

Transportation Equity and Accessibility in the Charlottesville Region

Summary and Recommendations

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TRANSPORTATION EQUITY AND ACCESSIBILITY IN THE CHARLOTTESVILLE REGION

Assessment and Recommendations

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1. INTRODUCTION

In the United States, transportation is the second largest average household expenditure after housing (Bureau of Labor Statistics, 2019). Populations most burdened by transportation barriers are low-income, disabled, elderly, rural and minorities, including immigrant populations (Hacker et al., 2011; Jansuwan et al., 2013; Wallace et al., 2005). The Albemarle/Charlottesville region of Virginia finds itself in the same predicament as other places across the United States. Transit services including Charlottesville Area Transit (CAT), regional provider Jaunt, and UVA's University Transit Service (UTS) serve thousands of riders every day, but transit still represents a small proportion of total travel in the region (Thomas Jefferson Planning District Commission, 2019). Transportation and mobility remain difficult for many local residents, with transportation ranking highly as a priority for the community and University in the near term (UVA Community Working Group, 2019). Transportation in the region is significantly inequitable, privileging systems and policies that require access to automobiles and the ability to afford them.

In this study, we look beyond the data generally available to transportation planners and policymakers and seek out the causal factors behind the barriers to mobility faced by priority populations in the region. Our approach includes focus groups, mapping exercises, and stakeholder interviews in order to understand barriers to access as well as interconnected factors (e.g. housing affordability) that determine and affect daily life for residents across the region. We seek to better understand the region's transportation needs according to the experiences of its users and planners, how current services are affecting and reaching underserved populations, and to identify actionable opportunities for improving access for all. Based on our findings, our recommendations include mobility strategies, equitable engagement practices, and people-first policies for the region.

2. BACKGROUND

Mobility is the ability to move generally, but accessibility is the ability to get to the places you need to go. In other words, accessibility is the true goal of transportation systems, linking people to places and opportunities such as jobs, shopping, friends and family, and health care (Levinson & Krizek, 2005). Access to opportunities is often unequally distributed, and some communities are marginalized by the planning and operation of transportation systems. The lack of access for such communities, whether low-income, minority, immigrant, older or rural is often attributed to two intertwined challenges: a “spatial mismatch” and a “transportation mismatch.” The spatial mismatch encompasses the idea that people do not live near the places they need to reach, whether places of employment, schools, grocery stores, or otherwise (Fan, 2012). This issue is of increasing importance as affordable housing moves farther from the urban core. The transportation mismatch underscores that our transportation systems also fail to meet people’s needs (Blumenberg & Agrawal, 2014). Because of the complexity of transportation systems’ interactions with other social and spatial systems, a broader understanding than just the spatial or transportation mismatch may be useful to explain unequal accessibility in Charlottesville. The “social determinants of health” (SDOH) have been used to shed light on the broader conditions that impact health and well-being. The SDOH encompass the social and environmental conditions of daily life that affect a wide range of health risks and outcomes (Bircher & Kuruvilla, 2014; McAndrews & Marcus, 2014). Transportation issues that affect well-being include employment search and retention, food access, childcare, education, access to healthcare and many other important services. Figure 1 illustrates the socio-political factors that facilitate or inhibit urban decision-making that produces equitable transportation systems.

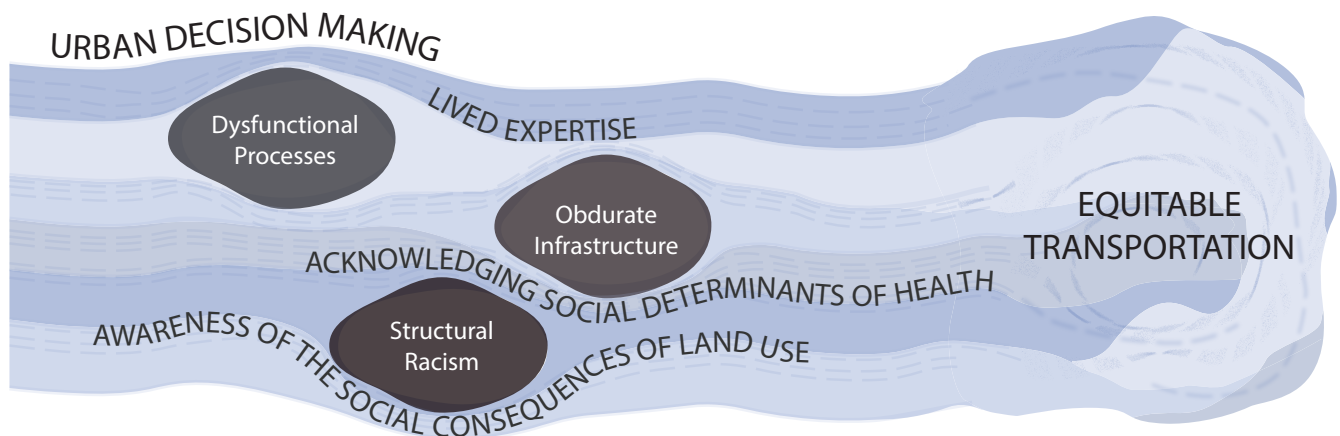


Figure 1. The Path to Equitable Transportation

3. METHODS

This study takes a mixed methods approach to understanding transportation barriers in the Albemarle/Charlottesville region. We conducted seven focus groups and spatialvoice participatory mapping exercises with local residents and interviewed regional leaders and transportation agency heads. As a part of our engagement with community leaders, we also assessed the Regional Transit Partnership, which represents the most significant effort to holistically address equitable transportation in the region.

4. FINDINGS

Focus Groups with Community Members

The four major themes of Respect, Capacity and Coping, Accessibility and Safety emerged from the analysis of the community focus groups data (see Table 1) that defines these themes and summarizes some key, repeated subthemes and specific issues.

Respect

Respect encompasses the following question, ‘Do the transportation systems I use treat me humanely and give a sense that I am a valued consumer?’ Transit riders have an expectation of how they should be treated and esteemed as customers. Participants shared a perceived lack of respect by the overall Charlottesville and Albemarle transit systems and its operators, as well as the parking and transportation options supplied by UVA and local government. The lack of respect also manifests as differentiated respect, where the system and its operations are geared primarily toward the wellbeing of a particular group of travelers, often White, wealthier, with a reliable car and access to parking. Several participants raised the issue of their time not being respected. Specifically, they felt that they spend a disproportionate amount of time being transported on transit routes that were inefficient. Primarily they felt that the routes selected were not the most expedient choices to get them between major points in the region.

Capacity and Coping and Accessibility

This theme highlighted the questions of; ‘How do I cope with my travel needs on a daily basis and who is being catered to?’ How do the structures and systems that comprise the transportation network enable or create barriers to access? A central point made by interviewees was that even though parts of the Charlottesville-Albemarle community are in a high socioeconomic category, about 27% of Charlottesville residents have earnings are below the poverty line. Thus, participants emphasized they are still part of the community, contribute to the community, have needs, and are deserving of efficient resources.

Safety

The theme of safety broadly describes the sentiment of ‘Is this system safe for me to use?’ There was a great need expressed for the transit system to consider the overall safety of its consumers. That includes the physical abilities of riders when planning bus stops and bus routes, the need for improved lighting and less isolated bus stops, and parking lots. Participants expressed concern for their personal safety as a result of these issues and highlighted the need to make some fairly reasonable adjustments.

Spatialvoice Participatory Mapping

Each focus group began with a participatory mapping exercise which gave residents the opportunity to consider their experiences of mobility and accessibility in the region. The maps in Figures 2 and 3 illustrate participant inputs, organized by participant groups. Using two maps is helpful to reveal the different “geographic scales” of daily life among the respondents and key spatial barriers to access in the region.

Housing Focus Group Aggregate Mapping

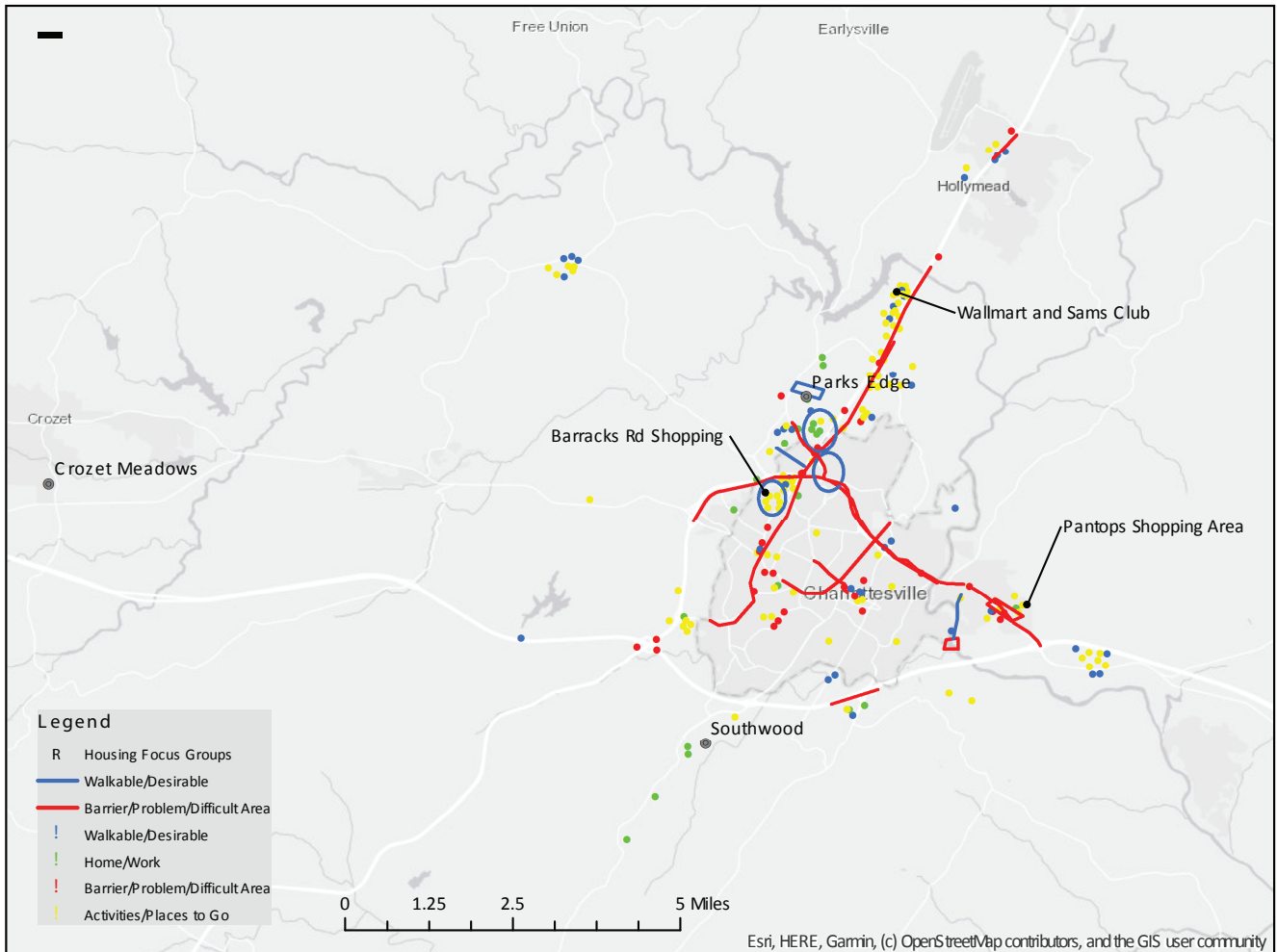


Figure 2. Local Resident Groups Participatory Mapping

Interviews with Transit Agency and University Officials

The interviews with city, county, and university decision makers echoed and expanded upon the results of the focus groups. Major themes from these interviews included accessibility, affordability, connectivity, trust, and collaboration for transportation in the region.

Accessibility

The topic of access includes issues of bus routes, physical ability of transit users, and affordability. A major issue lies with bus routes around University Grounds and the University Health System. This affirms what was stated in the focus groups regarding the need for more routes to the health center, and better communication needed between Transit Directors and those that manage high density routes and drop off areas.

Affordability

Informants discussed affordability and cost of fare from a variety of lenses. Due to the separation of Charlottesville Area Transit (CAT), Jaunt, and University Transit Service (UTS), each transit system is funded differently and there is not a universal fare charged to every rider. University of Virginia students and employees ride CAT and UTS free of additional charges because of the university's subsidy to these transit systems. For people commuting beyond Charlottesville, funding for transit to rural areas is strained by a lack of local resources. Jaunt services function the bridge this gap. When trips are inside the Charlottesville City and urban ring, Jaunt serves only those riders with disabilities who are ADA-certified by Charlottesville Area Transit. Outside of Charlottesville, however, people without disabilities may also benefit from Jaunt service and the fare is determined by the area served and route traveled.

Connectivity

Convenience, choice, and flexibility, were issues that the stakeholder interviews highlighted when discussing connectivity. The challenge of providing frequent service to alleviate the fear of missing a bus and the possibility of a rider being stranded was a major issue noted by multiple interviewees. They recognized that riders are concerned with a lack of convenience in bus routes and bus wait times, and that trust between transit systems and riders has to be improved. The lack of connectivity between the transit systems within Charlottesville and Albemarle as well as regionally, to Washington D.C. and other regional hubs was also noted. Additionally, the disconnect in regional connectivity such as limited bus and rail options from the Charlottesville-Albemarle region to cities such as Washington, D.C. or other Virginia towns including Blacksburg was recognized.

Trust and Collaboration: Past and Future

The final themes from the interviews focused on the lack of regional collaboration and trust between transit partners, and what this might mean for the future. The University of Virginia, City of Charlottesville, and Albemarle County transit operators have historically been distrustful towards each other. The interviews imply that the power dynamics and imbalances in decision making are a result of a

lack of communication between entities. Coordination in employee payment and benefits is also needed, as CAT, UTS, and Jaunt all have licensed commercial drivers that receive different pay. The interviews posit one shared system as necessary for successful transit in the Charlottesville-Albemarle region. Regular and consistent communication between the CAT, UTS, and Jaunt systems in collaboration with feedback from community members would allow for more efficient planning of transit routes and stops.

Regional Transit Partnership

Many of the stakeholders we interviewed pointed to the Charlottesville-Albemarle Regional Transit Partnership (RTP) as a critical path for moving forward. The role of the RTP is to increase communication and shared decision-making between City, County, UVA, Jaunt and other regional transit entities (figure 4). It allows all parties to build trust and collaborative infrastructure to move toward a joint regional authority without abandoning the individual agencies they currently oversee. While a potential springboard for active policymaking, the RTP is foremost focused on addressing the complex and difficult arrangements between City and County for transit provision.

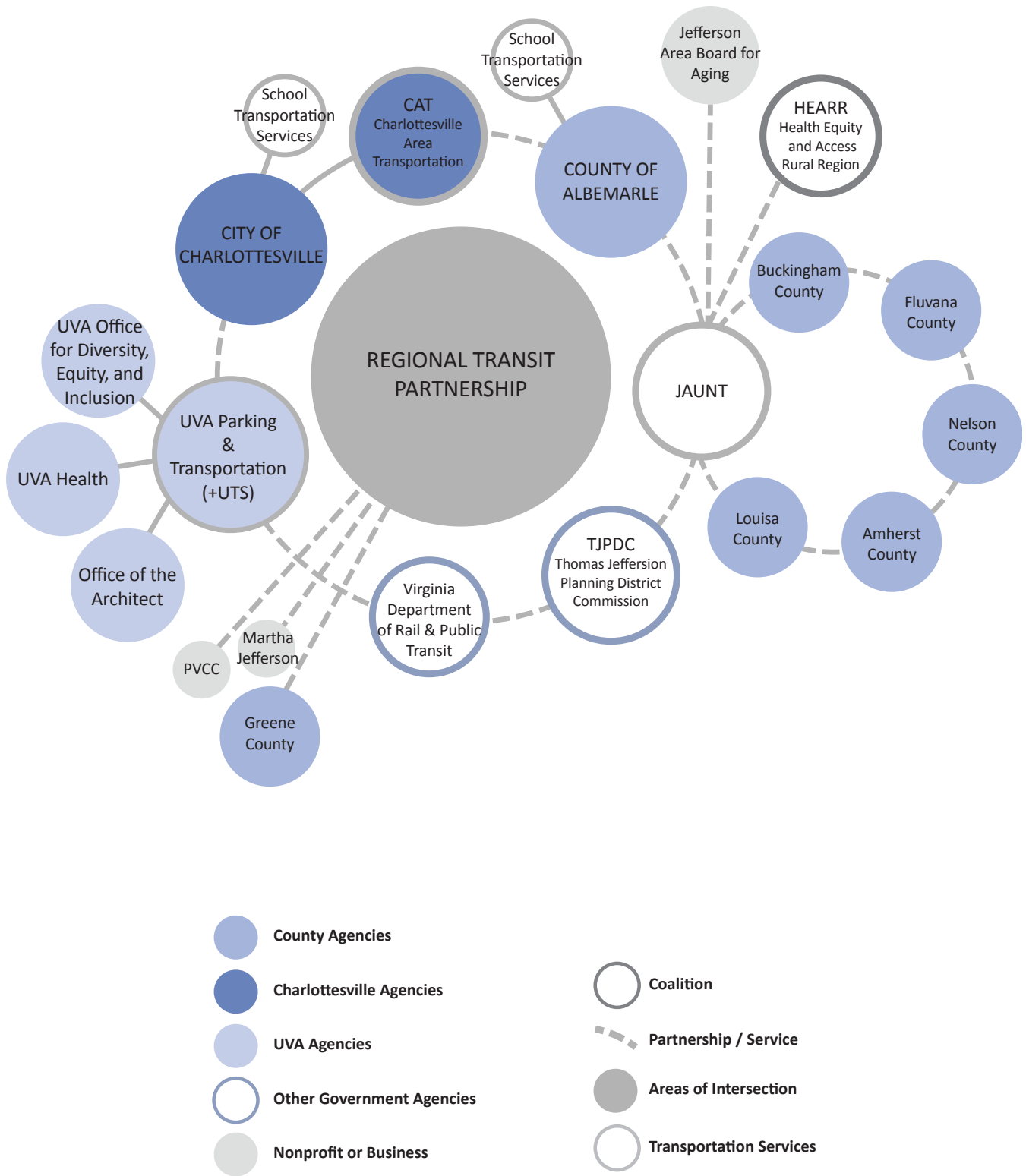


Figure 4. Regional Transit Partnership Actor Network Map

5. DISCUSSION AND SYNTHESIS

Many residents in the Charlottesville region, particularly low-income, underrepresented minority older, rural and immigrant populations, experience barriers to mobility and reduced access to opportunities including jobs, health care, food, and green space. Overall, equitable access in the region is not solely a transit or transportation issue. Instead, equitable accessibility depends on a complex network of interacting factors, that include not only transportation systems but also housing affordability, employment opportunities, infrastructure investment, and other factors that shape daily life and policymaking in the region. Transportation is the conduit to opportunity, and ultimately it helps determine quality of life and well-being for every regional resident.

The experiences of the focus group participants highlighted how transportation systems can fail them, providing reduced choice and service for those with limited resources that further limit their options. Many had the sense that the options currently available do not value or respect them. The maps underscore that some of the most important destinations in the region, whether for employment, goods, services, or health care, are also some of the hardest to reach whether due to a lack of transit, safe connections to home, or automobility that requires resources that many in our region don't have. Agency leaders and other stakeholders are cognizant of these challenges and know there's still a long way to go to address them. With the Regional Transit Partnership as a key piece of the puzzle, they observe that collaboration and trust are essential, across the City, all the Counties, Jaunt, UVA, PVCC, TJPDC and other public and private partners that collectively determine how transportation operates in our region. Better connectivity and accessibility for all will require investment, operational changes, and new policies across all organizations.

6. CONCLUSION

Transportation equity in the Albemarle/Charlottesville region will require a new approach to transportation systems that acknowledges that mobility is embedded in a set of systems that collectively separate many from the destinations they need to reach for work, shopping, health care, recreation, and other facets of daily life. Housing for many lies beyond the reach of frequent transit services or safe bike/ped connectivity but reliable automobility - vehicles, time, parking, or rideshare - costs far more than they can afford. Despite the challenges described by focus group and interview participants, we describe three types of strategy that can help address the spatial mismatch and broader barriers to access in the region: Mobility Practices, Equitable Engagement, and People First Policies.

Mobility Practices

Complement an Expanding Transit Network with On-Demand Transit

Fixed-route transit systems can serve Charlottesville's urban core, as well as transit-oriented nodes beyond the City limits, in Albemarle's growth areas or neighboring counties. Bus rapid transit (BRT) solutions with frequent service can provide the reliability and regularity that lead to long-term choices to use transit and reduce reliance on autos. The region has also made progress in planning and implementing regional transit options: The Virginia Breeze now connects Charlottesville to DC and transit connections to the Shenandoah Valley are under study. In addition, the TJPDC and the RTP have applied for funds to study a comprehensive transit vision for the region, including expansion of transit in Albemarle County. However, much of the affordable housing in the region lies beyond the urban core and dense growth areas. In these areas, on-demand transit options may serve as means of reducing reliance on privately-owned and maintained autos while linking with existing transit programs and operations.

Jaunt is already pursuing a Mobility OnDemand program that innovates by integrating with its existing offerings and by using advanced analytics that can identify critical service areas and direct additional investment to where it is needed most. Jaunt's current on-demand pilots should be supported, and opportunities should be identified to integrate new BRT services with on-demand circulators in suburban and rural parts of the region. At the forefront of these considerations must be rider safety. Safety has been identified as a significant concern amongst those using transit services and those who use automotive transport to work. Ensuring that transit riders are protected by well lit, safe stops, and weather protected enclosures should be considered with current and expanding transit system. Similarly, safety for employees driving during inclement weather and routes from parking lots to building of employment have to be considered.

Community-based mobility

Transportation systems are usually planned and operate as discrete systems that do not often interface with other regional stakeholders, such as housing providers, social welfare providers, and community-based organizations. If on-demand transit is to work, it should be incorporated into key locations, such as community centers and affordable housing developments, where staff can work with residents to enable them to use the system, as well identify efficiencies from shared rides. This would help transportation providers leverage the limited amount of resources they have to engage in customer service and instead focus on maintaining relationships with social service partners. In our region, this could include increased collaboration with JABA, Region 10, MACAA, Yancey School Community Center, UVA and Martha Jefferson Health Care, as well as housing providers such as Piedmont Housing Alliance, Habitat for Humanity, and Charlottesville Regional Housing Authority.

Equitable Technologies

One of the most significant challenges facing transportation providers is increasing reliance on information and communication technologies such as smartphones, apps, and online payment systems. The potential for future automation of transportation systems will only increase reliance on new technologies. However, information and payment systems must be usable by those without access to broadband technologies and credit-based financing, both of which are significantly inequitably distributed in the region. There are two approaches to address this problem. As a failsafe, any new services, including on-demand transit or innovative payment systems should be usable by those who do not have smartphones or online accounts or who are undocumented. Ride reservations should still be possible by phone and working with community organizations could also help provide riders with access to online systems. In the long-run, regional and national policy should emphasize access to technologies, including payment systems, as a right that may best be addressed with universal service policies, such as those historically instituted for telephone service. Without universal service, emerging technologies will reinforce existing inequities in the transportation system.

Equitable Engagement

Inclusive engagement

One of the largest hurdles to managing transportation systems equitably is the relative lack of communication between providers, residents, and other stakeholders in the region. Building on the community-based approach to on-demand transit recommended above, transportation outreach should be reconceptualized as a continuous engagement process that utilizes multiple inputs to keep transit operators apprised of needs and opportunities. An inclusive engagement process would be integrated into ongoing social practices, such as social service and healthcare provision, municipal communications and governance, as well as active engagement with communities that are often not recognized in traditional outreach. The Equity Roadshow undertaken by the Albemarle County Office of Equity and Inclusion exemplifies this type of continuous outreach, and the regional Equity Atlas initiative could serve as an integrated dashboard for transportation issues. Engagement of this type, which specifically seeks to break down barriers between department, agency, and jurisdictional silos, would likely best be implemented through a regional partnership. Transportation issues, as they arise in a continuous engagement practice, could be appropriately directed to transportation planners and operators to use in setting priorities and determining actions.

Prioritize Respect

Part of the equitable engagement ethos includes planning and operating transportation systems in a way that helps users feel like they are valued rather than simply tolerated or an afterthought. The refrain among focus group participants that they did not feel respected came up whether talking about public transit or automobility. Transit systems should place a premium on services that are easy to use, welcoming, and convenient for users. When issues arise, directly acknowledging the issue and informing the customer how that issue is being handled is critical to establish a culture of

respect. Timely communication with riders about changes that will impact their ability to access transportation must be prioritized. The same considerations apply to auto-based transportation systems. As an example, parking options for staff at UVA are often uncoordinated with work schedules and may be priced to manage overall demand without recognizing that salary differentials hinder many employees' ability to get to their jobs reliably. More equitable approaches to parking management should account for the burden of parking as portion of total earnings, as well as addressing off-cycle job hours and the loss of access during special events and activities such as major sports events. In the end, prioritizing a culture of respect in transportation can increase not just the wellbeing of travelers but foster long-term system utilization and sustainability.

People First Policies

Comprehensive Regional Policy

The Albemarle/Charlottesville region's transportation systems are marked by fragmentation. The primary fixed route transit operator is based in the City of Charlottesville but significant growth opportunities for transit lie outside the City boundaries. Paratransit, commuter shuttles, and new on-demand transit are offered by Jaunt. The University operates its own transit system wholly separate from the public operators, and private operators such as Uber and Lyft seek to find profitable niches within the transportation. At the same time, roads and public parking providers are operated by separate departments that do not always have the same objectives as transit providers. This situation is, frankly, not atypical of how transportation systems operate in the US. However, the lack of comprehensive regional transportation policy makes it difficult to put equitable outcomes first and siloes many of the same issues within each agency. Objectives are not set according to what might most benefit specific populations facing significant barriers to access, but rather according to what might maximize usage or profit for a particular system.

The Regional Transit Partnership, as it evolves, should explicitly take on the role of setting regional transportation priorities and objectives that apply across jurisdictions and operators. Some regional planning and policy setting functions do exist through TJPDC's Charlottesville-Albemarle Metropolitan Planning Organization (CAMPO), but they remain primarily systems focused, rather than focused on measuring and setting policy for equitable outcomes. A consistent policy for fare-free transit across City, regional, and University transit options would also significantly expand the usability of the transit system. UVA already provides fare-free transit across UTS and CAT for its staff and students, and expanding this availability of fare-free transit to the community has the potential to not only make the system more accessible but reduce long-term regional costs and impacts from continued capital and maintenance costs for parking and roads.

More broadly, other regional policy issues pertaining to the social determinants of health including affordable housing, economic development, and health care provision need to be actively linked to

transportation systems. A single clearinghouse for analysis, such as the Equity Atlas, may facilitate regional action across silos. Addressing issues such as the spatial mismatch can only happen within a framework that acknowledges where transportation barriers may be more of a symptom of other regional issues, rather than the singular solution to all accessibility challenges.

Participation of UVA

UVA has increased its participation in the Regional Transit Partnership. This action is an important first step in collaborating with public transportation planners and operators. As the region's largest employer, with its own transit system, parking and transportation network, and a very large effect on regional economic activity, traffic, and housing demands, UVA's choices can have a singular effect on the region. UVA's staff, as exemplified in our focus groups as well as by the UVA Staff Senate, are particularly concerned with access from the region to the worksite. Often, this takes the form of worries about parking, but it is within UVA's purview to create new types of regional and internal circulation that make non-auto mobility easiest within UVA and providing affordable parking on the edge of Grounds for those whom local and regional transit are not available. UVA's recent Transportation Plan recognizes many of these issues, and future development on and around Grounds should address some of these issues.

Beyond these internal actions, UVA should be more engaged in and supportive of efforts to develop regional solutions for mobility and access, which will serve its employees and the entire community. UTS currently serves a student-centric population, but the complex interactions between UTS and CAT regarding fixed-route transit provision, include problematic rules about who can use what system, even when UTS may be useful for a local resident. Even though it may require a significant conceptual shift, UVA should remain open to ideas that effectively integrate fixed-route transit in the region, so as to gain overall efficiencies and provide more choices to more regional residents. Importantly, the Commonwealth's recent agreement to purchase the Buckingham Branch rail line means that the site at the corner of Emmet and Ivy becomes the intersection of the region's major N-S corridor along US 29/Emmet and a potential future E-W transit corridor along or alongside the Buckingham Branch. This type of regional thinking at the local scale will be necessary if the region is to address its dependence on an already-maxed-out auto-based transportation system.

Investing in Infrastructure and the Bike/Ped Network

Even with increased focus on on-demand transit, fixed-route transit services will remain the backbone of public transportation in Charlottesville. Getting to fixed-route transit requires some type of "last mile" transportation and walking and biking are most often the modes used. The region's network of sidewalks and bike facilities is significantly underbuilt, resulting in many of the safety worries of the focus group participants. Without a doubt, the region is seeking to make progress in this area, but investments in auto-based transportation still far outweigh investments in sidewalks

and bike facilities. Investing in a bicycle and walking network throughout the region is not just a recreational imperative but can reduce barriers for all, if investments focus on critical nodes and pathways for the most isolated.

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REFERENCES

- Bircher, J., & Kuruville, S. (2014). Defining health by addressing individual, social, and environmental determinants: New opportunities for health care and public health. *Journal of Public Health Policy*, 35(3), 363–386. <https://doi.org/10.1057/jphp.2014.19>
- Blumenberg, E., & Agrawal, A. W. (2014). Getting Around When You're Just Getting By: Transportation Survival Strategies of the Poor. *Journal of Poverty*, 18(4), 355–378. <https://doi.org/10.1080/10875549.2014.951905>
- Blumenberg, E., & Ong, P. (2001). Cars, Buses, and Jobs: Welfare Participants and Employment Access in Los Angeles. *Transportation Research Record*, 1756, 22–31.
- Bureau of Labor Statistics. (2019). *Consumer Expenditures in 2018: BLS Reports: U.S. Bureau of Labor Statistics*. <https://www.bls.gov/opub/reports/consumer-expenditures/2018/home.htm>
- Fan, Y. (2012). The Planners' War against Spatial Mismatch. *Journal of Planning Literature*, 27(2), 153–169. <https://doi.org/10.1177/0885412211431984>
- Hacker, K., Chu, J., Leung, C., Marra, R., Pirie, A., Brahim, M., English, M., Beckmann, J., Acevedo-Garcia, D., & Marlin, R. P. (2011). The impact of Immigration and Customs Enforcement on immigrant health: Perceptions of immigrants in Everett, Massachusetts, USA. *Social Science & Medicine* (1982), 73(4), 586–594. <https://doi.org/10.1016/j.socscimed.2011.06.007>
- Jansuwan, S., Christensen, K. M., & Chen, A. (2013). Assessing the Transportation Needs of Low-Mobility Individuals: Case Study of a Small Urban Community in Utah. *Journal of Urban Planning and Development*, 139(2), 104–114. [https://doi.org/10.1061/\(ASCE\)UP.1943-5444.0000142](https://doi.org/10.1061/(ASCE)UP.1943-5444.0000142)
- Levinson, D., & Krizek, K. (2005). *Access to Destinations*. Elsevier.
- McAndrews, C., & Marcus, J. (2014). Community-Based Advocacy at the Intersection of Public Health and Transportation: The Challenges of Addressing Local Health Impacts within a Regional Policy Process. *Journal of Planning Education and Research*, 34(2), 190–202. <https://doi.org/10.1177/0739456x14531624>
- Thomas Jefferson Planning District Commission. (2019). *Charlottesville/Albemarle MPO 2045 Long Range Transportation Plan*.
- UVA Community Working Group. (2019). *University-Community Survey*. <https://communityworkinggroup.virginia.edu/>
- Wallace, R., Hughes-Cromwick, P., Mull, H., & Khasnabis, S. (2005). Access to Health Care and Non-emergency Medical Transportation: Two Missing Links. *Transportation Research Record*. <https://doi.org/10.1177/0361198105192400110>

APPENDIX A: FOCUS GROUP GUIDE

QUESTIONS

- Could you tell us about the way in which you get around this community? What is it like for you getting from place to place, like work, shopping, healthcare, schools, entertainment?
 - oWhat do you most need transportation for? And what do you least need transportation for?
 - oDoes anything work well for you / your family?
- What is the hardest thing about getting around this community? How do you typically deal with these issues or obstacles?
 - oHow has your transportation experience changed in recent years? How does that impact where your daily life? Does this cause you stress?
 - oDid you use to take public transit? Do you now?
- What transportation needs do you have that are not being met? Why are they not being met and what needs to happen in order for you to be able to meet those transportation needs?
- Have you considered using other transportation methods, such as Uber, carsharing, or bike / scooter sharing? If you have used them, what has the experience been like and would you use them again? If not, why have you not considered using these options?
 - ols access to the Internet, cell phone, or bank card a barrier to using these services?
- If the Mayor asked you what could be done to make your transportation experience in the city better, what would you tell her? How would these changes be helpful for you or your family?
- Is there anything else you would like to share about your experiences that we haven't asked but would be important for us to know?

APPENDIX B: STAKEHOLDER INTERVIEW QUESTIONS

1. Tell me about yourself: Title, length of service, previous experiences
2. Could you tell me more about your organization—mission, goals, services, and priorities?
3. Could you tell us about the users of your services? What is your understanding of their transportation needs? (FQ: current uses??)
4. What are some of the strengths of your current transportation system? What's working well?
5. What are the limitations/challenges/barriers to your service provision? (FQ: Why?)
6. Are there plans to address these needs? and if so could you tell a bit more about those plans?
7. Are there any specific policy considerations that impact your ability to deliver services now and in the future? (FQ: what policy/planning reform is needed?)
8. If there were no obstacles, what is your ideal vision for transportation in our region—in both the short and long term?
9. Given the future direction of transportation advances, how do you think this might affect your delivery of services? What challenges and/or opportunities would these innovations create? (Prompt w ex if needed: such as carsharing, uber, parkmobile, eventually AV)
10. Is there anything else you'd like to share that we haven't asked?

APPENDIX C: FOCUS GROUP THEME

Table 1. Focus Group Themes and Subthemes		
Themes	Points	Subthemes
<p>Respect</p> <p><i>Does the transportation systems I use treat me humanely and give a sense that I am a valued consumer?</i></p>	<ul style="list-style-type: none"> -Respect as person -Riders' expectations of how they should be treated -Equity -Treatment of riders and discrimination -Lack of professionalism -Principles of Good Transit: <u>respect me</u> -Multiple dimensions of respect does not end with the transit; 	<p>Respecting my time</p> <ul style="list-style-type: none"> -Length of time of routes -Efficiencies of routes -Responsive to needs of riders not the other way around -Directness of routes from point A to point B (T125) -Communication about routes and stop changes -Affordable parking far from job site, no connects when needed (such as early morning) <p>Respecting people</p> <ul style="list-style-type: none"> -Some drivers treat passengers rudely -Our concerns aren't heard
<p>Capacity and Coping</p> <p><i>How do I cope with my travel needs on a daily basis?</i></p>	<ul style="list-style-type: none"> -Rider experiences; finding solutions on their own; consequences -Convenience for all peoples work hours -Who are we catering certain parts of the city/county/UVA and certain class of workers 	<p>Stress and personal impact</p> <ul style="list-style-type: none"> -Trying to do the minimum -Exhausting <p>Coping</p> <ul style="list-style-type: none"> -Wait a long time for unreliable service -Trying to keep car maintained -Just don't go out
<p>Accessibility</p> <p><i>How do the structures and systems that comprise the transportation network enable or create barriers to access?</i></p>	<p>System Operations</p> <ul style="list-style-type: none"> -Considering physical abilities -Walking infrastructure -Connecting community -Commuting from county -Around UVA -Schedules - Disappearance of bus stops <p>Financial Access</p> <ul style="list-style-type: none"> -Parking (costs, access) -Costs of owning a car -Inaccessibility of taxis and Uber -Cost of smartphones/IT 	<p>Secondary access effects</p> <ul style="list-style-type: none"> -Personal transportation versus public need for equity in both spaces -Social status considerations -Undocumented/lack of drivers' licenses -Language barriers -Impact on refugee populations
<p>Safety</p> <p><i>Is this system safe for me to use?</i></p>	<ul style="list-style-type: none"> -Location of stops -Lack of sidewalks, crosswalks, and stoplights -Lighting of stops -Expectations of employees (i.e. personal safety vs incurred risk of getting to work) 	