What We Measure Matters:
Transportation Equity Technical Work Group Policy Brief #1

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Summary

As the Los Angeles County Traffic Improvement Plan, “Measure M,” goes to the ballot in November, Metro finds itself in the enviable position of potentially having the resources to deliver a public works program of historic proportions. The $850+ million per year revenue from the measure would supplement other federal, state, and local funding sources enabling Metro to plan, construct, operate, and maintain a world-class transportation system for the region. Los Angeles County has the opportunity and the obligation to ensure that this massive public investment unlocks the potential of all of our diverse communities by integrating transportation equity into Metro’s long-range planning. Three efforts would greatly contribute towards this end include: defining equity metrics tied to transportation investments; identifying policy levers that advance more equitable outcomes from decision-making processes; and mobilizing an intersectoral coalition of partners around these opportunities.

A body of literature supports the notion that regional economic growth is more robust when equity is at its heart—rather than pursuing economic growth alone. Researchers at the Federal Reserve Bank of Cleveland, the International Monetary Fund, Standard and Poor’s, and USC Program for Environmental and Regional Equity (PERE) have found that inequality is bad for the economy. This “just growth” framework refutes traditional economic thinking that holds that equity and efficiency are competing objectives. Instead, “just growth” posits that if everyone in a region, including those with the fewest resources, is able to participate fully, the economy will grow stronger for the long haul. Since transportation connects people to jobs, education, and services, it can improve economic development, social cohesion and community resilience, public health outcomes, and environmental conditions. This makes transportation a “just growth sweet spot” that—considering the wave of resources Measure M might provide—could generate even stronger economic growth with the right set of policies to ensure that growth is equitable and inclusive.

With this goal in mind, Investing in Place created the Los Angeles County Transportation Equity Technical Work Group to recommend what those transportation equity policies should be. Consisting of academic experts, community-based organizations, and public agency staff, the Work Group’s goal is to help decision makers embed equity outcomes into Metro’s 2017 Long Range Transportation Plan (LRTP) update. The LRTP governs the full range of Metro projects, policies, and programs that will guide transportation funding decisions over the next 40 years.

With the right policies, the LRTP can ensure that the benefits and burdens of these investments are distributed equitably throughout Los Angeles County’s diverse communities. Using the “just growth” framework, the Work Group recommends that Metro identify those communities that

experience the greatest barriers to accessing economic opportunity—we call them "equity communities"—and target these places for strategic transportation investments. These communities are identified by two factors that have historically been determinants of disinvestment and disenfranchisement: race/ethnicity and household income. A third factor, households with low vehicle ownership, presents an opportunity to target new mobility investments in neighborhoods with a higher propensity to take full advantage of them. These three metrics—race/ethnicity, household income, and vehicle ownership—are the Work Group's recommendations for how Metro can most strategically prioritize specific communities for increased investment.

By measuring and prioritizing transportation improvements in these locations, Metro will make sure that all communities—especially those most vulnerable and historically marginalized—are included in Los Angeles County's transportation revolution and the access to opportunity it will provide.

Purpose

Los Angeles County is already in the midst of one of the nation's largest public works programs funded by Measure R, passed by voters in 2008. Measure M would inject even more revenue into this program, adding and accelerating transit and highway projects across the county, increasing funding for transit operations and maintenance, and distributing funding for streets and sidewalks to local agency partners. This exciting and unprecedented public investment in transportation presents an opportunity to evaluate whether this public funding is maximizing potential benefits for all members of the public. Traditionally, the allocation of public funds for large transportation projects has been decided by geographic formulas, ignoring the tremendous differences throughout Los Angeles County in how people travel and where they need to go. The Work Group proposes an alternative approach, similar to the one used by the Metropolitan Transportation Commission (MTC) in the San Francisco Bay Area, to introduce important social, economic, and demographic factors into the discussion of what constitutes a fair distribution of public resources.

Transportation investments in Los Angeles County have not always considered impacts on historically marginalized communities, resulting in freeways that crisscrossed communities of color (e.g., the 105 Highway) and bus service cuts that disproportionately affected low-income transit riders (e.g., consider the work of the Bus Rider's Union). Today work remains because of reduced access to economic opportunity, higher traffic fatality and serious injury rates[1], and worse environmental conditions for residents of low-income communities and communities of color. This paper identifies those factors that most succinctly capture historical patterns of transportation inequity and proposes new metrics to avoid and mitigate these outcomes in future transportation planning.

Metro's Long Range Transportation Plan (LRTP), as its name suggests, is the long-term transportation plan for Los Angeles County and includes a list of the agency's planned and potential projects for the next four decades and beyond. Developed through a regional submissions process with strong participation by stakeholders from the county's nine subregions and councils of governments, the LRTP is a technical document with profound impacts on regional transportation outcomes, determining *what* will be built *where* and *when*. It also includes assumptions about operations, maintenance, debt service, and other financial obligations. The LRTP is the most appropriate place to set measurable objectives for transportation equity—alongside objectives for mobility, access, safety, and sustainability—and evaluate projects, programs, and policies against those intended outcomes.

The purpose of this paper is to recommend how to begin incorporating transportation equity into the LRTP. We start with an introduction to Investing in Place and the Los Angeles County

[1] Traffic Inj Prev. 2010 Oct;11(5):508-13. The relationship of pedestrian injuries to socioeconomic characteristics in a large Southern California County. Chakravarthy B[1], Anderson CL, Ludlow J, Lotfipour S, Vaca FE.

Transportation Equity Technical Work Group, an overview of ongoing demographic changes in Los Angeles County, context on Metro's role in transportation planning generally and transportation equity specifically, and information about related equity analysis at Metro and peer agencies. We then offer a definition and proposed metrics for transportation equity to be integrated into Metro's LRTP update based on research into best practices, input from expert partners, and availability of relevant data.

Approach and Methodology

Investing in Place was founded in January 2015 to promote aligning public investments in transportation with the broader goal of building healthy, sustainable, and equitable communities in Los Angeles County. Investing in Place believes that an equitable transportation system, coupled with equitable development around transit, is a foundational element of building healthy, sustainable, and inclusive communities. Our partners at the USC Program for Environmental and Regional Equity (PERE) developed the "just growth" framework wherein public policy decision makers are one of several stakeholders needed to promote both prosperity and inclusion. PERE has identified the Los Angeles region's unprecedented investment in public transit expansion as a trifold opportunity for economic growth, environmental sustainability, and economic inclusion, if done right.

Starting in late 2015, Investing in Place convened the Los Angeles County Transportation Equity Technical Work Group, which has come to consist of PERE, Advancement Project California, the Los Angeles County Bicycle Coalition (LACBC), the Los Angeles County Department of Public Health, the Public Health Alliance of Southern California, Strategic Concepts in Organizing and Policy Education (SCOPE), and Metro, to build on the "just growth" framework with concrete policy recommendations for Metro's 2017 LRTP update. Since its inception, members of the Transportation Equity Technical Work Group met and briefed Metro staff on quality of life indicators, met with community partners to discuss transportation equity, and conducted a literature review to better understand potential metrics to define transportation equity in Los Angeles County.

Working in collaboration with Metro, we hope that the ballot measure, Metro's 2016 Quality of Life Report, and the 2017 LRTP can target and evaluate investments and programs (i.e. funding priorities, technical assistance, grant writing, and more) in areas based on a shared definition of equity, within the context of changing demographics and the historical marginalization of communities of color. Specifically, the Transportation Equity Technical Work Group seeks to call attention to the equity implications of decisions that are made in the LRTP that are beyond just a project-by-project analysis. Furthermore, we seek to ensure that the update to the LRTP is an open and inclusive process that sets clear metrics and investment priorities in collaboration with community voices, analyzes the benefits and costs of policy choices vis-a-vis those metrics, and makes appropriate investment decisions accordingly.

Currently, there is no board-adopted definition of transportation equity. Such a definition would set clear criteria to define opportunity neighborhoods where targeted investments would serve vulnerable and historically marginalized populations. Fortunately, there are other agencies that have worked with stakeholders to develop metrics to assess equity from which Metro can draw ideas and lessons. Metro does not need to reinvent the wheel. We reviewed best practices by other agencies, interviewed policy experts from around the state, and discussed our findings with the Work Group and other partners to determine our recommendations.

The most relevant example is from the nine-county San Francisco Bay Area, where over 15 years ago the Metropolitan Transportation Commission (MTC) developed metrics to track progress on providing transportation options for households based on race, income, and vehicle ownership. Other tools like CalEPA's CalEnviroScreen and Metro's Environmental Justice Analysis also provide good starting points for Metro to evaluate its role in furthering transportation equity in Los Angeles County. We note, however, that these latter tools were created for the purpose of measuring communities' disproportionate exposure and vulnerability to environmental health hazards, not to assess opportunities to improve access to safe, reliable, and affordable transportation for those vulnerable communities—making it important for Metro to develop its own more relevant tools that go beyond its 2009 LRTP Environmental Justice Analysis.

Transportation in a Complex and Changing Landscape

The Los Angeles metropolitan area has a higher rate of inequality than California and the US, when measured by the Gini coefficient.[2] The significant gap between the region's wealthy and low-income communities manifests itself spatially. In Los Angeles County, where you live can greatly affect educational attainment, job access, health outcomes, public safety, environmental quality, mobility, and more. Simply put, place matters. Inequities are apparent in use of the transportation system as well, with a Metro bus rider's median annual household income averaging $16,377[3] compared to $56,000 countywide[4].

Metro's mission is to provide an effective and efficient transportation system. The natural follow-up question is: for whom? In a region as diverse as Los Angeles County, providing an effective and efficient transportation system requires understanding the intricacies of how and why different communities travel. A focus on transportation equity helps inject that nuance into decision-making by recognizing how class, race, and ethnicity can have profound effects on socioeconomic, and health outcomes. It acknowledges that policy decisions regarding the allocation of funding can exacerbate or ameliorate existing inequities. As a public agency, Metro has a responsibility to consider how these issues intersect with its mission of providing transportation to ensure that the system is meeting the needs of all Angelenos, particularly those communities that have been underserved in the past.

There is also an economic incentive to consider social equity in the expenditure of public funds. Conventional wisdom in economics tells us that there is a trade-off between equity and efficiency, but recent evidence shows that regions that work toward equity generate stronger and more resilient economic growth for everyone—a concept that Dr. Manuel Pastor (USC) and Dr. Chris Benner (UC Santa Cruz) helped develop and termed "just growth."[5] One reason: Underinvestment makes regions less competitive because, for example, a business might hesitate to locate there if the education and workforce development systems, there, have not adequately resourced workers. Another reason: With inequality, social tensions over who will gain and who will lose make the cohesiveness needed to thrive less likely. For example, a parent might be less likely to vote for a school bond measure it they are unsure that their child will benefit. Just growth puts equity at the heart of growth.

This approach gained traction locally when advocacy organizations and concerned community members influenced the State of California to use equity measures to lift up the highest need schools in the allocation of education funding—we are referring to the Local Control Funding Formula allocation process. Cap and trade funds and the State's Active Transportation Program have used a similar approach. In addition to academics and State of California policies promoting and implementing this concept, more traditional economic researchers, including the Cleveland Federal Reserve, the International Monetary Fund, and Standard and Poor's, have released studies showing that inequality impedes growth.[6] More and more policymakers are taking this body of knowledge and translating it into implementation and impact with focused efforts to reduce disparities between rich and poor communities.

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[2] National Equity Atlas, nationalequityatlas.org
[3] Metro Customer Survey – Winter 2013
[4] Los Angeles County US Census (ACS) 2008-2012
[5] Benner, Chris and Manuel Pastor. 2012. *Just Growth: Inclusion and Prosperity in America's Metropolitan Regions*. New York, NY: Routledge.
[6] Berg, Andrew G. and Jonathan D. Ostry. 2011. *Inequality and Unsustainable Growth: Two Sides of the Same Coin?* Washington, D.C.: International Monetary Fund; Eberts, Randall, George Erickcek, and Jack Kleinhenz. 2006. *Dashboard Indicators for the Northeast Ohio Economy: Prepared for the Fund for Our Economic Future*. Cleveland, OH: Federal Reserve Bank of Cleveland; Petek, Gabriel J., Beth Ann Bovino, and Satyam Panday. 2014. *DRAFT: Income Inequality Weighs On State Tax Revenues*. Standard & Poor's Financial Services LLC (S&P), a part of McGraw Hill Financial, Inc. http://images.politico.com/global/2014/09/14/sp_state_inequality_report_draft_final.html.

Since transportation connects people to jobs, education, and services, it can improve economic development, social cohesion and community resilience, and public health and environmental outcomes. In light of the aforementioned wave of resources Metro might receive in the near future, researchers at USC have labeled transportation a "just growth sweet spot."[7] It's an area of investment and development that has the potential to make our region more efficient, economically strong, equitable, and sustainable—all at the same time.[8] But this won't happen without intentionally putting equity at the center.

The New Majority

Racial disparities, income inequality, and environmental justice are systemic issues that public funds and policy can play an essential role in addressing. Through its decision making about planning, funding, and development, Metro can contribute toward reducing disparities. Closing these gaps necessarily starts with understanding them in the Los Angeles County context.

The trajectory of growth and prosperity in Los Angeles County over the coming decades will be determined by communities of color. While the U.S. isn't projected to become majority-minority until 2044, California already reached that milestone in the 1990s, Los Angeles Metro Area crossed it in the 1980s, and the city of Los Angeles reached it by 1980.[9] By 2020, Latinos are projected to become the majority population in Los Angeles County and, collectively, people of color will comprise an estimated 76 percent of the population.[10] But, our region's communities of color are not faring as well in quality of life indicators. For example, Latinos have nearly 2.5 times the rate of working poverty as African Americans and more than six times the rate of whites.[11]

Race or Ethnicity	2010	2020 projection	% change from 2010 to 2020
Latino	48%	51%	+7%
White	28%	24%	-13%
African-American	8.4%	7.4%	-10.9%
Asian or Native Hawaiian or other Pacific Islanders	13.6%	14.2%	4.4%

Table 1: Los Angeles County demographic trends, 2010-2020. Source: State of California, Department of Finance. Report P-1 (Race): State and County Population Projections by Race/Ethnicity, 2010-2060. Sacramento, California, January 2013.

As communities of color are now the new majority, considering how characteristics like race and income intersect with access to employment and residential segregation is essential to ensure policy decisions do not further exacerbate existing inequities, but instead are intentionally designed to ameliorate and address them.

[7] Carter, Vanessa, Manuel Pastor, and Madeline Wander. 2013. *Agenda for Equity: A Framework for Building a Just Transportation System in Los Angeles County*. Los Angeles, CA: Program for Environmental and Regional Equity, University of Southern California. http://dornsife.usc.edu/pere/transportationequity.
[8] Pastor, Manuel and Madeline Wander. 2015. "Making the Most of Transit: Mobility, Growth, and Justice." All in LA Blog. http://www.lathrives.org/making_the_most_of_transit_mobility_growth_and_justice.
[9] The National Equity Atlas, nationalequityatlas.org .
[10] State of California, Department of Finance. Report P-1 (Race): State and County Population Projections by Race/Ethnicity, 2010-2060. Sacramento, California, January 2013.
[11] 2012 data for the Los Angeles-Long Beach-Santa Ana, CA Metro Area from the National Equity Atlas, nationalequityatlas.org .

Place Matters

Recent research has confirmed that a person's ZIP code is one of the strongest determinants of not just their current quality of life but also their long-term health and economic outcomes.[12] Across America, the odds are already stacked against many low-income communities and communities of color. One national study by Harvard professors Raj Chetty and Nathaniel Hendren found that youth who are poor face the worst odds getting out of poverty in counties like those that are home to Atlanta, Chicago, and Los Angeles.[13]

When people living in Los Angeles County—especially communities of color who now comprise the majority of our county's population—are held back by transportation-related barriers to opportunity, the entire regional economy suffers. Students who lack safe and affordable transportation to school can't focus on gaining the skills they need to prepare for the workforce. Parents who must take two-hour bus rides to their children's doctor must forgo a day's wages and risk falling behind on bills. Communities who are most exposed to toxic air pollutants that cause elevated asthma and cancer rates are often comprised of households that are least able to afford the financial burden of those health risks.[14]

The convergence of a growing population, persisting disparities, and aging infrastructure warrants a new approach to public investment. In order to achieve "just growth" in Los Angeles County, public agencies like Metro must invest in ways that reduce barriers to opportunity and increase economic inclusion. Getting this right will involve reevaluating transportation priorities within a "just growth" framework to ensure that future public investment maximizes community benefits and mitigates historical burdens. In short, to ensure transportation equity.

Defining Transportation Equity and Metro's Role

Metro is not simply a bus or train agency. As the County Transportation Commission, Metro is the primary planner, funder, designer, and builder of Los Angeles County's regional transportation system for all modes, from streets and sidewalks to carpool lanes on the highways, and from bus stops to bike paths. Metro's investments also have rippling effects on land use and whether people can access education, employment, health care, family and friends, and so much more. Part of Metro's broad mandate has been established by voters with three sales tax ballot measures providing close to 70 percent of the county's transportation funding for specified purposes[15]. While being one of the strongest "self-help" counties in the nation provides Metro significant resources and autonomy, it also means that the majority of the agency's revenue comes from regressive taxation, creating a moral imperative to ensure that the low-income residents paying disproportionately into the system are benefiting equitably.

Metro has a legal responsibility to ensure equitable access to the transportation system and to avoid disparate impacts on historically marginalized communities. This paper posits that Metro can go beyond this basic legal requirement to leverage its investment of public funds to advance equity and help communities address historical barriers to opportunity. A strong equity definition and application of it would allow Metro to anticipate and capitalize on the opportunities associated with changing demographics, economic trends, and regional growth. By targeting investments in the most under-resourced communities, Metro can strategically maximize its return on investment while creating better outcomes for the region.

Establishing a common definition of transportation equity would guide a shift in policies toward a "just growth" framework and will necessarily change the conversation about what is deemed to

[12] Chetty, Raj and Nathaniel Hendren. 2015. *The Impacts of Neighborhoods on Intergenerational Mobility: Childhood Exposure Effects and County-Level Estimates*. Cambridge, MA: Harvard University and National Bureau of Economic Research. http://scholar.harvard.edu/files/hendren/files/nbhds_paper.pdf.
[13] http://www.equality-of-opportunity.org/index.php/city-rankings/city-rankings-all
[14] Morello-Frosch, Rachel, Miriam Zuk, Michael Jerrett, Bhavna Shamasunder, and Amy D. Kyle. 2011. "Understanding the Cumulative Impacts of Inequalities in Environmental Health: Implications for Policy." *Health Affairs* 30(5):879–87.
[15] Transportation Finance in Los Angeles County: An Overview – February 2013. Safe Routes to School National Partnership and Los Angeles County Bicycle Coalition.

be a fair distribution of resources. So, we provide one here. This definition builds on existing ones that resonate with our work, what we heard through our collaborative efforts at Investing in Place convenings and Work Group meetings, and core concepts from literature and our professional experience. Once transportation equity is defined, it can be measured and the places experiencing the most inequity—we call them "equity communities"—can be identified and prioritized.

Our definition of transportation equity captures both the responsibility and opportunity to achieve "just growth" in our region:

1. ***Equitable access to safe, reliable, and affordable transportation options*** that connect people to employment, services, education, health care, recreation, and cultural destinations;
2. ***Shared distribution of the benefits and burdens of transportation investments***, especially for communities historically impacted by racial injustice, disinvestment, pollution, and unsafe streets.
3. ***Partnership in the planning, investment, and implementation processes*** that results in: shared decision-making; more equitable health and quality of life outcomes for high-priority areas while strengthening the entire region and serving existing residents; and equitable policies to achieve development without displacement.

Use of the word *equity*, not *equality*, is intentional. While almost all parts of the county have communities that could be considered historically marginalized, they are not distributed evenly across all cities and subregions. Focusing resources in the communities that have been most marginalized—equity communities—will maximize our ability to achieve "just growth." This is an evolution from current practice of dividing resources equally by population, employment, or any other formula that ignores the lasting effects of discrimination and disinvestment. Simply put, spreading resources *equally* across a landscape without recognizing existing disparities is not *equitable*; it does not acknowledge that communities have different starting points. In order for transportation investments to strengthen communities and increase economic resilience across the county, resources must be concentrated in those areas with the greatest need and greatest opportunities. These equity communities, to be identified by the metrics recommended below, are the geospatial manifestation of an effective equity policy.

How Has Transportation Equity Been Measured?

Title VI and Environmental Justice Analysis

One of the existing ways to measure how equitable Metro's investments and development are—particularly in terms of determining the geographic spread of Metro's transportation benefits and burdens—is the Environmental Justice Analysis required by Title VI of the Civil Rights Act of 1964, which "protects people from discrimination based on race, color, and national origin in programs and activities receiving federal financial assistance."[16] Metro conducts various analyses under Title VI and Executive Order 12898 when there is a fare change, service route change, or a new project that uses federal funds. For example, Metro utilized fare equity, service equity, and environmental justice tools to support planning for the Exposition and Orange Line projects and the Youth on the Move fare program. These analyses identified any disparate outcomes or disproportionate burdens that proposed changes to fares, service routes, and/or new projects would have on low-income and minority populations (as defined by federal guidance).[17] Title VI analysis only covers the areas surrounding the specific project and does not necessarily account for the cumulative effects these various projects and policy decisions have on low-income or minority populations across the region.

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[16] Federal Transit Administration website: https://www.transit.dot.gov/regulations-and-guidance/civil-rights-ada/title-vi-civil-rights-act-1964.
[17] Federal definitions of low-income and minority populations as well as suggested methodologies for analysis: http://www.fhwa.dot.gov/environment/environmental_justice/faq/index.cfm

Metro hasn't always complied with Title VI requirements. In the 1990s, Metro was the target of one of the largest transportation equity class action lawsuits, resulting in a consent decree to protect bus service—which was then and still is predominately used by lower-income communities and communities of color—from the fiscal impacts of the agency's rail-building ambitions. The Bus Riders Union, NAACP, and other litigants won improvements to the bus fleet, service frequency, and fare policy. While the consent decree is over, it continues to influence the debate over transit spending and serves as a cautionary tale for what happens when transportation equity is not adequately considered.[18]

Since the consent decree, Metro has improved its compliance with Title VI and conducted more sophisticated equity analysis. Metro's 2009 LRTP Title VI analysis identified distinct socio-economic groups to compare the impacts of the planned transportation investments and programs over the subsequent 40 years[19]. It lays important groundwork in mapping race, income, and car ownership in each transportation analysis zone (TAZ). While this analysis provides a baseline for meaningful analysis and compares "build" and "no-build" scenarios as required, it does not take the next logical step by modeling how the "build" scenario could be further improved to achieve equity goals. This effort aims to integrate transportation equity into funding and program decisions, rather than making decisions and then reporting on equity impacts after the fact.

MTC's Communities of Concern and Funding Model

In California's nine-county Bay Area region, the Metropolitan Transportation Commission (MTC) developed metrics to identify "Communities of Concern" that build on the foundation of Title VI but go beyond the basic requirement of avoiding disparate impacts by identifying opportunities to reduce disparities for historically marginalized populations. For over 15 years, MTC has used the Communities of Concern metrics to analyze the benefits and impacts of its Regional Transportation Plan, resulting in increased investments in communities with the greatest need. To implement the Regional Transportation Plan, MTC administers grant funding programs that prioritize Communities of Concern, offering a potential model for Metro's Call for Projects. Our proposed equity communities are inspired by MTC's Communities of Concern.

CalEnviroScreen and Other Indices

Existing tools like CalEnviroScreen (developed by CalEPA's Office of Environmental Health Hazards Assessment) and the Environmental Justice Screening Method (developed by academics at UC Berkeley, Occidental College, and USC) are effective tools for mapping communities that disproportionately suffer from the cumulative impacts of environmental health hazards and social vulnerabilities. Others like the Regional Opportunity Index (developed by the Center for Regional Change at UC Davis) identify communities with high levels of social and economic vulnerability and opportunity.[20] However, none of the tools are tailored to measure transportation equity outcomes. While they contain substantial data that is useful for conducting equity analysis, they don't necessarily help us understand the benefits and burdens of proposed projects that could improve safety, access, reliability, and affordability for communities that have been historically neglected in terms of transportation investments.

Metro's Quality of Life Report currently uses both the CalEnviroScreen (CES) and the Environmental Justice Screening Method (EJSM). The following elements, are missing from CES but are included in EJSM, and we think they're essential for effectively screening method for transportation equity:[21]

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[18] Klesh, Kevin J. 2000. "Urban Sprawl: Can the 'Transportation Equity' Movement and Federal Transportation Policy Help Break Down Barriers to Regional Solutions." Environmental Law 7: 649–690.

[19] Los Angeles County Metropolitan. Transportation Authority's 2009 Long Range Transportation Plan (Plan): Technical Appendix.

[20] For the Regional Opportunity Index, see http://interact.regionalchange.ucdavis.edu/roi/ .

[21] See Investing in Place's blog post, "Screening for Transportation Equity" by Madeline Wander and Vanessa Carter for a longer discussion about the pros and cons of using CES for transportation-related purposes: https://investinginplace.org/2016/06/08/screening-for-transportation-equity/.

- *Race/ethnicity as a variable*: Despite the evidence that shows race is a more important factor than income in explaining residential proximity to environmental health hazards,[22] CES excludes race/ethnicity as a metric. This omission is due to legal concerns on the part of CalEPA.
- *Regional nuance in scoring*: CES scores compare *all* of California's Census tracts to each other and rank them accordingly. However, there is great variation among communities within Los Angeles County that is not captured by statewide scoring. Specifically, CES shows that most communities in Los Angeles County are environmentally impacted—which is accurate in a statewide scoring system—but it also obscures the fact that, within the county, some communities are even more disproportionately impacted than others.

While both the EJSM and CES are great starting points, ultimately, both have limitations for the purpose of identifying opportunities for investment to improve *transportation equity*. To accurately screen for transportation equity, we need to develop transportation equity metrics that result in an agreed upon geospatial definition for measurement, establish baseline conditions, then strategically work towards reducing regional inequities in access to opportunity.

Identifying Equity Communities

Based on a literature review, other public policy efforts to prioritize funding based on indicators of need, and speaking with partners across the Los Angeles region and statewide, we recommend starting with race/ethnicity, household income, and vehicle ownership as transportation equity indicators—again, similar to that of MTC's Communities of Concern. At the end of each section, we present LA County-specific data that can get the conversation started about which criteria to use to identify Equity Communities. Specifying the criteria will require more analysis and more dialogue, but we hope to jumpstart that, here.

Race/Ethnicity

In Los Angeles County, communities of color are over-represented in public transportation ridership, as shown by data from Metro in Table 2. They are overrepresented among bus and train riders as well as by their proximity to rail or BRT stations. Latino or Hispanic Angelenos rely more on Metro bus than Metro rail services, representing over three-fifths of Metro bus ridership. Asian/Native Hawaiian and Other Pacific Islander Angelenos rely on Metro Rail the most. Although Black or African-American Angelenos comprise only 8 percent of the county's population, they are overrepresented in both the share of Metro bus (18%) and Metro rail (18%) riders.

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[22] See, for instance: Pastor, Manuel, Rachel Morello-Frosch, and James Sadd. 2007. *Still Toxic After All These Years: Air Quality and Environmental Justice in the San Francisco Bay Area*. Santa Cruz, CA: Center for Justice, Tolerance and Community, University of California, Santa Cruz. http://cjtc.ucsc.edu/docs/bay_final.pdf.

Race/Ethnicity	Countywide Demographics	Pop. Near Metro Rail or BRT Station	Pop. Near Bus Stop	Metro Bus Riders	Metro Rail Riders
Hispanic or Latino	48%	54%	49%	61%	47%
Black or African-American	8%	10%	8%	18%	18%
Asian/Native Hawaiian and Other Pacific Islander	14%	13%	14%	7%	12%
White (Non-Hispanic)	27%	21%	27%	8%	17%
Other Race	3%	2%	2%	6%	7%
People of Color	73%	79%	73%	92%	83%

Table 2: Los Angeles County demographics in relation to Metro train stations and bus stops. Source: Metro, Quality of Life report (2016).

Moreover, people of color ride public transportation more than whites across the income spectrum, making race/ethnicity an important indicator independent of household income.[23] Looking at population projections, Los Angeles County will be 80 percent people of color by 2040,[24] which is certainly an important consideration for long-range transportation planning and a potential opportunity to grow transit ridership. During our research, Work Group meetings and partner convenings, we consistently heard that race and ethnicity matter to address social equity.

Which race/ethnicity criteria could Metro use to determine Equity Communities in its Long Range Transportation Plan? MTC's Communities of Concern criteria as a baseline defines a community of color as having 70 percent or more residents who are Black or African-American, Asian, American Indian or Alaska Native, Native Hawaiian or Pacific Islander, some other race, two or more races, or Hispanic/Latino of any race. In Los Angeles County, this benchmark captures about three fifths of Census tracts (our proxy for neighborhoods); setting the benchmark at 88 percent or more people of color captures two fifths of LA County tracts, and setting it at 97 percent or more captures one fifth of tracts.[25]

Household Income

People's income levels generally correlate with the type of transportation they use.[26] By addressing transportation investments equitably for low-income communities—who use public transit at much higher rates than higher-income populations—Metro can create better access to economic and educational opportunities for those who would benefit the most. In regions across America, household income has a significant impact on one's transportation options to accessing services, amenities, and economic opportunities.

[23] Carter, Vanessa, Manuel Pastor, and Madeline Wander. 2013. *Agenda for Equity: A Framework for Building a Just Transportation System in Los Angeles County*. Los Angeles, CA: Program for Environmental and Regional Equity, University of Southern California. http://dornsife.usc.edu/pere/transportationequity.

[24] State of California, Department of Finance. Report P-1 (Race): State and County Population Projections by Race/Ethnicity, 2010-2060. Sacramento, California, January 2013.

[25] USC PERE analysis (quintile ranking) of 2014 5-year American Community Survey (ACS) estimates at the Census tract level in Los Angeles County.

[26] Thomas W. Sanchez, Rich Stolz, and Jacinta S. Ma. 2003. Moving to Equity: Addressing Inequitable Effects of Transportation Policies on Minorities http://www.racialequitytools.org/resourcefiles/sanchez-moving-to-equity-transportation-policies.pdf

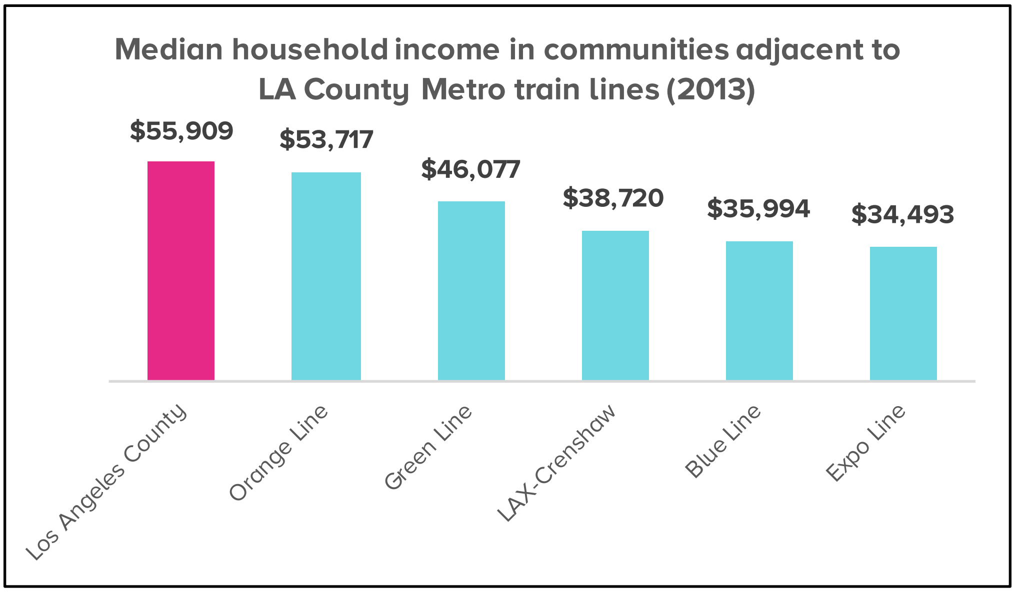

Figure 1: Median household income in Census tract areas adjacent to LA County Metro train lines. Note that the Expo Line demographics reflect Phase 1 (USC to Culver City, not Phase 2 which includes Santa Monica). Compiled by Neighborhood Housing Services of Los Angeles County in the report, "Transit Oriented Development and Affordable Communities in Los Angeles County" (2015).

According to Reconnecting America's analysis of 2011 American Community Survey data, LA County workers earning less than $25,000 per year are more likely to use transit to get to work (about 71%).[27]

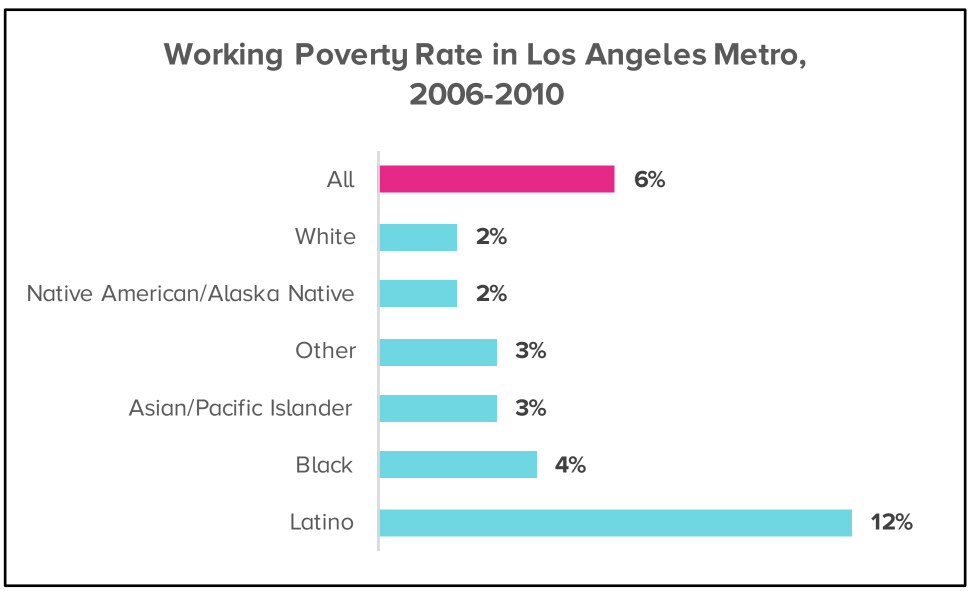

Figure 2: Working poverty is defined as working full-time with an income below 150 percent of the poverty level. Source: USC PERE tabulations of IPUMS ACS data. Steven Ruggles, Katie Genadek, Ronald Goeken, Josiah Grover, and Matthew Sobek. Integrated Public Use Microdata Series: Version 6.0 [Machine-readable database]. Minneapolis: University of Minnesota, 2015.

[27] Reconnecting America. November 2013. "The Los Angeles Equity Atlas." http://reconnectingamerica.org/laequityatlas/20131101-laequityatlas-final.pdf.

Major trends in housing segregation also highlight the need to better connect low-income community members to high-quality transit (high-quality transit is defined as bus or rail transit operating with frequencies of at least every 15 minutes):[28]

- A study by Dr. Ann Owens (USC) found that income segregation in Los Angeles County rose by 12 percent between 1990 and 2010. While this is less than the national average of 20 percent, in absolute terms this increase makes Los Angeles one of the most segregated counties in the country.[29]
- Renters are spending more on housing than they have historically. Metro's Quality of Life report found that, since 2008, residential rents in Los Angeles County have risen 11 percent. In 2012, in the Los Angeles Metro Area, 58 percent of renters were spending more than 30 percent of household income on housing costs, with Black and Latino renters even more burdened than the metro average. For owners, the metro average of housing burden is 43 percent, and the average for people of color is 49 percent.[30] This data substantiates what most residents know: Much incomes in the area is locked up in housing costs and this is an expensive place to live.

Which income criteria could Metro use to determine Equity Communities in its Long Range Transportation Plan? Using MTC's Communities of Concern criteria as a baseline, a low-income community can be defined as having 30 percent or more residents who are identified as below 200% of the federal poverty level (FPL)—or, those living below twice the poverty level.[31] In Los Angeles County, this benchmark captures about three fifths of Census tracts; setting the benchmark at 47 percent or more people living below twice the poverty level captures two fifths of LA County tracts, and setting it at 62 percent or more captures one fifth of tracts.[32]

Vehicle Ownership

Households with one car or less are a natural constituency for transit and shared mobility, including bike share, car share, and ride share. These households are likely to already have members who rely on transportation options other than driving and would benefit from improved access and service quality. Improving mobility options for these households would reduce the burden on primary wage earners to chauffer other members of their households to work, school, and healthcare, increasing their earning potential. It stands to reason that households that are "care-lite"—whether by choice or because they can't afford vehicle ownership—are more likely to take advantage of new transportation services than households that have already paid the sunk cost of vehicle ownership. Focusing on access to transit and other mobility services for households with zero or one car will yield greater benefits than equivalent investments in places with lower propensity to use transit.

[28] *California Public Resources Code Section. 21064.3*
[29] Owens, Ann. 2016. "Inequality in Children's Contexts Income Segregation of Households with and without Children." *American Sociological Review*. http://asr.sagepub.com/content/early/2016/04/21/0003122416642430.
[30] National Equity Atlas; nationalequityatlas.org .

[32] USC PERE analysis (quintile ranking) of 2014 5-year ACS estimates at the Census tract level in Los Angeles County.

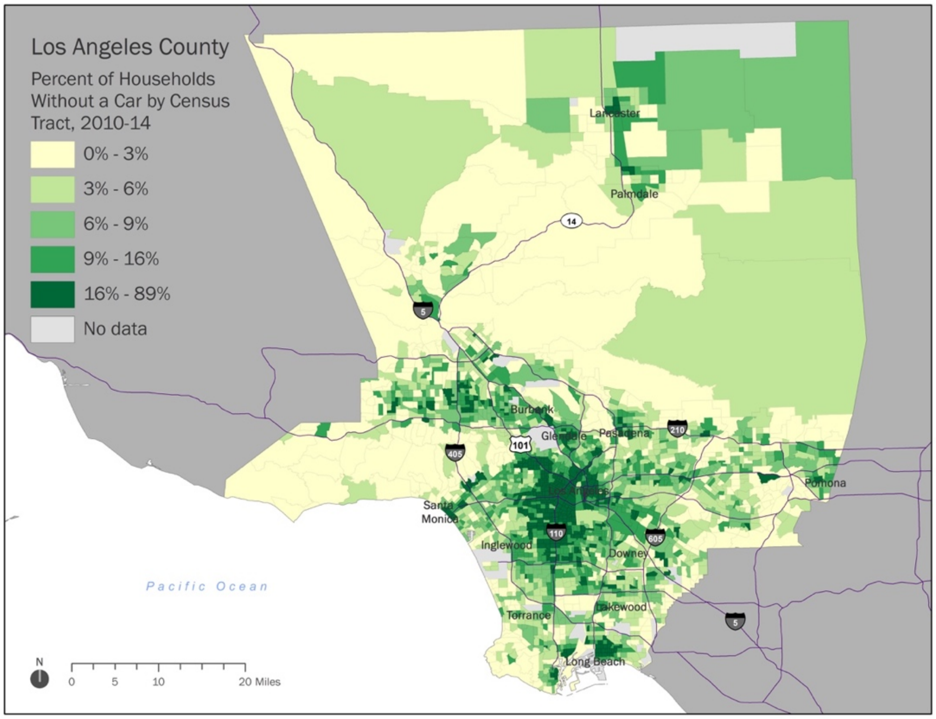

Figure 3: Percent households without a car. Source: Created by USC Program for Environmental and Regional Equity using the 2014 5-year American Community Survey and 2014 TIGER/Line Shapefiles from the U.S. Census.

Which vehicle ownership criteria could Metro use to determine Equity Communities in its Long Range Transportation Plan? Low Vehicle Ownership (LVO) Communities can be defined as neighborhoods where greater than 10 percent of households have access to zero or one vehicle, based on US Census data. Using 10 percent of households without a car as the benchmark, we capture about two fifths of tracts in LA County; setting the benchmark at 6 percent or more households without a car captures three fifths of LA County tracts, and setting it at 16 percent or more captures one fifth of tracts (see Figure 3).[33] This data analysis differs from the metric we are recommending, however the data of zero cars households can help us inform how to identify low vehicle ownership neighborhoods and the best data sets to apply as we move forward.

Conclusion

With its unprecedented investment in transportation infrastructure, Metro has the opportunity and responsibility to consider its role in shaping the region's economic growth and quality of life for millions of residents by aligning its planning, programs, policies, and investments to better serve Los Angeles County's changing demographics.

Transportation equity is a complicated concept with many more nuances than can be captured in a simple definition. However, the basic premise of identifying historically marginalized communities that warrant targeted investment to reduce disparities in access to opportunity is sound policy with strong precedent among Metro's peer agencies. These three recommended criteria to identify equity communities represent a simple way to begin operationalizing a transportation equity policy.

We recommend that Metro adopt an equity policy that includes a geospatial definition of opportunity zones and measures the benefits and impacts of its plans, policies, and programs within these places, including, but not limited to the Call for Projects and Long Range Transportation Plan (LRTP) update. By adopting a "just growth" approach to investing public

[33] USC PERE analysis (quintile ranking) of 2014 5-year ACS estimates at the Census tract level in Los Angeles County.

resources within high-priority communities, Metro can maximize the social and economic value of its investments while working towards equity.