A Framework for Equity in New Mobility

TransForm

Acknowledgements

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Front cover: Pamela Palma Photography, 2016
Reginald "RB" Burnette, Jr., The Original Scraper Bike Team President and a City of Oakland Bicycle & Pedestrian Advisory Commissioner, at an Oakland Mobility (OakMob) 101 community resource fair. During this family-friendly, multi-lingual, and culturally relevant event, attendees shared their transportation needs with City staff and new mobility companies.

About TransForm
TransForm promotes walkable communities with excellent transportation choices to connect people of all incomes to opportunity, keep California affordable, and help solve our climate crisis. With diverse partners we engage communities in planning, run innovative programs, and win policy change at the local, regional, and state levels.

Introduction

Transportation planning has overwhelmingly focused on moving as many cars as possible. The resulting transportation system has had devastating impacts on low-income communities of color, people with disabilities, seniors, and youth, who have been left out of decision-making and suffered from poor public transit service, inadequate access to opportunities, high household costs, and exposure to high levels of air pollution.

Very low-income families spend, on average, over 30 percent of their income on transportation. Limited mobility to access jobs, health care, and other opportunities is a major barrier to self-sufficiency. Disadvantaged communities also suffer severe health impacts from our current transportation system, with greater numbers of car-related injuries and deaths, and higher rates of asthma, heart disease, and other pollution-related illnesses. Transportation is also the largest source of climate pollution and these impacts fall hardest on the most vulnerable communities.

Transportation, however, is on the cusp of massive change. New business models that integrate advanced technologies and transportation will fundamentally change the way we get around.[1]

Examples of "new mobility" options already proliferating include:

1. Shared vehicles (bike share, car share, and scooter share)
2. Ride-hailing or Transportation Network Companies (TNCs, e.g. Uber, Lyft)
3. Private micro-transit services, often using 15-person shuttle vehicles (e.g. Chariot)
4. Demand-responsive public bus service (e.g. AC Transit Flex)
5. Carpool apps (e.g. Scoop, Waze Carpool).

Several early examples show that these new options may exacerbate unequal access. For example, suburban bus operators are now turning to TNCs to help provide service, which may be too costly for lower income riders, and many car share and bike share systems are unavailable to people who are unbanked or don't have smartphones. As automated or "driverless" vehicles become more widespread, the impact of new mobility models will increase dramatically. What will this mean for disadvantaged communities?

Change and disruption of the existing transportation network is inevitable, but worsening inequality doesn't have to be. We can harness innovations to create a more equitable, sustainable transportation system and begin to right the wrongs of the past. Public transportation must be the backbone of any such system. With this commitment, we can begin to close the equity gap.

TransForm works toward a future where the needs of vulnerable populations with limited mobility (low-income, people of color, the disability community, seniors, and youth) are central in transportation planning. This paper gives an overview of key obstacles to successfully achieving this vision. It then provides a framework for evaluating the social equity impacts of new mobility projects and programs, and several urgent recommendations to ensure new mobility does more good than harm.

Already Missing the Mark

For 100 years there was uninterrupted growth in driving. But now, new mobility options combined with growing preferences for walkable and bikeable communities near public transit are helping to reverse this century-long trend. Millennials' car-buying rates are 35 percent lower than those of Gen Xers,[2] and U.S. annual per capita vehicle miles traveled (VMT) decreased 6 percent between 2004 and 2014.[3]

The changes in new mobility and lifestyle preferences we have experienced over the past decade are just the beginning. The most profound change will take place as self-driving or autonomous vehicles (AVs) come to market. AVs could greatly reduce the cost of shared trips. With prices that can be 60-70 percent lower than current TNC trips, they will precipitate the overhaul of public transit systems.

Disruptions in the transportation sector can be a boon for social equity if they focus on increasing affordability and accessibility for low-income, youth, seniors, people with disabilities, and other riders who rely on public transit and paratransit. Shared AVs have the potential to greatly cut travel times and increase access to services and public transit. The convenience could allow many more people to reduce private vehicle ownership and save money.

Yet automation could also be an absolute disaster for social equity. The potential benefits of new mobility may be out of reach for those who need them most — people with limited income or mobility access, and those who have been harmed or left behind by transportation planning decisions in the past. Some of the major issues that have already emerged include:

- **Barriers to accessing services.** Significant barriers to accessing new mobility options exist for those who are unbanked, have limited access to credit, have physical disabilities, have language barriers, are low-income, or do not have a smartphone. When services like car share and EV charging arrive in neighborhoods, companies tend to locate where there will be ready uptake by more affluent, tech-savvy individuals, rather than in low-income neighborhoods.

- **Reduced transit service.** A number of bus operators are cutting low-ridership bus lines and replacing them with Uber and Lyft subsidies (e.g. all rides at $3 or at 50 percent off). While this may increase efficiency and access for riders, it is typically done without a review of equity impacts. Lower income bus riders who currently pay, for example, $45 per month for a bus pass may see their monthly transportation costs go up to $250 or more.

- **Discrimination.** There is evidence that TNC drivers operate with some racial bias. A major study in Seattle and Boston examined differences in ride acceptance, wait times and cancellations based on race. In Boston, the cancellation rate by Uber drivers was more than twice as high for men hailing a ride with black-sounding names versus white-sounding names (Figure 1).[4] It doesn't have to be that way — Lyft drivers did not show the same discrimination. TNC companies are working to put new systems in place, but racial discrimination persists unless we create structures and guidelines to guard against it.

Figure 1. Rate of Cancellations by Race and Gender, Boston
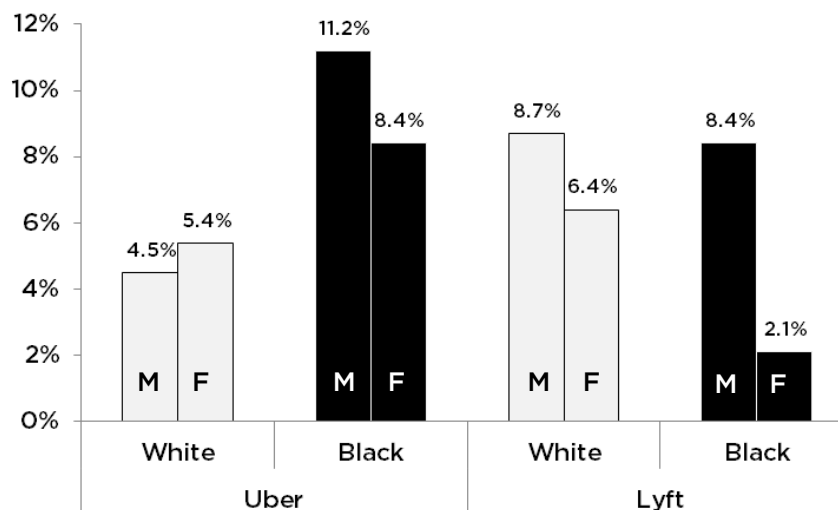
Source: National Bureau of Economic Research, 2016

- **Insufficient governance structures or regulations.** The public sector has structures in place to improve access for the most vulnerable, and improve the transportation system overall. But many of these safeguards could be undone by new mobility. For example, the Americans with Disabilities Act (ADA) requires transit agencies to offer paratransit service to people with disabilities that live along their bus routes. As bus routes are eliminated in favor of TNCs, there are no regulations in place to ensure ADA-accessible service.

- **Insufficient data on new technologies.** Cities and states have made only modest inroads in getting data from new mobility providers. These providers have not been eager to share the data they collect on measures like total vehicle travel, prices for customers, pay rates for drivers, and other key metrics. Without this data it will be impossible to fully understand the impact of new mobility services, including any discrimination that may be taking place.

- **Environmental impact.** Currently, there are no stringent fuel efficiency requirements for the fleets of Uber and Lyft, let alone the dozens of other new mobility companies offering shuttles, vans, or other modes. Combined with the lack of data, it is impossible to know whether TNCs are in fact increasing rates of driving and air pollution, and which communities are the most impacted. In addition, automation could result in many more vehicle miles traveled and increased CO_2 emissions.

- **Labor issues.** An increasing number of individuals have taken up contract work in the new mobility space, an important part of the "gig economy." It is critical to ensure that their income represents a true living wage, after accounting for the costs of owning and driving their vehicles. In the near future, we can also expect many if not most driving jobs to be replaced with automation.

Furthermore, unlike transportation planning over the past 100 years, this revolution is being led by the multi-billion dollar private sector. So far, these companies are not required to plan for the needs of low-income individuals, people of color, or people with disabilities for whom known barriers to access persist. And unlike other industries that have been disrupted by technological advancement, new mobility is heavily dependent on public investment in infrastructure and cooperation from government agencies in order to operate.

If we want a more equitable future, the private sector should not be left as the primary force shaping our transportation system. Leaders in transportation policy must intervene to put new mobility on the right track. Without policy interventions and increased funding to ensure low-income communites benefit from new mobility, we could end up with greater economic disparity, worsened transportation inequality, and negative climate impacts.

In the next five years, the United States will be the most important country in the world for new mobility. California is in a position to lead, as so many of the tech companies and TNCs have their headquarters in the Bay Area, and the state is working to meet aggressive climate targets.

Harnessing Innovation for Equity

Our current transportation system is both inefficient and inequitable, with low-income communities of color having too few transportation options while bearing the biggest burden of climate pollution. As automation proliferates, the potential changes in driving and climate emissions vary widely, creating either utopian or dystopian scenarios in terms of driving rates and climate emissions.

The same level of uncertainty exists in terms of possible impacts on disadvantaged communities. In fact, because of the efficiencies that are possible with new technology, we can envision a utopian scenario. Several reports and pilot programs show how we can mitigate the negative social equity impacts of new technologies and even improve the status quo.[5]

A recent optimistic study by Rocky Mountain Institute (RMI) finds that peak car ownership might arrive as early as 2020. Once they are allowed autonomous fleets, prices for Uber, Lyft, and other shared modes could drop by 60-70 percent. RMI found that as a result, this could cause vehicle sales to plummet by 50 to 60 percent.[6] These shifts could greatly reduce household transportation costs, helping cash-strapped families get where they need to go more affordably.

New mobility also offers the potential for healthier and safer communities. According to the Lawrence Berkeley National Laboratory, if the vehicles of the future are shared, electric, and autonomous, we could reduce overall individual vehicle emissions by up to 90 percent.[7] Since most car crashes are a result of driver error (driving too aggressively, too fast, while sleepy or inebriated, etc.), autonomous vehicles could also eliminate up to 90 percent of crashes and over 25,000 fatalities annually. These benefits could be felt most in disadvantaged communities that currently endure poor air quality and disproportionately high rates of injuries and death from accidents involving vehicles.

As climate leadership wanes on the national level, there is an opening for states, local governments, and private companies to step up and fill the void. After President Trump pulled the United States out of the Paris Climate Agreement (a landmark commitment from 195 countries to reduce greenhouse gas pollution), it was encouraging to see companies deeply invested in new mobility like Lyft, Google, Apple, and Tesla pledge to uphold and even exceed the goals of the Paris Agreement.[8]

Historically, transportation investments have exacerbated inequality. Too many low-income communities of color have been bulldozed for highway construction. These same communities have been relegated to spending higher proportions of their incomes on personal automobile travel, since so many communities are built with the expectation that everyone will drive everywhere for every trip. We have a responsibility to harness tech advancements to redress persistent inequities. **If we ensure that new mobility happens with public transit, walking, and biking as top priorities, and with disadvantaged communities at the forefront of our thinking, we can use this transportation revolution to reduce inequality.**

A Framework for Equity Outcomes in New Mobility

With new technologies and services emerging by the month, cities and governing bodies will need a framework for evaluating equity impacts. The framework below is a starting place that can be tailored to meet the needs of communities.

INCREASED ACCESS TO OPPORTUNITY

⇨ Does it overcome barriers (financial, cultural, technological, geographic) to accessing new mobility, so vulnerable populations actually benefit?

⇨ Does it improve, not impede, the movement of public transit?

⇨ Does it increase access to jobs, education, health care, and other destinations?

⇨ Does it reduce travel times for low-income households?

⇨ Does it prioritize the needs and trip patterns of vulnerable populations?

AFFORDABLE OPTIONS

⇨ Is the price low enough for low-income individuals to regularly use the service?

⇨ In instances where existing services such as bus lines are being cut, are there mechanisms to ensure that transportation costs don't increase for low-income households?

⇨ Is it likely to reduce transportation costs in the long run (e.g. by reducing the need for vehicle ownership or for parking in new developments)?

MORE HEALTHY & SAFE COMMUNITIES

⇨ Does it reduce air pollution and greenhouse gas emissions, both of which disproportionately burden low-income communities and people of color?

⇨ Does it serve people with disabilities, or people who walk or bike?

⇨ Are there policies in place to prevent discrimination or racially-biased policing?

⇨ Is it likely to improve health and reduce health disparities for vulnerable populations (e.g. by reducing crashes and fatalities or focusing vehicle electrification in impacted communities)?

REDUCED INCOME INEQUALITY & UNDEREMPLOYMENT

⇨ Does it increase employment with stable, well-paying jobs?

⇨ Does it create pathways for low-income individuals to enter the new mobility work force?

⇨ Are there policies in place to ensure fair treatment of the labor force (e.g. providing a living wage, ability to unionize, benefits, etc.)?[9]

⇨ Are we creating programs to train workers and replace jobs that will be lost with vehicle automation?

Recommendations to Prioritize Equity in New Mobility

The new mobility conversation has focused too much on technology and too little on human impact. We must humanize the role of emerging mobility technologies by addressing the current and historically unaddressed needs of those left out of transportation improvements. The following are recommendations for new mobility companies and the public sector to prioritize communities in most need of transportation options and those most impacted by climate pollution:

1 Authentically engage and respond to the needs of disadvantaged communities. Disadvantaged populations are currently not strongly engaged in issues of new mobility and have difficulty affording electric vehicles (EVs) or using the infrastructure for them. As the pace of change accelerates, it is critical to expand efforts to partner with disadvantaged communities in new mobility planning. These communities need to be part of the planning process as early as possible to ensure solutions respond to their needs and concerns.

2 Conduct equity demonstration projects. We need pilot projects that allow participation for those with limited access to credit and technological barriers, such as Chicago's new Ventra card and app. Ford GoBike in the Bay Area launched with a discounted low-income membership ($5 for the first year) that allows for cash payment, and includes an accessibility pilot to make adaptive bikes available to the disabled community. Every agency supporting new mobility programs should work to maximize uptake in neighborhoods that are either underserved or pollution-burdened by existing transportation systems.

3 **Give shared modes priority in planning and infrastructure.** Cities should give priority for public transit, high-occupancy vehicles and car share vehicles in urban areas. This includes designating curb space for shared vehicles and dedicating more traffic lanes to public transit and high occupancy vehicles on local streets and highways.

4 **Prioritize equitable service coverage to increase access to disadvantaged communities.** As cities and agencies approve and permit new mobility operations in the public right-of-way, they should set regulations and/or prices to support coverage in lower-income geographies. Where possible, they should support community benefits agreements between the community and new mobility companies, or otherwise foster a level of accountability so all people benefit from new mobility and no group is disadvantaged.

5 **Incorporate new mobility including potential benefits of shared AVs into long-term plans for housing and land use.** One of the most effective climate emissions reduction strategies is to create affordable housing near public transportation.[10] By further reducing vehicle ownership, new mobility can allow us to plan for less parking, which leaves more space and funding for homes and other beneficial uses. Transportation agencies should be incorporating potential benefits of technology in long term planning, including the possibility of fleets of autonomous vehicles operating on a network of express lanes on highways. Doing so could clarify the pathways to reduce demand for roadway expansion, as well as justify additional investments in public transportation and new mobility.

6 **Increase shared electric/zero emission vehicles in disadvantaged communities.** No groups should be excluded from using clean vehicle technology and infrastructure. Los Angeles's new shared mobility project that locates electric car share vehicles in underserved communities provides an important new model for increasing access to clean vehicles.[11]

7 **Plan for affordability.** As agencies re-examine transit routes and possible new mobility alternatives, they should ensure subsidy structures specifically account for low-income riders, and work to keep costs from increasing over current costs.

8 **Provide funding to scale equity projects.** Cities and transportation agencies should set aside funding specifically to scale successful models of equity in new mobility. The California Air Resources Board, for example, has an excellent program focused specifically on getting electric vehicle car sharing into disadvantaged communities.

9 **Create pathways to opportunity in the new mobility economy.** With automation there will inevitably be fewer driving jobs in the future. In the long term, we need specific pathways for low-income individuals to participate as workers with benefits in this new mobility economy, and to fund job training programs.

Conclusion: Time to Act

As shared mobility and autonomous vehicles reshape our transportation system, we stand at a crossroads. In one direction, these technologies offer a chance to redress inequities that have plagued our transportation systems and our society for generations. This is a once-in-a-century opportunity to create a cleaner, more efficient and affordable transportation network for everyone.

In the other direction, new mobility innovations could go the wrong way: increasing private vehicle use, driving, emissions, and rates of underemployment, opening up new avenues for discrimination, and leaving low-income people behind, further widening the inequalities we have now. We can't afford to let that happen.

Since the rise of the automobile and the interstate highway system, transportation planning decisions and infrastructure development have imposed a heavy burden on low-income communities of color. These communities have been excluded from decision-making, divided and destroyed by new highways and transit systems, disadvantaged by inadequate service and maintenance, and physically harmed by air pollution and unsafe streets.

These inequities hurt us all, not just communities that are directly affected. When neighbors are sick, isolated, and struggling to get where they need to go, it undermines local economies and the social cohesion of cities and regions.

The good news is that just as the ill effects of transportation injustice do not exist in a vacuum, neither do the solutions. If we focus new mobility on rectifying the inequities in the transportation sector, entire cities and regions will share in the benefits of cleaner air, safer streets, and greater access to affordable convenient mobility options.

People, government agencies, and private companies will shape the future of transportation. The framework and recommendations in this report offer a starting place to prioritize social equity through deep engagement of impacted communities, bold experimentation, and sharing successes across the private and public sectors.

We have an incredible opportunity to make clean, affordable transportation solutions more available to those who need it most, while reducing air pollution and climate emissions. This is the right thing to do and it's the smart thing to do, but it won't happen on its own.

The time to act is now.

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