov/onto2050/strategy-papers>.

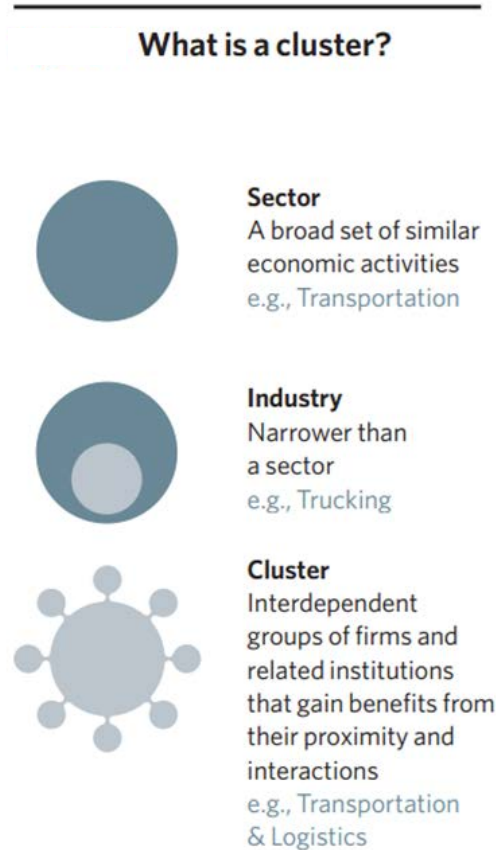
³⁸ Michael E Porter. "Location, competition, and economic development: Local clusters in a global economy." *Economic development quarterly* 14, no. 1 (2000): 15-34.

among its industry clusters, particularly those selling products and services in markets outside of the region. Such traded industry clusters have an outsized potential to grow the region’s economy, pay higher wages than their local-serving counterparts, and supply employees with opportunities for career advancement.³⁹ Economic and workforce development efforts achieve the most when county workforce boards, employers, trainers, service providers and economic development agencies work together across jurisdictional borders. As outlined in GO TO 2040, a regional approach to improve coordination with economic development strategies, focusing on the region’s traded clusters and certain local clusters that are poised for growth and offer pathways for upward mobility, is necessary to help create more employment and training opportunities for the region’s workers.⁴⁰

CMAP and partners should support regional workforce strategies by convening coalitions or developing apprenticeships around traded industry clusters, such as the Chicago Metro Metals Consortium or the recently established Chicagoland Food and Beverage Network. Meeting the clusters’ skilled workforce needs requires coordinated training programs informed by or in close collaboration with industry. A number of national and local models demonstrate such partnerships between industry and educators and training providers. Demand-driven approaches are a core component of WIOA. CMAP in particular should provide data that can improve the region’s understanding of the major job market dynamics and growing traded and some local clusters in the region. CMAP research could include occupation trends, industry shifts, commute time and mode, and training requirements.

Incorporate job market opportunities and trends into sub-regional planning

The benefits and burdens of major shifts in the region’s human capital will affect communities in different ways based on their ability to foresee and respond to evolving workforce needs. Negative effects often accrue to places with limited adult education and training opportunities



³⁹ CMAP ON TO 2050 snapshot, “Regional Economy and Clusters: Building on Our Strengths,” 2017, <http://www.cmap.illinois.gov/onto2050/snapshot-reports/economic-clusters>.

⁴⁰ CMAP report, “Reorienting State and Regional Economic Development: Challenges and Opportunities for Metropolitan Chicago,” 2014, <http://www.cmap.illinois.gov/economy/innovation/economic-development/>.

or other connections to an increasingly competitive economy. Stakeholders consistently call for human capital considerations to figure prominently in regional and sub-regional planning. Human capital should be understood as an essential component to any growth goals, and planning for land use, transportation, and economic development should adequately address related issues. Yet, communities vary widely in their knowledge of major job centers within a reasonable commuting distance, industry and occupation trends, local job market changes, and the employment outcomes of local training programs. Communities can also vary widely in the knowledge, staff capacity, and technical expertise required to plan for human capital.

Through the Local Technical Assistance program, CMAP should explore strategies to better incorporate human capital development in local and sub-regional planning. Such planning should recognize and leverage economic assets that often extend across jurisdictional boundaries, such as skilled labor pools or traded industry clusters. For example, local and sub-regional plans could build off of the region's Workforce Investment Boards' (WIBs) strategic and operational planning already mandated by WIOA. These plans assess trends in the area's leading and emerging industries, employment and unemployment data, labor markets trends, and the workforce's educational and skill levels.

WIB plans drive workforce development investment decisions. Where relevant, the LTA program could strengthen local planning efforts by incorporating the findings and recommendations into local and sub-regional plans or identifying other opportunities for coordination. However, unique job market opportunities and trends extend well-beyond the public workforce development system, requiring collaboration with other place-based education and training partners. These efforts should continue to prioritize new tools and approaches that address the barriers to economic mobility in disinvested and economically disconnected areas and emphasize coordination with neighboring communities and key stakeholders in the workforce and training spheres. However, expanding incorporation of workforce development within the LTA program may require CMAP to secure additional revenue sources, including philanthropic and public grants.

The agency should also further enhance its data and research products to incorporate regional workforce development priorities. For example, future CMAP drill-down reports could analyze major industry and workforce patterns in economically significant sub-regions and how outcomes vary within economically disconnected areas. Likewise, ON TO 2050 strategies will be catered to local partners through a series of "layers" that support spatially specific recommendations. CMAP has therefore mapped traded industry job centers across the region to identify concentrated areas of employment in traded goods-producing and traded service clusters. This geospatial analysis can support local workforce strategies that reflect unique needs throughout the region and long-term collaboration among communities with common labor market conditions.



Prioritize industries and occupations that offer pathways for upward mobility

As training and skills requirements continue to shift, a growing share of low-income and entry-level workers may face challenges in accessing education and training necessary for remaining in the workforce. Even for those with industry-recognized credentials, some jobs provide better opportunities for career advancement and upward mobility. Meeting regional goals in both economic growth and equity will require a prioritized focus on those opportunities that offer residents better pathways for upward mobility. This recommendation is also a core component of CMAP's Inclusive Growth work and related analysis of economically disconnected areas.

Where appropriate, educational institutions and training providers, as well as funders, should invest in continued development and implementation of sector-based career pathways programs. These programs structure stackable credentials, work-based learning and apprenticeships, and support services to guide participants' efficient completion of credentials with regional economic value. Well-articulated guidance on pursuing these education and employment opportunities is then communicated to individuals and households through multiple workforce channels. These efforts should focus in particular on occupations and industries which may offer stronger opportunities for economic advancement and connecting them to residents in economically disconnected areas. The model can be embedded in sector-based economic development strategies with strong industry input. This helps ensure that partners in the adult education and training system provide relevant programs, in-demand skills, and connections with specific job opportunities. The state and region have made strides to articulate pathways based on rigorous market analysis. However, the work to ensure an effective career pathways system is ongoing and requires mechanisms to aggregate conclusions and adapt programs according to local needs or the capacity of partners.

Where appropriate, CMAP should identify opportunities to support the expansion of career pathways programs, such as prioritizing connections between economically disconnected areas and adult education and training programs. CMAP should continue to analyze economic outcomes for workers in traded industry clusters across demographic groups and communities in the region. Implementation indicators for ON TO 2050 should also track this information in order to help gauge the region's progress on inclusive growth.

Link economically disconnected areas to jobs, training, and education

Minority residents, particularly African Americans, have longer commute times in the Chicago region.⁴¹ This trend illustrates the relative challenge of accessing existing job and training resources in the region, as well as another drag on the productivity of human capital in economically disconnected areas. For workers to advance economically, these areas need access to high-quality transportation options that reliably connect them to opportunities for economic

⁴¹ CMAP ON TO 2050 snapshot, "Travel Trends: Understanding how our region moves," 2017, <http://www.cmap.illinois.gov/onto2050/snapshot-reports/transportation-network/travel-trends>.



mobility. For many, improved connections include ready access to career pathways, including adult education and training programs and the available, attainable jobs to follow. Some trends undermine this goal, such as job growth primarily at the urban edge and the movement of some forms of employment to areas with limited transit access.⁴² Transportation and land use partners should prioritize strategies that connect all residents and particularly those in economically disconnected areas with high-quality education and employment opportunity.

CMAP should take a leadership role in articulating the individual and regional growth benefits of making such connections. Related research should identify job centers -- particularly for traded clusters -- and work to determine their potential contributions to economic mobility. Improved understanding of the commute options to job centers -- in terms of travel mode, time, and reliability -- could help to inform continued enhancements to the transit and transportation systems. CMAP and partners should create guidance for pursuing related local strategies in zoning, development, and transportation funding. In programming decisions, CMAP should identify additional criteria that rates investments based on their anticipated benefit to EDAs.

Improve workforce and educational data systems

In a more competitive economy, capturing opportunities for regional economic growth requires well-informed analysis, diligent forecasting, and timely response to shifts in the labor market. In a broad universe of education and workforce development programs, demand-driven strategies depend on having the systems in place to evaluate the economic outcomes of participants and assess diverse program elements. On a programmatic scale, educators and training providers often lack the ability to gauge the efficacy or long-term value of their programs because of data gaps on education and employment outcomes. On a regional scale, workforce funders often lack necessary information to align the program elements and underutilized capacity of existing programs. Numerous state and local systems capture data consistent with reporting requirements under WIOA. However, these data systems remain disconnected, inconsistent across service providers, and incomplete, often lacking sufficient information to coordinate regional systems. For example, stakeholders describe particular difficulty maintaining adequate data on sub-baccalaureate credential and adult basic education programs -- a substantial and growing share of enrollment at the region's community colleges.

Metropolitan Chicago should build on lessons learned from the development of the Illinois Longitudinal Data System and Chicago Cook Workforce Partnership's Career Connect. Both systems aim to integrate information across numerous programs to improve services for job seekers, employers, and public and private workforce funders. By connecting existing datasets, educators and training providers would enhance their ability to adjust programming and curricula based on the economic outcomes of participants. Additional metrics that link

⁴² Elizabeth Kneebone and Natalie Holmes, "The growing distance between people and jobs in metropolitan America," *Brookings Institution* (2015), <https://www.brookings.edu/research/the-growing-distance-between-people-and-jobs-in-metropolitan-america/>.

programs to business performance could track such indicators as time to job placement, speed to job promotion, continued employment, income levels, the cost of program recruitment and training, or employer productivity and quality outcomes. These metrics would help to show potential employers and trainees alike that their investment in time and effort will pay off with personal and financial well-being. Likewise, improved information and data systems would support efforts to better connect regional economic development priorities, sector-based strategies, and the capacity of programs. Improvements could bolster the resilience and responsiveness of the education and workforce development systems. The region should identify appropriate opportunities to address gaps, scale up, and leverage data to inform decision-making. Robust, comprehensive sources of data and improved evidence on workforce development programs would enable policymakers to make necessary reforms and investments to offerings that provide pathways to upward mobility.

Enhance coordination between industry and the workforce development system

For many workers in the Chicago region, an accelerating pace of change could mean higher training requirements for fewer middle-skill, middle-wage jobs in occupations dramatically different from those of the past. A high quality talent pool will remain an essential regional asset for retaining and attracting economic growth. To meet these needs, educational and training providers will need to develop better means for sharing information and collaborating with industry regarding both what the labor supply currently offers and where the labor supply can be enhanced. Broad, meaningful industry engagement helps to provide the workforce development system with real-time signals on employers' needs and training opportunities. In turn, education and training programs can better prepare participants to solve problems adeptly, adapt to new technologies, and operate in the evolving contexts that employers face.

Educators, workforce development providers, and industry should develop strategies to enhance coordination. Efforts to partner with industries and design effective solutions could take numerous forms. For example, cluster initiatives that integrate workforce and economic development strategies can focus attention on the needs of multiple employers via cluster-specific action. Regional examples to build on include the Chicago Metro Metals Consortium and recently established Chicagoland Food and Beverage Network. Effective partnerships can inform education and training providers, identify or better articulate pathways for career development, and build recruitment pipelines for employers. Enhanced coordination can also ensure that workforce partners provide in-demand skills, and where appropriate, adopt industry-recognized credentials and certifications that provide a clear signal that their students and trainees are work-ready.

The region's Workforce Investment Boards (WIBs) have set national best practices and can be key implementers for engaging industries. With the implementation of WIOA, employers have multiple specific ways to participate in workforce investments. These include sharing information with American Job Centers regarding job postings and leads, working with education and training providers to identify needed skill competencies and qualifications, and retaining job seekers in employment by articulating career pathways.



Enhance coordination among community colleges

Today's economy is increasingly driven by economic connections and information sharing, requiring community colleges -- the linchpin to building a skilled workforce -- to re-evaluate the State's model for static district boundaries. Increasingly, community colleges are working together to share data, develop programming, and better leverage their limited funding resources. These efforts have been driven in part by a need to shorten the time to degree, infuse remedial education with skills training, and provide flexibility for students to balance work and school.

Community colleges are also working to share strategies and align program elements to smooth often difficult transitions between education programs, while addressing deepening remediation needs. Several non-traditional education strategies have already emerged as community colleges and other institutions explore ways to offer students practical skills and income today, as well as an understanding of conceptual principles for a longer-term career. Integrating both practical skills and an understanding of fundamental concepts in work-based learning provides students with the creativity and flexibility to be more competitive in the job market. However, serious challenges exist to delivering these non-traditional training models. Recent research has called the transferability and economic value of many certificate programs into question.⁴³

The region's community colleges -- in partnership with other education and training providers - - should identify additional strategies to become more responsive to the region's changing workforce needs. These strategies may include opportunities to rationalize and coordinate specific educational programs across multiple districts. In particular, ongoing regional efforts to identify or better articulate sector-based career pathways require improved coordination across community colleges. Ongoing implementation of WIOA may provide a basis for aligning the community colleges with the broader public workforce system. A primary focus could be how to best align the region's many institutions, programs, and services with regional economic development goals. In support of these efforts, CMAP should continue to provide relevant research and analysis of occupation trends, industry shifts, commute time and mode, or training requirements. CMAP or other regional partners could also find opportunities to convene the region's community colleges and where appropriate, assist related planning or coordination.

Next steps

The policy framework and strategies presented in this report set the direction for workforce development in ON TO 2050 and CMAP's future work. These strategies will help to integrate human capital considerations into many aspects of CMAP's policy and planning work, such as infill development, municipal capacity, transportation, inclusive growth, housing choice,

⁴³ Minaya et al. "Labor Market Trajectories for Community College Graduates."



economic development, and innovation. This work most closely aligns with CMAP's Inclusive Growth strategy paper, relating to its recommendations to support both broader economic growth and promote opportunities for upward economic mobility for low income and minority residents. These recommendations were developed in conjunction with two closely related strategy memos, Regional Economic Development and Innovative Capacity. Together, CMAP expects their recommendations to inform the plan as well as future technical assistance projects, transportation programming, policy updates, research products, and data sharing. ON TO 2050 is expected to likewise synthesize these strategies into a comprehensive vision for the region.

Regional partners are critical to successful implementation of many strategies. Further discussions on the most effective ways to advance regional collaboration will be essential as the agency develops and then implements ON TO 2050. The largest unanswered questions from this paper -- how to address those topics for which CMAP should not take the lead -- will require continued work by staff in partnership with other organizations to hone both the regional approach and CMAP's role in that approach.

