

Electric Transportation Equity in the Valley

Team TEA

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Transportation Electrification Activator

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Caption: The above picture is a person at a transit stop surrounded by vacant lots and lack of shade, which both decrease air quality and extreme heat. This picture demonstrates the interlocking systemic impacts that coincide with transportation.

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Executive Summary

The Transportation Electrification Activator (TE Activator) was created by Salt River Project (SRP), a regional power/water utility, and Anthesis, a sustainability consulting agency. The Activator's mission is to “electrify transportation in a manner that optimizes community benefits, maximizes investment efficiency, and achieves transformative results...[with a focus] on cross-industry collaborative action aimed towards a region with clean air, accessible electric transportation options, and robust electric vehicle infrastructure” (TE Activator, 2021). With this mission, they have asked Team TEA to focus on making this transition equitable and inclusive.

The equitable implementation of electric vehicles (EVs) is deemed a challenge due to high upfront costs, high costs of insurance, and lack of affordable new or used EVs (Glandorf, 2020). However, there is a systemic gap that calls for institutions to listen to directly impacted communities to properly scope this challenge and determine the actual barriers to implementation. An important consideration for historically underrepresented communities is that alternative methods of transportation are more heavily relied upon than single-occupancy vehicles (SOVs), thus requiring an analysis of all transportation methods (FTA, 2013). Significant risks, exacerbated by climate change and the current transportation structure, include a warmer climate and worsening air quality that will continue to disproportionately impact low-income and Black, Indigenous, People of Color (BIPOC) communities in the greater Phoenix area (Maricopa County Public Health, 2020). Moreover, these communities have historically benefited less from an EV transition, whether it be financial barriers created by high cost of ownership, missed government tax breaks, or lack of entry in the electric transportation (ET) job market. Therefore, there is a great sense of urgency to evaluate potential pathways that would best aid in the transition to ET for these underrepresented communities. Further, there is a need to look at the bigger picture of these culminating disparities and analyze if transportation is even seen as a priority, compared to other focuses, for the communities we aim to serve.

To aid this transition, we detailed the current state of electric transportation nationally and locally, analyzed equitable EV/ET programs and utility plans across the country, reviewed the City of Tempe's electric transportation related efforts, conducted listening sessions with a national expert, the City of Tempe, Tempe Community Action Agency and CHISPA AZ, and created a Community Listening Pilot Project based on these listening sessions. Through our research, listening, and discussions, we compiled tiered recommendations for the TE Activator with systemic policy changes based on community priorities. Our report and recommendations culminate in an Equity Roadmap, which will serve as a high-level summation of this report. The Roadmap details the Community Listening Pilot Project and potential recommendations for the TE Activator. We have also created a Community Listening Script to be utilized in future listening sessions and a one-page brief as an overview of the overall project and deliverables

With the TE Activator's intention of continuing this community engagement well into the future, the Community Listening Pilot Project can be used to continually revisit the problem framing as they transition to ET. Thorough collaboration, centered around empathy and listening, is the only feasible route to develop transportation equity solutions that serve historically underrepresented communities (Livingston, 2020).

Key words: Electric Vehicles (EVs), Electric Transportation (ET), equity, historically underserved/marginalized communities, multi-modal transportation network, Asset-Based Community Development (ABCD), Mobility Equity Framework, Love-Based Aid, “5 P” Engagement Framework, Spectrum from Community Engagement to Ownership

Introduction

The electric transportation (ET) and electric vehicle (EV) landscape is currently inequitable and inaccessible for many living in the Phoenix area. This is especially true for people without single-occupancy vehicles (SOVs), who are reliant on public transit, or do not live in the Metropolitan center. Transit is intricately related to the environment and, due to societal and political structures, most of these environmental injustices, deriving from traditional combustion vehicles, are concentrated in low-income and Black, Indigenous, People of Color (BIPOC) communities. The lack of political representation within these communities has led to increased exposure to a variety of issues. Equitable transportation has also suffered due to a significant gap in addressing the needs of these underserved communities (Bolin, et al., 2005). The concentration of inequities and environmental injustices is a direct result of the lack of representation. Therefore, equitable and inclusive collaboration on solutions is required in order to maintain fairness and access, (Clement, 2020) considering the legacy of institutional harm within historically marginalized communities.

In the current state, there are no clear ET pathways for historically underrepresented communities that ensures an equitable transition. While there are organizations working on equity within their communities, there is a lack of direct collaboration between institutions, organizations, and community members to develop effective and equitable solutions that work alongside their assets and with their identified needs.

The TE Activator was created by Salt River Project (SRP), a local water and power utility, and Anthesis Group, a sustainability consulting agency. The Activator is a group of Phoenix-area organizations interested in shaping the ET landscape to positively influence the well-being of Arizonans. It is made up of two groups - practitioners and supporting partners (TE Activator, 2021). Practitioners are in charge of the tangible transition towards electrification in terms of investment and built environment changes. While the supporting partners' (community members and organizations) role is to share their perspectives and provide honest feedback for the practitioners.

The TE Activator is looking to collaboratively create a strategy for ET that brings inclusive solutions to the Valley with the mission to “electrify transportation in a manner that optimizes community benefits, maximizes investment efficiency, and achieves transformative results...[with a focus] on cross-industry collaborative action aimed towards a region with clean air, accessible electric transportation options, and robust electric vehicle infrastructure” (TE Activator, 2021). Within this mission, they have asked Team TEA to focus on how to make this transition equitable and inclusive.

To do this, Team TEA has come up with a number of deliverables. First, this report, which gives an in-depth national, regional, and local lay-of-the-land for electric transportation equity, through our own research and listening. This report details the current state of transportation in Arizona, and then dives into national examples that demonstrate how these issues have been tackled by other cities, states, and utilities across the country. Following, we narrow the scope by discussing Tempe's history with transportation-related policy and programs to understand what has already been done and what they are currently doing. We then focus on local community organizations and the work they do with historically marginalized communities. Within the national, regional, and local sections we conducted listening sessions with leaders and incorporated their input and

feedback. We then ground this work through the Community Listening Pilot Project, which details an engagement framework that can be led by the TE Activator going forward. In the Project Processes & Emerging Conversations section of this report, we detailed our reasoning for how and why we went about this process and the need for a slow, intentional approach to equity work that shifts power to communities. Finally, we include tiered recommendations based on our research and listening.

Along with the report, we have several accompanying deliverables. The first is an Equity Roadmap, which is a high-level summary of the contents in this final report, including the Community Listening Pilot Project and our tiered recommendations. Next is a Community Listening Script, which details the wording and questions that can be asked in future listening sessions. We have also included a one-page brief that can be utilized by TE Activator partners to get an overview of this project and the key deliverables. All of these deliverables will articulate possible pathways towards reaching their proposed goal of equitable ET transitions, by providing strategies and reflection as they craft their community collaboration.

Some aspects of this report may be uncomfortable, but having these conversations are critical. We ask that as TE Activator partners read this report, and begin socially-embedded equity work, that there is a focus to “...try to stay in the uncomfortable feeling and listen to the points raised, rather than shutting the conversation down, leaving the room, reacting defensively, making excuses or jokes, or shifting the discussion to your feelings of hurt... [in short] step back and decentre yourself” (Creative Equity Toolkit, n.d.).

Positionality Statement

Land Acknowledgement

As many of us are descendants of settlers, immigrants, or descendants of those forcefully brought to this continent, we must recognize and never forget that we occupy the unceded traditional and contemporary homelands of those Native American tribes that have inhabited this land for centuries. We also have a responsibility to acknowledge and pay respect to the Indigenous elders and Knowledge Keepers – past, present, and future – whose stewardship and love of these lands and all its beings allow us to be here today.

While acknowledgement means little unless coupled with meaningful action, we must all recognize our full, true history before we can move forward, and must educate ourselves on our responsibilities to one another and the land.

Personal Identities

We are a team of five graduate students with varying backgrounds, values, and beliefs.

Grace Logan is a white, agender 22-year-old that was born and raised in the Phoenix Valley north of Van Buren, the historical segregation line, on Akimel O’odham and Piipaash lands. After being a volunteer lead in a garden that was eventually gentrified out of Roosevelt Row, Grace now primarily focuses on how sustainability can be seen as a philosophy, applied moral psychology, and path towards abolition to culturally and institutionally shift away from white supremacy paradigms and structures, with an emphasis on food justice and community governance.

Anna Bartholomew is a white, cisgender female 24-year-old that was born in Dallas, Texas and now lives in Mesa, Arizona on historically Yavapai Apache, Western Apache, and Piipaash lands. Anna came to Arizona to study sustainability at Arizona State University. Anna's view of sustainability has been shaped primarily around the impacts of human activities to the environment and in turn how it has impacted human health. As water is a complex essential resource which we all depend on, Anna has focused primarily on water resource management throughout her undergraduate degree and into her graduate studies.

Kaleigh Shufeldt is a white, 29-year-old, cisgender female, that was born and raised in Paradise Valley, Arizona, on Akimel O'odham lands. Kaleigh is focused on community wealth building and the intersection of sustainability, environmental and social justice, and food security and sovereignty. She believes that to create an equitable landscape and future, grassroots movements and community engagement is the way forward.

Raven Fielding is a white, 23-year-old, cisgender female born and raised in Phoenix, Arizona on Ak-chin tribal lands. Appreciation for nature, learning the intersectionality of environmental protection and injustices occurring on a local and global scale, has shaped Raven's view on sustainability and intersectional justice in her graduate work.

John Stivers is a white, 24-year-old, cisgender male born in Pebble Beach, California. John has spent the last two years in Arizona completing his Masters in Sustainability from Arizona State University. Growing up, John spent time in nature and saw the importance of environmental conservation and how it can not only affect the natural world but the community as well. John has studied and interned in the energy sector and hopes to continue applying sustainable principles to an energy transition. John believes that sustainable innovation, if done correctly, can improve the environmental, economic, and social aspects of our communities.

Although representing different class, age, and gender communities, we all hold white privilege, speak English as a first language, and have the ability to gain a graduate-level education. By acknowledging our personal intersectionality (Appendix 1), we can better understand the biases and power we individually and collectively have when navigating academic and community spaces in this work. Specifically for this project, our intersectional identities create blindspots and opportunities in our equity analysis that we wanted to openly acknowledge.

However, we each have our own mind maps and experiences that have molded our perception of sustainability. A collective belief this group holds is that social sustainability must be central to overall sustainability processes, but this integration requires a slow, intentional, reflective, and observational effort.

Our Project Role

As social sustainability advisors for the TE Activator, we researched, listened, and detailed how transportation electrification can be more equitable for everyone living in Arizona. Over the past eight months, we have been meticulously evaluating and re-evaluating the best method to approach communities that would produce beneficial, long-term relationships in regard to ET. However, we must acknowledge the pertinent priorities of these communities, and electric

transportation is not one of them. Navigating the unique and differing intentions of the various organizations, communities, and individuals has been challenging, but has stimulated conversations on the opportunities to achieve each stakeholder's goals collaboratively. We hope that our contributions will stimulate and inform long term relationships, which produce beneficial and sustainable outcomes for all stakeholders.

Current State

The current state of disparity is accompanied by a great sense of urgency across Arizona in environmental, economic, and societal spheres. The present has been dictated by the inequitable conditions where historically underrepresented communities face excessive barriers that severely curtail low-income and BIPOC communities ability to secure water rights, control or regulation of land use, and effective political representation (Pope, 2014). In relation to transportation, vehicular emissions intensify the urban heat island effect (EPA, 2015) and contribute to worsening air pollution that is predominantly worse in low-income, BIPOC communities. In 2020, the National Weather Service set an unprecedented record by issuing 12 excessive heat warnings that lasted for about 48 days, shattering previous annual records. Many of the heat-related deaths were disproportionately represented by BIPOC (Maricopa County Public Health, 2020). Therefore, there is a dire need to reduce air pollution and minimize activities that increase heat, such as the dependency centered around the fossil fuel industry for combustion engine vehicles. However, to achieve long-term significant environmental improvements with ET, it must be widespread and implemented in regions that can benefit the most from it (Greenlining Institute, 2011).

Aside from local governments passing policy for EVs and ET, there is the undeniable fact that this switch is not addressing global energy dependencies fueled by environmental exploitation. The secondary environmental impacts of increased EV adoption will have significant effects on natural systems and human health in general, but posing specific threats for Indigenous communities (Martin, 2021). The mining, manufacturing, and disposal of nickel, cobalt, lithium and other materials used for battery technology uses substantial energy, extracts valuable resources from the Earth, and pollutes freshwater resources (Brennan, 2016). As batteries corrode, the chemicals will soak into aquifers and other freshwater supplies, disrupting flora and fauna and causing significant human health problems. In fact, a 2015 EV generates enough human toxicity potential to impact human health 20 days from either death or disability, while a traditional combustion engine only generates enough for 6 days (Brennan, 2016). Therefore, as we transition, research into sustainable mining practices for battery materials and the impact to human health is critical to creating a fully sustainable system from top to bottom.

Throughout Arizona, many organizations have mobilized to achieve this electric transportation transition. With the creation of the Transportation Electrification Activator, various municipalities have come together to focus on this goal, such as the City of Phoenix, the City of Mesa, and the City of Tempe. Many of the goals emphasize electric vehicle adoption, installation of charging stations, electrifying public transit, overall reduction of miles traveled, and the electrification of the cities' fleets (Salt River Project, 2021; TE Activator, 2022). In December 2021, the Arizona Corporation Commission approved "the final phase of a comprehensive Transportation Electrification Plan that aims to foster electric vehicle use, charging infrastructure development, and innovative rate designs for electric vehicle (EV) charging" (Basinger, 2021).

This approval further reinforces that regulated utilities must report “ongoing comprehensive plans at least every three years and report annually on their progress” (Basinger, 2021).

Electrification has been implemented in some capacity across 50 countries, which includes scooters, buses, bicycles, and mopeds (IEA, 2020). The primary driver for adoption of electric forms of transportation originates from local governments, as it maintains significant influence over the adoption of electric modes of transportation in regards to affordability and accessibility. Despite national and international motivation to electrify modes of transportation, the local governments must maintain the same level of motivation and possess adequate budgetary funding to implement these desired changes. Budgetary shifts would then require a local shift in city council priorities or alternatively be supported through federal funding.

Regional Current State & Electric Transportation

The Greenlining Institute has centered equity within the transition of electric transportation and has called attention to these barriers within BIPOC communities in their 2011 report, *Electric Vehicles: Who's Left Stranded*. The report emphasizes that, despite underserved communities having the most to benefit from an electric transportation transition, they “may get relatively little benefit from EVs, which are often seen as expensive and unattainable” (Greenlining Institute, 2011). For example, although white Californians make up 40% of the population, 70% of hybrid owners were white in 2019, thus exposing the severe inequities and inequalities tied to gentrification and the exacerbation of harmful institutionalized policies that have persisted for generations (Fuels Institute, 2021). Using census block data in California, it was found “...that public charger access is lower in block groups with below-median household incomes and in those with a Black and Hispanic majority populations” (Hsu & Fingerman, 2021). EV gentrification is where areas of historical disinvestment have “...little to no charging infrastructure for electric vehicles...[on top of the reality that there is not] a place to park and charge overnight...” if they don't own their home or live in multi-family housing (TE, 2021). Considering “...neighborhood[s] now lacking charging stations [were] once devoid of groceries as well...” the switch to EVs without acknowledging price and accessibility of EVs and their charging stations is recycling the same oppressive structures within a new dynamic (Walling, 2021).

The Greenlining Institute goal is “to encourage policy discussions’ around electric vehicles’ impacts and deployment plans in these communities, to raise the urgency and timeliness of these discussions, and to create policy solutions that address the concerns of these communities” (Greenlining Institute, 2011). If these systemic issues are not addressed, communities will lose mobility and access to the transportation network, therefore alternative and feasible solutions must be considered for those who can't have EVs.

Electric Transportation Across the U.S.

There are numerous examples of cities, states, and communities implementing EV policies and strategies. Our team begins by focusing on national examples of equitable ET adoption to gather a deeper understanding of the best methods that are being evaluated and utilized across this scale.

National Listening

Our team interviewed Kelly Blynn, the current Transportation Climate Change Specialist at Colorado Energy Office, to better understand the ET movement and goals across the country. Blynn has an extensive background in not only EVs, but community and city organizations. When she worked as the Electric Vehicle Technical Strategist for the National Resources Defense Council, Blynn drafted and led the development of the Boston ZEV Roadmap, Pittsburgh Public EV Charging Strategic Plan, and Orlando Electric Mobility Roadmap (City of Boston, 2020; City of Pittsburgh, 2020; Florida Department of Agriculture and Consumer Services, 2020). She also led policy development, technical analysis, and stakeholder engagement for EV readiness ordinances in St. Louis, Indianapolis, Orlando, and St. Petersburg (Blynn, listening session, 2022). Due to her work on the national level, she is an insightful resource to learn more about the opportunities and challenges ahead.

There are a few key takeaways from our interview with Blynn. One, there is a big opportunity in how we navigate the EV transition involving engagement, community participation, and ownership of the shift to an ET system. Not only can we be more efficient and environmentally friendly, but also take into consideration the whole distribution of cost effectiveness for all communities and equity. What Blynn herself found exciting about the transition is how to ensure that the benefits can be experienced by communities that have felt the burden historically from transportation projects. There are a lot of barriers and complications, such as technology, education, infrastructure, and up-front cost and maintenance issues. Additionally, it is difficult to engage different entities, foster connections that aren't already there, and facilitate the discussion of complicated information that isn't easily digestible. Overall, every situation and project is different, so there isn't a one size fits all approach (Blynn, listening session, 2022). That being said, there are a few examples from which we can pull from to help us in our project.

In this interview, there was an emphasis that electrifying our transportation system is an important strategy to address climate change and air quality, but this must be in tandem with investments with multi-modal transportation options, such as public transit, biking, and walking infrastructure. Therefore, she believed the strategy lies with electrifying the vehicles on the road, while also focusing on increasing accessibility in the wider transportation network. With the help of Kelly Blynn our team was also able to identify a couple of projects in St. Louis, Berkeley, and other national examples that we believe are applicable to EV adoption in Phoenix, and can help us move forward.

St. Louis

In February 2021, St. Louis Mayor Lyda Krewson signed an executive order that formally began the EV transition for the city fleet. It also involved a significant ramping up of city infrastructure and charging stations, leading to a positive externality of wider adoption. The executive order and implementation guide were led by key stakeholders, including but not limited to Mayor Krewson, Sustainability Director Catherine Werner, Commissioner of Equipment Services Christopher Amos, Commissioner of Facilities Management Rick Ernst, and Transportation Policy Planner Scott Ogilvie. The initiative was also supported by NRDC and the Electrification Coalition. A key development for St. Louis was their SILVERS (Sustainable electric vehicle shuttle program for seniors) program, which was implemented by the Forth advocacy group. The initiative aims to serve historically underrepresented communities with EV technology to offset

fossil fuel-powered outages and emissions, furthering the City’s overall sustainability goals. Besides city leaders, the St. Louis project incorporated a community organization in their deliberations. The organization has slightly different transportation needs than city officials and the original stakeholders, and their voice was invaluable in developing the project concept and securing funding. The project supported adding electric vehicles to existing community transportation services that provide rides and deliveries to low income communities in the city, while also offering access to the chargers for those vehicles to the surrounding community (NRDC, 2021).

Berkeley

Another great example of incorporating different voices into a project was during the creation of Berkeley's Electric Mobility Roadmap (Berkeley, 2020). Historically, the city of Berkeley has been met with many challenges from a social and economic perspective. Therefore, implementing an EV adoption roadmap that addressed real community transportation needs was a challenge, as historically disadvantaged community members didn’t necessarily see vehicle electrification as a top priority. One thing city leaders did in Berkeley was listen to community members that were historically disproportionately impacted but not represented in past projects and processes. As a result, the roadmap centered more equitable approaches to transportation electrification options in the city (Blynn, listening session, 2022).

States/Utilities

Colorado is a great measuring stick for EV policies and programs. For example, their Colorado eBike Fall 2020 and Spring 2021 Pilot Program addressed alternative solutions to emissions and affordable mobility in lower socioeconomic communities. The Colorado Energy Office (CEO) committed \$500,000 for the Fall 2020 initiative, which gave 13 low-income essential workers in the greater Denver area a Momentum LaFree E + eBike (Class 1), helmet, pump, lock, lights, and more at no cost. It has since grown, as the Spring 2021 program deployed 156 eBikes throughout the State of Colorado, with another 25 planned in Spring 2022, and 50 eBike share memberships. The program is also a success in terms of state and local coordination. The Spring 2021 program was accomplished with the help of 5 local community and city organizations (Colorado Energy Office, 2022).

Moreover, Xcel Energy in Colorado offers a unique case study into utilities' role in supporting EV adoption and implementation. Xcel’s Transportation Electrification Plan (TEP) comes in the wake of the state setting a goal of 940,000 EVs on the road by 2030 and implementing several complementary policies and programs to establish itself as a national leader in electric transportation space. The Colorado legislature has highlighted the importance of utilities in helping Colorado reach their goals with the SB 19-007 Bill. Xcel will assist by “fostering greater awareness of the opportunities and benefits of electric transportation; reducing barriers to adopting electric transportation; increasing access to the benefits of electric transportation; encouraging innovation, partnerships, and collaboration and encouraging EV charging in ways that reduce system costs and enable their vision to realize a 100 percent carbon free grid” (Xcel energy, 2021).

In terms of equity, Xcel Energy has incorporated multiple strategies to support low to moderate income households. This comes in the form of subsidies and support for family charging in low and moderate income households, rebates for EVs and charging, but only for low and moderate

income households. Xcel's TEP also boasts plans to increase the used EV market, which will inevitably drive down prices and make EVs more accessible to all income groups. These plans are similar to California's Public Utility Commission's (CPUC) goals to support all zero-emission vehicles by 2035 and 250,00 EVs by 2025. To help support this, utilities in California will offer numerous incentives to make EVs more affordable. This includes:

- Low-Carbon Fuel Standard (LCFS) Rebates
- Utility Shareholder-Funded Incentives: SDG&E offers a \$1,000 point-of-sale rebate to eligible teachers and first-responders in its service territory through its Champions For Clean Air program.
- State vehicle rebates: Customers that purchase or lease an electric vehicle may be eligible for rebates through the Clean Vehicle Rebate Project. This program has issued more than \$823 million in rebates since the program started in 2010.
- Visit Drive Clean for clean and efficient vehicles to identify additional incentives (CPUC, 2022)

Social and Technological

From our interview with Kelly Blynn looking at examples from the city, state, and utility levels, it's clear to see there's a dynamic between the social and technological side of infrastructure development. From a societal perspective, the coordination of multiple groups from state legislators to energy suppliers and community led organizations, there is an opportunity to have a clear and concise EV program that incorporates all community perspectives. From a technological side, there's a big barrier in advancement to charging infrastructure for multi-family homes as well as affordable, low-cost vehicles for low-income peoples. There are, however, some great examples from used EVs to utility rebates, and other forms of electric transportation that can be implemented for feasible, equitable EV adoption.

City of Tempe's Electric Transportation Plans

Focusing in from the national lens, we analyze how transportation plans in Tempe have recently centered equity. The City of Tempe is a prime example of a city in Arizona making significant strides towards electric transportation.

Regional Listening

To get a better sense of the City of Tempe's current electric transportation plans, our team interviewed Brianne Fisher, City of Tempe Climate Action Manager. Brianne Fisher believes that ET is a great way to reduce greenhouse gas emissions. She stated that transportation equity, to the City of Tempe, includes a variety of accessible options that meets the needs of the individual within the community (Fisher, listening session, 2022). For their community, Fisher envisions the neighborhood children being able to walk to school comfortably, the senior residents utilizing the Tempe Streetcar or Valley MetroRail (light rail), and a seamless connection of diverse mobility options. Fisher also hopes that the Tempe's Orbit Shuttle Bus will become more widely utilized by all of Tempe's residents, as it is a free bus shuttle service (Fisher, listening session, 2022 and City of Tempe, 2022). One of the significant barriers for increasing ridership is the lack of cooling and shading along these transportation routes.

The City of Tempe conducted an analysis in order to achieve their Carbon Neutrality Goal by 2050, transportation emissions must be reduced by 91% and discovered that the transition to electric vehicles would produce the largest impact to achieve this reduction (Fisher, listening session, 2022). To financially accomplish this, there would need to be an estimated investment of \$36 million for supporting infrastructure, education and programs throughout 2050, which equates to annual investment of \$3 million until 2050 (Fisher, listening session, 2022).

In regard to our project, Fisher pointed to significant opportunities, such as the involvement and interest the private sector shares around electric transportation, availability of regional funding, and federal funding through the Federal Infrastructure Jobs Act (Fisher, listening session, 2022). Despite these regional and federal resources that can contribute to the TE Activator, localized projects must also be prioritized as it can more closely analyze the specific needs of each community and the variety of other needs that may or may not be related to transportation.

In this interview, there was an emphasis on how this strategy was both politically feasible and a means to reduce transportation emissions. She saw the ability for municipal governments, the private sector, and utilities to partner in ET solutions as an asset to reach sustainable transportation goals, such as increasing charging stations and re-evaluating infrastructure changes to allow more public transit. When working with the community, Fisher reaffirmed that better ideas and outcomes will occur when more diverse voices are included throughout the process. In their experience of developing relationships with the community, the community organizations that have expressed interest in this project ought to develop guiding principles on how they would like to be partnered with (Fisher, interview, 2022).

City of Tempe Policy & Programs

As the city continues to rapidly develop, the urban density places pressure on Tempe's car-centric culture. In the city's 2019 Climate Action Plan, Tempe included equitable approaches that place underrepresented groups as first to be considered when developing programs and policies for the city. The plan also incorporated "targeted universalism, which means pursuing policies and programs that are targeted at underrepresented groups" to produce benefits for all (City of Tempe, 2019). With these equitable approaches in mind, and when connecting it to the transition to electric transportation, the City of Tempe 2020 Annual Report emphasizes that the measurements of the City's Transportation Electrification Goal are based on carbon neutrality, achieving a 20 minute city, monitoring traffic delays, and evaluating the overall satisfaction with the transit system (City of Tempe, 2020). With 43% of emissions coming from transportation alone, it is imperative for the city's future to reduce emissions within the transportation system (City of Tempe, 2020).

As one of the founding partners of the TE Activator, the City of Tempe has announced plans to "double the number of charging stations throughout the community by 2025," as well as "developing additional transportation electrification targets" by the end of 2022 (TE Activator, 2021). The City of Tempe has also added 20 electric vehicles to their municipal fleet, has installed 35 electric vehicle charging stations at city facilities, and all buses are either hybrid or utilize alternative fuels. The completed electric vehicle feasibility study will be utilized to guide future implementation actions (City of Tempe, 2022). The next steps, as highlighted in the Tempe Annual Report, focus on continuing to pursue their goal of creating a 20-minute city,

expand upon the streetcar in collaboration with Valley Metro and the City of Mesa, and continue their transition of the City Fleet of Tempe to electric vehicles accompanied by charging stations (City of Tempe, 2020). Tempe’s Orbit Shuttle Bus and Flash buses are also switching to alternative fuels that is accompanied by a pilot program of eight buses to test the feasibility of fully-electric buses (City of Tempe, 2020).

Going forward, the 2022 Draft Climate Action Plan for Tempe contains various aspects of equity that are supported through their theory of change (Appendix 1). The Guiding Principles displayed in the city’s theory of change for equity “prioritizes needs of BIPOC residents and Indigenous knowledge” (City of Tempe, 2022). The draft is a continuation of their efforts of targeted universalism and considering underrepresented groups/individuals before others. To combine equity efforts and transportation, the City of Tempe supports the creation of the Transportation Management Association, which would be a non-profit member organization that manages and oversees transportation options. Other equity efforts detailed in the draft advocate for regional and federal funding for Bus Rapid Transit and Tempe Streetcar extension, increase transit frequency on key routes, and adopt building codes that reduce barriers to install electric vehicle chargers. Improvements in light rail, bike, pedestrian, and streetcar infrastructure will continue to be a priority for the city as they work to achieve their goal of a 20-minute city and the development of more mobility hubs. Mobility hubs combine various forms of transportation in one location, and there is currently only one that is within Downtown Tempe (City of Tempe, 2022). Further, the city has proposed several investments in transit shelters, bus rapid transit primarily on Rural Road/Scottsdale Road, extending the Tempe Streetcar into Rio Salado and Mesa, and installing more electric vehicle charging stations.

Local Listening with Community Organizations

Centrally, the research up until this point will inform the necessary place-specific localization that is required for equity work. To gather this perspective, we conducted listening sessions with Tempe Community Action Agency and CHISPA.

Tempe Community Action Agency

Background

The Tempe Community Action Agency (TCAA) is a non-profit social service organization founded in 1966 by two women, Lupe Esquer and Barbara Norton, who saw a need in the Tempe area. With the reputation of Tempe’s largest social service agency, the non-profit organization’s mission is “to foster dignity and self-reliance for the economically vulnerable in the communities [they] serve” (TCAA, n.d.). For more than 55 years, the Tempe Community Action Agency (TCAA) has worked to improve quality of life for their community by offering programs that promote healthy upbringings for youth, address food insecurity, stabilize housing, and more (TCAA, n.d.). TCAA provides programs to the valley that reach over 27,000 community members within and nearby Tempe communities (TCAA, n.d.). Some of these programs include emergency centers, hunger relief, financial services, community gardens, and many more diverse programs to benefit the community. TCAA continues to shape and innovate their programs in response to the community's needs.

Listening Session

Team TEA had the opportunity to meet with the Chief Executive Officer of the Tempe Community Action Agency (TCAA), Deborah Arteaga, who shed light on the needs of the low-income and elderly communities within the city of Tempe and surrounding areas. TCAA maintains many programs in Tempe, which include Food Programs, the Senior Independence Program, and Community Action Program (TCAA, n.d. & Arteaga, listening session, 2022). The programs all have intersections that are directly or indirectly impacted by transportation. The Food Program experiences transportation barriers, as it is challenging to reach the facility during its hours of operation. There are also physical limitations since many of these community members depend upon public transportation, such as Tempe's Orbit Shuttle Bus, the Valley MetroRail, and the local bus system. TCAA has provided bus tickets and light rail passes to stimulate this accessibility, but there are still financial and physical barriers despite this support (Arteaga, listening session, 2022). Another program Arteaga described is the Senior and Adult Independence Program, which provides an array of services for the low income and elderly individuals they service. The program includes a senior center, in-home care for seniors, petcare, and other basic household maintenance and necessities that become difficult to keep up to date on (Arteaga, listening session, 2022). The transportation barriers are very apparent through this program, as it is challenging for the elderly and low income communities to access essential services that also contribute to the maintenance of themselves and their homes. The final program Arteaga shared with us during the listening session is the Community Action Program, which focuses on housing cost issues such as financial assistance for the mortgage, the electric bill, and other expenses. Electric vehicles have been considered in the context of this program, but primarily regarding the opportunities to charge these electric vehicles within their own homes as well as the greater community (Arteaga, listening session, 2022).

Those who are served by TCAA would most benefit from improvements made targeting public transportation that is accessible to those with disabilities, manages the significant heat barrier to utilizing these transit options leisurely, and more frequent and affordable transportation options (Arteaga, listening session, 2022). The TCAA volunteers help alleviate some of these transportation barriers, but accessibility, affordability and feasibility still impede serving those who rely upon the organization. Other issues around transportation have been discussed among the organization's members, but primarily focusing on the rapid increase in transportation costs due to skyrocketing gasoline prices, thus increasing the overall costs of transportation to maintain TCAA's various programs (Arteaga, listening session, 2022). One of the biggest barriers to transportation is ideal options for the senior citizens within the community, and even though Tempe's Orbit Shuttle Bus is an affordable option, this method of transportation is not feasible during the hottest months of the year. Overall, electric transportation is not a priority for TCAA and the primary priorities for the communities they serve is food security, housing security, and financial security.

In this interview, there was an emphasis that ET was not seen as an explicit focus, more so ensuring a variety of options and choices within the transportation network that creates equitable access (Arteaga, listening session, 2022). For the community members that interact with TCAA, personal electric vehicles are not a reality within reach. Accessibility, affordability, and convenience are the most prominent barriers (Arteaga, listening session, 2022). While looking into the future of electric transportation, Arteaga envisions easy and plentiful access to these new

transportation options. However, she also maintains reservations on this transition, primarily because the dependence on natural resources is still needed for the electricity to power these transportation options as well as the reliance on lithium for the batteries to generate these electric mobility options (Arteaga, listening session, 2022).

CHISPA Arizona

Background

CHISPA Arizona, an offshoot of the League of Conservation Voters across the nation, is a non-profit organization that “envisions an inclusive and reflective democracy that prioritizes communities' rights to clean air and water, healthy neighborhoods, and a safe climate for generations to come” (CHISPA AZ, n.d.1.). CHISPA works with Latinx communities to use a transformational approach to environmental advocacy, hold decision makers accountable, fight environmental racism, and build an equitable and inclusive environmental movement (CHISPA AZ, n.d.2.). The non-profit organization focuses on several key issues - demanding clean air and energy, conserving public lands, and building democracy and community power (CHISPA AZ, n.d.2.).

Listening Session

To better understand the communities we are trying to collaborate and connect the TE Activator with, our team met with Masavi Perea, Organizing Director at CHISPA AZ. Perea explained the priorities of the communities CHISPA works with and the organization's thoughts on electric transportation.

In this session, Perea started by addressing the increased motivation to transition to electric transportation has produced a strong sense of urgency to adopt electric transportation as soon as possible. However, there must be careful consideration of the human rights impacts that will be directly and indirectly created as this transition is pursued. The energy sources, infrastructure, and people needed to implement this transition cannot be rushed and other ways of living must be respected (Perea, listening session, 2022). The youth of the community must also be incorporated into this process, as they will experience the impacts of this transition more than anyone (Perea, listening session, 2022).

A primary focus of CHISPA is climate change, and has been a massive rallying point for the organization to stress the importance of environmental justice. In the context of climate change, the heat island effect is a major priority for their communities. CHISPA has developed campaigns and programs to educate and advocate for green spaces and cool corridors to combat intense heat in South/West Phoenix. Not only does heat severely impact the health of these communities, but the heat island effect has a negative impact on the accessibility of transportation, especially during the summer. Another consideration for transportation that greatly impacts the community of Phoenix is the high rates of pedestrian fatalities (Schwenk, 2021). This is a trend that also carries across the state, as Arizona has the highest rates of pedestrian fatalities in the United States (Vandell, 2020). The City of Phoenix and the City of Tempe have announced goals to reach zero pedestrian fatalities within their communities, and these goals ought to include expectations for safety for electric transportation as well (Bontke, 2022). For electric transportation (even transportation currently) to work for everyone, barriers such as heat, traffic, violence, and infrastructure must be incorporated into this transition.

One of the key points made about an equitable electric transportation transition is that this work requires a slow and intentional process to create trust with residents by spending significant time with the community. Despite the urgency to move away from combustion vehicles, solutions must be comprehensive and carefully crafted with the community. Perea pointed out that grant funding for communities, funded by municipalities and/or SRP, which prioritize the transition to electric transportation, can support endeavors to develop potential solutions and once again emphasized incorporating the youth into this process.

For future listening sessions and forums to engage with community members and organizations, it is important to meet community members at locations where they are most comfortable (Perea, listening session, 2022). Favorable locations must also be equipped with proper language interpretation resources as well as consideration for ideal times for community members to meet. The final piece of advice from Perea encourages stakeholders to “acknowledge privilege, be honest, and educate yourself before reaching out” (Perea, listening session, 2022).

Relevant Work

CHISPA has been integral to the introduction of electric school buses within their communities. The Clean Buses for Healthy Ninos campaign is aiming to utilize funds from the Volkswagen Environmental Mitigation Trust that were allocated to the states to provide cleaner forms of transportation (LCV, 2017). In 2019, the Board of Directors of the Phoenix Union High School District unanimously approved an electric school bus pilot program in the largest high school district in Arizona, where approximately 80% of the student population is Latinx (LCV, 2019). With over 300,000 students in Arizona relying on school buses, this program is a step in the right direction of providing effective electric transportation that benefits the communities that experience the most negative effects of gasoline-combustion vehicles.

On Earth Day, April 23, 2022, CHISPA is launching their Clean & Green program, which calls for more electrification of transportation and clean energy for buses. Perea explained that public transportation should be free and that it is important to be more community based and not focused on individuals. This energy also has to be affordable. “We talk a lot about clean energy, but not affordable energy,” Perea stated (Perea, listening session, 2022). Since this campaign is still upcoming, it is important to reach out to CHISPA and research this program in more detail once it is launched.

A key issue that CHISPA focuses on is the demand for clean air and clean energy, because the “reliance on fossil fuels is polluting our environment and accelerating the warming of our communities, creating a public health crisis that disproportionately impacts Latinos, low income families, and people of color” (CHISPA AZ, n.d.3.). CHISPA is fighting for a transition to clean, renewable energy and the chance to participate in decision making spaces (CHISPA AZ, n.d.3.)

Community Listening Pilot Project

When drafting this project, our team decided it was best to outline a pilot for the TE Activator practitioners to enact, as this facilitates long term trust and a foundation for a concrete relationship between the TE Activator and underserved communities. We selected this approach as our time as students is extremely limited and not conducive to achieving the long-term goals

and strategies required within a project of this nature. Therefore, we created a guide for the TE Activator, with the input of community and institutional leaders (see listening sessions above).

The pilot project is a year-long process to collaborate with and hear from residents of underrepresented communities. While the main focus is on transportation electrification, it is also important to speak with residents about their neighborhoods, understand their assets, and how to utilize their current assets to produce benefits for the community. The TE Activator must build relationships with these communities and the organizations working with them before pursuing an electric transportation agenda. This is not a linear process, ongoing collaboration with these community members and organizations is vital in order to make the transition to electric transportation equitable.

Determining Success

Success for this project will look like a safe, brave space that allows for open and collaborative engagement with a diverse group of community members and organizations to continue to provide feedback and insights. Further, financial, social, and governance structures should shift towards community power, rather than institutional power. Alongside retention of getting quality, meaningful engagements, there will also be a growing number of people involved as the process continues. This will ensure that the listening pilot project will dynamically flow as new perspectives are integrated, rather than staying fixed to a few organizations. The TE Activator should finish this pilot project with a better understanding of these communities's assets and areas of opportunity, which will inform a process of working together to achieve an equitable ET landscape.

Frameworks Utilized

As we designed the Community Listening Pilot Project, we utilized the Asset-Based Community Development (ABCD) Framework to craft our questions and the Mobility Equity Framework for transportation-related questions. ABCD will serve as a complementary framework to the Mobility Equity Framework to provide a backbone for how team TEA interacts with communities when identifying community assets (Appendix 2). The interview protocol we are recommending the TE Activator implement, using the below script, is through the lens of Love-Based Aid, so that "...service activities...contributes to the spiritual growth of those who serve while rendering material benefits to those who are served" (Ulluwishewa, 2017). In using these three frameworks, we are creating a process that reflects the needs and strengths of the community we are aiming to serve (Appendix 2).

For the TE Activator's engagement strategy, we utilized two additional frameworks: the Equity and Empowerment Lens and USDN's Spectrum from Community Engagement to Ownership (Appendix 3). This Equity and Empowerment Lens "...is a set of principles, reflective questions, and processes that focuses at the individual, institutional, and systemic levels..." (Multnomah, 2021) that analyzes People, Place, Process, Power, and Purpose when crafting decisions (Appendix 3). The "5 P's" can be directly used when crafting strategies throughout the timeline, as we have done in the below Timeline and Strategy subsection, in addition to being used to revisit the proposed trajectory as the timeline is enacted. With this, USDN's Spectrum from Community Engagement to Ownership articulates how and why equity work requires collaborative governance that focuses on community power building in tandem with institutional

power shifting. Direct participation and facilitation over community development and project implementation is vital to ensure communities are involved in decisions and solutions that impact them. Further, “[t]his level of [community] participation unleashes much needed capacity [that] also requires initial capacity investments across multiple sectors to achieve systems changes and culture shifts needed (USDN, n.d.). These two strategies will ensure that engagements have meaningful community-institutional dialogue that “...facilitate[s] systems changes to increase community voice[s] and decrease disproportionate harms caused to low-income communities and communities of color” (USDN, n.d.).

These strategies will work alongside the process frameworks by serving as engagement pathways for the TE Activator. By highlighting hands-on strategies that can channel the theoretical frameworks our group used when crafting our own process, we are ensuring the TE Activator has clear principles and tools to orientate their community conversations. Our group believes it is important to have two sets of frameworks because, although academic theory can provoke thought around moral orientations for community engagement, many still lack a practical, tangible application for institutions to get this done. Therefore, from listening with our TE Activator partnership, we have included possible equity strategies that can be consulted when working alongside the community. For example, Love-Based Aid ensures the engagement process has an intention centered around cultivating reciprocal relationships, but USDN’s Spectrum takes this a step further to help the TE Activator’s intentions align with their activities. In this way, we have provided theoretical frameworks to reflect upon the values that underpin community engagement, in addition to applicable strategies to be used directly during this engagement.

Accessibility

Each Community Listening Session should have the appropriate translation resources available to fully capture community voices. Spanish translation, ASL Interpretation, and other language translations must be considered and provided for all communication. These considerations must be determined prior to engagement and resources ought to be finalized to ensure an accurate collection of narratives that is mindful of community translation needs and preferences. For instance, some communities may want to provide their own translation resources, while others may prefer these resources be provided by the institutions seeking their perspectives. The timing of these conversations must also be mindful of the hours in which narrative collecting will occur. The meeting times ought to be favorable for those who will be providing their insights in order to gather the most participation and foster positive relationships between all stakeholders.

Considering the on-going pandemic, it is imperative to also prepare for virtual listening sessions. With this newer engagement medium, doing so in an accessible manner is necessary to still create a reciprocal listening and learning experience. If the engagement occurs over Zoom or other video conferencing platforms, ensure closed captions for the desired language, internet is accessible for the community, recordings of the event, and free-access online post-event are available. It is crucial that the materials and data gathered are also shared with the community.

For optimal in-person meeting, the location should be close to the community that the TE Activator will be engaging with access to public transit or provide transportation options themselves. The location should also ensure inclusion and comfort for the communities that will

be engaged, such as wheelchair ramps and water stations. If security is absolutely necessary, have plainclothes officers. Seeing uniformed officers can deter community members that are undocumented, formerly incarcerated, or have historically had previous negative experiences with law enforcement, which will hinder a positive atmosphere for collaborative community work (Beck, et al., 2020).

[Potential] Actors

As part of the Community Listening Pilot Project, the TE Activator will need to connect and collaborate with local organizations, such as CHISPA Arizona, the Tempe Community Action Agency (TCAA), Unlimited Potential, Tiger Mountain Foundation, and Spaces of Opportunity (Appendix 4). Our team conducted conversations with CHISPA and TCAA, and were pointed to Unlimited Potential, Tiger Mountain Foundation, and Spaces of Opportunity to be brought into the conversation. Through these connections, the TE Activator can hold a forum to hear from community members across Metropolitan Phoenix and create additional communication methods to build trusting relationships. We want to recognize this is not a complete list of potential community partnerships. As the TE Activator builds trust, partners may feel comfortable to share additional connections to further understand the complexities and nuances of community assets and needs.

Honorarium

The TE Activator will need to secure and/or set aside funding to provide an honorarium for community members that take part in the listening process. Since residents will be taking time out of their day to meet with the Activator, they should be compensated for their participation. The amount for the honorarium should be based on the amount of time and effort the action would require. For example, compensation for facilitation of an hour long panel discussion will be more than asking to send an email to connect with community partners.

Timeline & Strategy

Overall, this process should take about a year and include four overarching sections - informal engagement with organizations, formal community input sessions, integration of feedback and input into TE Activator plans, and continuous relationship building to ensure community engagement and ownership. The proposed timeline for the TE Activator's community engagement is with the important caveat that these time periods are not set in stone. Depending on the pulse of the community organizations, additional time may be required to make this engagement intentional and meaningful. Therefore, the TE Activator can use this timeline and strategy as a guide, but should deviate as needed to maintain the integrity of community engagement, as this process will not be linear. Further, this is not a complete list, as this strategy was crafted with our own internalized biases and there could be potential limitations with what is proposed. While the below timeline starts this summer, it can be moved based on the TE Activator's programming.

Centrally, the Timeline & Strategy details the process to create a community organization grant program, a network and/or Department of community organizations that is given primary decision-making power, and an internal equity educational program for institutions that is periodically revisited (not a one-and-done training). The main vision detailed in this Strategy is

to shift power in tangible, meaningful ways, such as changing decision-making structures and creating financial equity programs.

Our strategy will be using the Equity and Empowerment Lens, also known as the “5 P” Framework, and USDN’s Spectrum from Community Engagement to Ownership (Appendix 3). Each phase of the Timeline uses the 5 P’s as guiding principles, and is positioned within the USDN Spectrum.

Summer 2022

Informal Engagement with Community Organizations & Internal Preparation

USDN Spectrum Stance: Consult

- **People:**
 - Begin talking with potential actors (CHISPA, Unlimited Potential, TCAA, and other community organizations) to plan future listening sessions and build trust between TE Activator and community organizations.
 - Attend community-held events and listen to the conversations and how they are facilitated.
 - Look at opportunities for volunteer work through the various organizations to form deeper relationships with those who will be impacted (TCAA, CHISPA).
- **Place:**
 - Conduct internal institutional educational training and research to understand violence embedded-in-place of communities engaged.
 - *Definition of violence embedded-in-place:* The manner in which structural racism lingers in the built and social landscape. This residual violence from historical trauma impacts the current layout of how people and communities can and do interact with one another on the land.
 - For example, the violence embedded-in-place from the displacement of the Golden Gate Community to build Sky Harbor Airport has lasting and permanent implications for how former Golden Gate residents can interact with the land that was formally their home, where this violence is embodied in the land as well as within the social structure of the displaced community (Bolin, et al., 2005).
 - In addition to the Bolin, et al., article cited above, a good starting point for research on this topic would include looking at the history of redlining and segregation in Phoenix, the history of South Phoenix’s lack of council representation, how highways displaced BIPOC communities (such as San Pablo Barrio in Tempe), and the history of Maryvale and the Golden Gate Community (where Maryvale was constructed in the 1950’s as a white, master planned community. After the Golden Gate Community was displaced here in the 1970’s, it soon had some of the highest rates of child leukemia in the country due to environmental injustices).
- **Process:**
 - Integrate the Electric Transportation Equity in the Valley Report recommendations and insights, also conveyed in the Equity Roadmap.

- Reflect on why the social aspect of sustainability is more difficult for institutions in the TE Activator by analyzing historical to current structures and processes.
- Once community organizations have expressed their interest, gather guiding principles provided by these organizations on how they would like to be partnered with.
- Work with community organizations to start scheduling listening sessions / forums for Fall 2022. Utilize guiding principles established in the beginning of the relationship to inform this process, alongside co-creating guiding principles specifically for the listening sessions.
- Begin identifying how to form a community organizational grant program to ensure there is necessary capacity for community partners down the road in this timeline.
- **Power:**
 - Recognize institutional accountability for creating barriers around who benefited and who was burdened in the Valley's current car-centric culture, both in terms of where transportation channels are and how they were created.
 - Recognize the differing priorities across communities and their mismatch with institutions.
- **Purpose:**
 - Identify intervention points in decision-making structure, such as where community organizational leaders can be brought into institutional decisions.
 - Develop internal educational trainings that creates opportunities to unlearn and relearn about the necessary shifting of structural inertia in decision-making processes, so institutions are prepared for the 'Involve' USDN Spectrum Stance.
 - Build and strengthen relationships with important actors for equity work.

Fall 2022

Formal Community Listening Sessions

USDN Spectrum Stance: Involve

- **People:**
 - Invite community members to attend listening sessions/work with community organizations to reach out to residents.
 - Continue attending community-led events and hold space for community organizations within TE Activator decision-making meetings.
 - Make sure there is needed language translation and accessibility protocol for TE Activator facilitated meetings.
- **Place:**
 - Ensure proper honorariums are given to community organizational members when giving their time to construct and facilitate the listening session process.
 - Honorariums are stand-ins for proper grant funding that will happen in the next phase.
 - Plan around accessibility for location of listening sessions.
 - Make sure times are not during work hours/are on weekends so there are less time constraints for people attending.

- For online/virtual events, consider potential internet access issues and attempt to either provide resources for virtual events or avoid holding such events.
 - For in-person events, pick locations that are close to public transportation or have transportation provided for. The in-person events ought to be held in areas where community members and community organizations feel most comfortable, therefore these locations should be determined collaboratively.
- **Process:**
 - Hold formal listening sessions with community members and organizations.
 - Utilize Equity Roadmap and Community Listening Script so institutional partners can co-develop an agenda with community-based goals for listening sessions.
 - Work to create a reciprocal and collaborative relationship by prioritizing community organizations capacity-building over creating short-term outputs.
 - Gather consent from participants prior to communication or engagement that explicitly shares detail about the listening sessions.
 - Identify community members that would like to continue this conversation or collaborate with the TE Activator.
 - Prepare for the introduction of new community member organizations and/or community members with their own priorities and intentions surrounding the TE Activator (revisit preliminary steps laid out in Summer 2022 on integrating more community members and community organizations for more detail).
 - Continue creating or changing institutional structures to create a community grant program that will be required for a community organization to fully participate in how listening sessions are integrated and for continuing community outreach to update people about the process along the way.
- **Power:**
 - TE Activator institutional partners are taking and articulating the best practices they have developed to ensure community organizations have decision-making power.
 - Institutional partners in TE Activator have developed and completed training about structural racism and have developed internal equity goals (see “Place” in Summer 2022).
 - Hire additional staff so there is enough internal capacity to coordinate with community organizational leaders.
 - Community-learning and evaluation process that holds institutional partners accountable for the engagement happening, as well as policy development that is happening outside of the TE Activator’s scope (e.g. municipal budgetary sessions). This is important to ensure institutional partners are not engaging communities for the appearance of equity and then funding programs that are antithetical to community priorities (i.e. community leaders discussing the importance of public charging stations, or more shade structures at transit stops, but this not being reflected in the upcoming fiscal year municipal budget).

- This could be through reflective, check-in sessions between institutions and community partners, outside of decision-making meetings.
 - These will need to be honest, brave, and safe spaces for community organizations to explain their perspective and for institutions to listen and find pathways to power without getting defensive or maintaining the status quo.
- **Purpose:**
 - Strengthen the relationship between the community and stakeholders within the TE Activator and build upon the established boundaries and expectations developed in the summer.
 - Receive a wider range of perspectives and engagement with community members to then reflect on how the TE Activator could best support these communities.
 - Foster a deeper understanding of the priorities, opportunities, and challenges of the communities that are interested.
 - Continue to maintain developed relationships while balancing new relationships with community members and community organizations.

Winter 2022-23

Integration into TE Activator Plans

USDN Spectrum Stance: Collaborate

- **People:**
 - The community members and organizations at this point ought to have established leadership roles with the TE Activator and are thoroughly engrained in the implementation of decisions and the decision-making process.
 - Continue to hold regular meetings with community members and organizations when analyzing and finding strategies based on listening sessions.
 - These meetings should be invitations to TE Activator meetings, holding meetings facilitated by community members/organizations, and regular reflective, check-in sessions.
 - Share and permit editing access to documents to community members and organizations.
- **Place:**
 - A comfortable and community-desired meeting location or meeting platform (e.g. video conferencing) ought to be firmly established at this point, ensuring maximum participation and accessibility for all stakeholders involved.
 - Additionally, ensure it is at a regularly scheduled time and reminders are sent a day before the meeting.
 - Incorporate the needs of new community members and community organizations that would like to be involved in the TE Activator by keeping meetings open to the public.
- **Process:**
 - Determine leadership roles and facilitation responsibilities for all involved in the TE Activator.
 - Evaluation of the responses gathered from the listening sessions built on a power-balanced, collaborative decision-making model for co-creating definitions to opportunities and solutions.

- Develop and agree upon a shared purpose for decision-making processes.
- Incorporate new community members and community organization’s perspectives and ideals into the process as they are brought into the TE Activator.
- **Power:**
 - Collaboration between institutional and community-based sectors that ensures there is required community capacity to both be part of decision-making processes and uphold larger missions of the organization.
 - At this point, the community grant program should have dispersed funds to organizations that will form this capacity.
 - Clear leadership roles for community members and community organizations where there is the ability to delegate, facilitate, evaluate, and guide the decision-making process and the proposed outcomes.
 - Community organizations have built a strong, reliable base of impacted community members that are regularly brought into the decision-making process.
- **Purpose:**
 - After months of internal institutional educational trainings, there is a greater acknowledgment of which equity goals must be reached, in addition to creating intervention pathways for community work to drive the direction of this project.
 - The evaluation of the community listening sessions are done with the necessary nuance and context that only community organizations and members can articulate, therefore ensuring the next stage is grounded, meaningful, and addresses systemic outcomes.
 - Collaborative governance is embodied as common practice in the evaluation and decision-making processes within the TE Activator.

Spring 2023

Ensure Community Ownership

USDN Spectrum Stance: Defer To

- **People:**
 - Established networks of community members, community organizations, and institutional leaders working alongside the TE Activator.
 - These networks will have clear decision-making power in the TE Activator and will be led by directly impacted peoples.
 - TE Activator will accentuate the community solutions brought forth by these community-based networks over personal institutional agendas.
 - Transparent strategy to center community ownership over how the TE Activator wishes to make decisions around ET-related solutions.
- **Place:**
 - Continued, regularly-scheduled meetings that are community-facilitated, where there is an understanding that the TE Activator now is a participant and guest in community-led processes.
 - Participatory budgeting or other redistribution methods have been actualized where institutional budgets reflect community priorities and financial pathways to community ownership are clear within their decision-making structure.
- **Process:**

- Shared purpose for decision-making processes has led to a long-term implementation strategy, in the way of a network, coalition, or department, that reclaims community governance over essential transportation necessities.
 - The structure for decision-making and long-term implementation is in a manner that achieves a pathway for ambitious, place-specific, community-led strategies.
 - Leadership roles from the listening project stage are embedded deeper into institutional structures that creates opportunities for a plurality of manners that community members can get involved with municipal and state-wide efforts.
- Community assets, such as informal relationships, organizing power, connections to community spaces, and knowledge of place, continue to generate ongoing resident leadership that will continue to feed into solution strategies and problem identification.
- **Power:**
 - Management and design of how solutions are conducted and decided upon is controlled by the communities where these solutions are happening within.
 - At this point, community capacity has been supported so there is the organizational bandwidth, financial resources, and structural integrity that ensures the time and energy needed for this leadership role is possible without exploiting community members or compromising the efforts needed for other community priorities.
 - Organizational cultural shifts have been reflected in budgetary priorities where there is not only decision-making power, but tangible implementation ability for community ownership over solution strategies.
 - This could be seen in a fully functioning community grant program that gives reiterative, consistent funding to organizations working on transportation equity
- **Purpose:**
 - Create a reiterative process that embeds a practice of community listening and leadership into institutional decision-making structures, where collaborating and deferring to directly impacted communities becomes the structural norm.
 - Internal institutional equity educational trainings are frequently revisited to prompt reflection about ways to further decentralize structures that inhibit community ownership.
 - Complete financial and structural community leadership in the TE Activator's decision-making process for achieving equitable transportation solutions.

Listening Script

Our team outlined a script and possible questions for the TE Activator to use in the Community Listening Pilot Project with community members and organizations across the Valley. We also provide the questions and format in another document, titled Community Listening Script, to utilize in future forums and sessions.

As part of this process, it is important to understand and recognize a community's assets, so they can share what they enjoy about where they live. As Masavi Perea stated in our listening session,

“We do not want to romanticize poverty. But share the beautiful moments, because they are there.” Perea explained it is important to reaffirm that these communities are not rough, ugly, and need to be developed, they contain beauty, life, and areas that might need support.

Although some questions may incite responses outside of the TE Activator’s scope, we believe these questions are vitally important so respondents feel comfortable voicing their actual concerns and perspectives, in addition to the TE Activator not coming in with an explicit, transactional agenda with these listening sessions. If a respondent brings up something outside of the report, this creates the opportunity for the TE Activator to be a community connector (e.g. point to Tempe PRE program, that offers free and half-cost tuition with eligibility, if a respondent brings up child care). Rather than operating in silos, these broader questions have the opportunity to incite systemic connections between different assets and needs within historically underserved communities, and reciprocity between the TE Activator and the people they are listening to.

Opening

“Thank you for your time. We value your expertise and participation in this listening project. We would like to take a moment for us to take five deep breaths and ground ourselves before we get started. If you’re able, release any tension or residual emotions from this day or the week before we enter this collective space.”

Land Acknowledgement

“As many of us here today are descendants of settlers, immigrants, or descendants of those forcefully brought to this continent, we must recognize and never forget that we occupy the unceded traditional and contemporary homelands of those Native American tribes that have inhabited this land for centuries.

We also have a responsibility to acknowledge and pay respect to the Indigenous elders and Knowledge Keepers – past, present, and future – whose stewardship and love of these lands and all its beings allow us to be here today.

While acknowledgement means little unless coupled with meaningful action, we must all recognize our full, true history before we can move forward and must educate ourselves on our responsibilities to one another and the land.”

TE Activator and Goals

“We are the Transportation Electrification Activator, a group of local Arizona organizations and cities interested in shaping the electric transportation landscape to positively benefit Arizona’s communities. Part of our goal is to take an equitable approach to ensure the benefits of electric transportation are shared by all. This is why we are conducting this Community Listening Project, so that the perspectives of the communities we aim to serve drive the actions we take.”

Questions

General

- What are the strengths of your neighborhood?
 - What do you love about your community?
 - What are your favorite places to visit in the area?

- What assets does your community have?
 - Do you have access to: emergency medical services, nursing homes, health clinics, dentists, pharmacies, fitness centers, accessible transportation, child care.
 - What is the quality of these assets?
- What areas in your community do you feel could be improved?
- How could the TE Activator help you in your day to day life?

Check-in

- How are you feeling?
- Are you uncomfortable in any way?
- With this process, what kinds of questions do you think we should be asking going forward?
- Do you have questions for us?

Transportation

- What are the strengths of your community, with respect to transportation?
- How do you get around the Valley?
 - Is this preferred or a necessary form of transportation?
 - How accessible is this form of transportation for you?
 - How much time do you spend commuting or reaching your final destination?
 - Is your transportation option dependent on multiple factors (such as weather/heat/lack of shade, time of day/availability of transit)?
- How does transportation impact your day to day life?
- What do you like about the transportation system?
- Are different transportation options important to you?
 - If so, which ones? If not, why?
- How would you like to get around the Valley? What, if anything, needs to change in the landscape for this to happen?
- How do you feel about electric transportation in general?
- Do you see a future where electric transportation impacts you personally?
 - Would electric vehicles or electric methods of transportation be more probable as a transit method in the future?

Potential Follow-up Questions

Ask these questions only if conversation has gone well / participants feel comfortable

Transportation Equity

Definition: Accessible and affordable transportation for everyone in the community resulting in fair distribution of transportation resources, benefits, costs, programs and services based upon differences in income, ability and other factors affecting transportation choice and impact (Leahy & Takesian, n.d.).

- Is this a focus of yours?
 - If so, why?
 - If not, would you be comfortable sharing where your focus(es) are?
- What does transportation equity mean (or doesn't mean) to you?
- What is required for the Phoenix Valley to reach transportation equity?

TE Activator Transportation Goals

Mission & Vision: The TE Activator, which launched in November, is a group of local Arizona organizations and cities - facilitated by Salt River Project - interested in shaping the electric transportation landscape to positively benefit Arizona's communities. The Activator members envision a region with clean air, accessible electric transportation options, and robust electric vehicle (EV) infrastructure. As part of their goal, the Activator wants to take an equitable approach to ensure the benefits of TE are shared by all.

- What are your concerns and hopes, if any, about SRP leading a transportation equity project centered around electric vehicles and transportation equity?
- How do you view the goals of the TE Activator?
 - Given the context of how transportation pathways have displaced Black and Hispanic/Latinx communities in South and West Phoenix, historically and now with the light rail expansion.
- If public transit is a possible equity solution, do you believe there is a way to increase accessibility without causing more harm?

Community Organization Narratives

- Is electrifying transportation a top priority for your community organization?
 - If so, why?
 - If not, what are your top priorities?
- What are the primary methods of transportation for your community members?
- Which methods of transportation would you like to see improved upon?

Concluding Remarks

“If there are any questions, comments, or concerns that you would like to convey that you did not have the opportunity to do so, please feel free to express them now or contact us.

“Thank you so much for taking the time to speak with us and share your insights. We look forward to further collaboration in the future. Please reach out if you have any questions or feedback.”

Best Practices

When executing the Community Listening Project, as outlined above, it is important to remember this is not a set-in-stone recipe for how to conduct participatory, socially-embedded work. These are merely suggestions, based on our research and targeted listening, we have compiled. To truly understand the perspectives and approaches required in this work, there should be guiding principles created by community members facilitating this work. These could range from anything as having a sign to indicate jargon, being transparent about internal processes of the work, or having a set protocol of how to communicate (‘like’ messages when viewed so team members know you saw it, having it on a channel that is best for community members, etc). These we, as an MSUS team, cannot outline for the TE Activator verbatim. They must be crafted to the specific context and requirements of communities being engaged.

This central report is broken down into two smaller deliverables: the Equity Roadmap and the Community Listening Script. The roadmap can be used as a protocol to refer to, for both TE

Activator partners and community organizations, when identifying a planned strategy for community listening. The script provides a breakdown of what could be the opener, questions, and closing of such a listening session. Both smaller deliverables serve as summations of our final report, so there is an easily digestible version that can be dispersed.

The questions reflected in the script are the ones our team used during our own listening sessions. However, these questions, listed in the Questions subsection above and in the Community Listening Script, should be vetted by community organizational members before being asked at Community Listening Sessions. Further, they should be adjusted based on the style of the listening session, such as a forum style having fewer questions that are conversational versus a 1:1 interview having more questions that give the interviewee room to share their perspective at the length and depth they see fit. By adjusting the questions based on community context and listening session style, they will be most conducive to a successful and meaningful session.

After the listening session, TE Activator partners should meet with community facilitators to begin identifying pathways for implementation. By co-identifying pathways for the aspects brought up, and determining where structures need to adapt or change to realize them, community members can be involved in every step of the decision-making process. Further, how perspectives or data collected is analyzed, interpreted, or incorporated into future planning should be grounded with the context-specificity that community members can provide. Working in networks, community members can articulate what they believe is most crucial to work towards, while institutions are transparent about where structures need to change to make this possible. In this way, there can be a trusting relationship formed where strategies are led by peoples most impacted by decision-making, while peoples in power are supporting through changes in structural processes. For example, if community members voiced in listening sessions that providing grant funding for community organizations to lead electric transportation-related initiatives was most important, TE Activator partners should identify how to secure funds and create pathways to power for such a program.

Centrally, the Community Listening Pilot Project is a starting point to calibrate institutional values and approaches for socially-embedded work. This will allow for additional, productive discussions with community partners about how this work is conducted in prior planning, implementation during, and integration after listening sessions to create equitable ET solutions. At every step of the process, community organizations should be facilitating the listening process, and institutions should be focused on how to shift culturally and structurally to defer to community-led decision-making. Additional information about these aspects are detailed within the Timeline & Strategy section above.

Based on the outlined pilot process above and the approach crafted below in the Project Processes and Emerging Conversations section, we have outlined considerations when crafting guiding principles for a shared culture of cooperation. As the Equity and Empowerment Lens that outlines the “5 P’s” of equity work suggests (Appendix 3), there is a need for self-reflection as well as community conversations while engaging in this work. This is because frameworks cannot be the be-all-end-all of committing to this work, it is a dedication to a non-linear learning process and restructuring of deeply-rooted assumptions. This is a deeply reflective process where

everyone has something to teach and something to learn, especially for people that hold power and privilege, requiring both personal introspection and community conversations. As this team consistently comes back to, engaging in authentic equity approaches that are not performative accentuates process over outcomes, allows for changes in course as determined by a community, shifts decision-making power and the structures necessary to do so, and is slow and intentional about where these shifts must occur (See Project Processes and Emerging Conversations section below).

Project Processes and Emerging Conversations

After conducting listening sessions with national, regional, and local experts and continuing research to construct the Community Listening Pilot Project, our team wanted to accentuate not only our process, but the cultural, intangible deliverables that we are hoping to create with this work. First and foremost, the reason we orientated our applied project this way was because socially-embedded work is more than creating outcomes that look good on paper. Equity work does not only produce benefits for the most socially privileged group involved, but requires a practice to challenge cultural and institutional power dynamics. Further, it is about focusing on process, rather than outcomes, and co-creating a shared culture to work towards systemic equity goals (Johnston & Marwood, 2017). In this way, many of our deliverables are focused on these intangible shifts in how we approach, view, and move when working to serve, rather than looking to ‘solve’ problems with an aim to ‘develop’ a community. Further, this change in viewpoint requires a power shift, both morally and financially, that moves concentration of decision-making and capital from institution-led to community-led ventures (Harrison, 2021). When this cultural shift happens, equity work can create tangible outcomes that are more than performative (Love, 2021). By bringing to the forefront “...an alternative to the external changes-based sustainable paradigm, [we aim to] highlight the significance of altering human relationships with each other” (Ulluwishewa, 2017), so equity work has a relationship-building focus.

With this in mind, we are advocating for a slow and intentional approach to equity work, as cultural shifts take time before shifts in structural paradigms can occur. Especially under the pretenses that there is no being ‘not racist’. There is only being anti-racist, which comes “...from a conscious decision to make frequent, consistent, equitable choices daily... [that] require[s] ongoing self-awareness and self-reflection...[of where] we (un)consciously uphold aspects of white supremacy, white-dominant culture, and unequal institutions and society (Smithsonian, n.d.). This requires that institutions “...create and sustain an environment where everyone feels heard and fairly treated...by investing in a sustainable infrastructure” (Clarke, 2021). Investing in a sustainable work structure goes beyond diversity hires, but creating a culture of belonging that breaks down necessary systemic barriers that prevent “...people [from] feel[ing] like they can bring their whole person, have a seat and a voice at the table, and feel heard” (Clarke, 2021).

To understand what marginalizing processes may be systemically engrained, many of which are often taken for granted with an ‘it is what it is’ mentality, there has to be adequate time and consistent commitment in uncovering what could, and should, be done to make institutional structures equitable. This reflection and deliberation also cannot be pursued by “...setting an agenda or duplicating diversity initiatives that seemed effective in other organization[s],” instead there must be clear articulation of perspectives, personal identities, and context, so there is

consideration on “... how experiences of power and privilege may affect their approach and effectiveness” (CCL, 2022). Further, this approach requires ongoing dedication and is not a simple ‘one-and-done fix’ to creating an equitable shared culture. Equity is not “...a series of tools, strategies, and compliance tasks... [it is] a whole-person, whole-system change process linked to culture, identity, and healing... [that] does not come with a pre-set program or toolkit that simply needs to be implemented... [but] understand[s] the specific ways inequity plays out in our context, to engage in praxis—the integration of constant reflection and action— and to engage in a continuous cycle of learning” (Dugan, 2021).

With approaches and strategies in mind, there must be acknowledgement that good intentions are not enough, it is creating processes that will realize positive impacts. It is important to be transparent about intentions but, within equity work, impacts must be the primary focus. Intentions are “...what you thought you were doing...”, while impact is “...how that action was perceived by other people” (White, 2021). By focusing on impact, there can be a clear articulation of where harm was created, where active listening needs to happen, and why there was a mismatch between intentions and behavior. With this, focusing on impact can help create comfortable environments to voice where actions hurt others, rather than creating defensiveness around absolving guilt for causing harm, e.g. shifting away from “I didn’t mean it that way” to “I understand I did that.”

However, some impacts can create a systemic shift of livelihoods for generations, such as the case of gentrification. Acknowledging harm is not enough, there is a further step to redress and heal the source of harm (Darity & Mullen, 2020). This redress necessitates a shift of power, so there is not a disconnected institution making macro-level decisions without understanding micro-level context. For example, gentrification is a very real possibility with the ET transition if there is no investment into community decision-making structures and hyperlocal governance (Walling, 2021). Hyperlocal, or place-based, governance, “...give[s] stakeholders a structure through which to share ideas, voice concerns, advocate for investments, and co-design strategies with others both inside and outside their place” (Vey & Storrington, 2022). Through “...engagement[s] at the neighborhood scale [that] are connecting [institutions] with the community development agendas being undertaken in that community,” there are mutually beneficial impacts where institutions understand the context of place and communities are supported in their own goals (Dostilio, et al., 2019). Considering the history of “[u]neven patterns of economic growth and investment...” there is now an opportunity to “...enhance the institution’s ability to form partnerships and advance community development” (Vey & Storrington, 2022; CUMU, 2019). To shift power in socially-embedded work means there is a shift in community-institutional governance structures.

When work is not slow and intentional, marginalizing institutional consequences, like gentrification, can occur intentionally or not (Curran, n.d.). Although climate change and the transportation emissions that partially cause it are urgent to address, we cannot run into solutions without being intentional about the values we are bringing into these decisions, lest we repeat why we are here to begin with. Rather than acting reactively by providing band-aid solutions to systemic issues on the back-end, there needs to be proactive focus on “[s]ecurity and autonomy for poor communities [that] are not on the agenda of governments anywhere...” (Seabrook, 1997). This does not just mean giving funds philanthropically or pooling human resources, but

creating systemic processes that supply basic material needs - of acting in solidarity and not in charity (Spade, 2020). This challenges reformism, that calls to find ‘better’ outcomes within a ‘broken’ system, and necessitates transformation, by recognizing that although some systemic practices have changed, the system itself was “...intentionally designed to produce the disparate outcomes that disadvantage Black and Latinx...” peoples (Murphy, 2022). Instead of reactively changing practices within a rotten system, there needs to be greater attention on proactively addressing the roots of structural harm. Additionally, “...build[ing] individual capacity without commensurate organizational development can be ill-fated since structural or cultural features of the organization often stand in the way of putting that capacity to work” (Berg & Homan, 2021). By focusing on process, rather than outcomes, the TE Activator can put organizational capacity behind structural and cultural power shifts, so as not to just recycle the same structure within the new dynamic of ET.

With this orientation in mind, there can be unintended consequences of rushed equity work that does not look to address the systems that create inequity to begin with. Namely, often reformism can lead to the exact opposite of project outcomes, meaning that there is a possibility of decreased mobility and increased mobility issues without understanding the needs of historically underserved communities. Considering “...not everyone can afford electric vehicles and wean themselves off American society’s collective oil addiction right away...[then putting more pressure on an already] overburdened and underfunded public transportation system...[a]lternative and feasible options need to be made available to those who can’t afford buying electric vehicles, and these options—including better public transit programs or car sharing programs—require more investment and more diverse community outreach” (Greenlining Institute, 2011). Alongside the mobility consequences of not taking a systemic approach, there is also the necessary public outreach and educational campaigns required to make EVs equitable. For example, if residents don’t know it is cheaper to charge when it is not peak energy hours, they could be overcharged on their bill for charging their EV. Although this is of course within the context of single-family homes, versus public charging stations, “[k]nowledge about energy usage will be crucial in energy conservation and bill management, especially for hard-to-reach communities that are isolated due to linguistic and economic barriers” (Greenlining Institute, 2011). In addition to the issues of reformism and meaningful community outreach, there is a coinciding perspective that views technology, in isolation, to be enough for social advancement. Although technology can be helpful in adapting to aspects of a problem, “...the fundamental problems are political and economic and rooted in human nature...[therefore a] tool is not the task, and often the invisible, social, non-physical aspects of a technological regime make all the difference” (Rheingold, 2001). Especially considering the economic motivations of technology, it cannot be the primary method to solve social problems.

Over the last several months, the TE Activator has started to internalize our team's work and began questioning their process of how to make electric transportation equitable in Arizona. They have reached out to leaders at CHISPA to start building that relationship and, in March, the Activator held a webinar on “Equity In The Transportation Electrification Transition.” In this webinar, the Anthesis Group gathered employees from SRP to share about the recent considerations and developments within the TE Activator regarding equity. The strongest message from the webinar was the importance of acknowledging and recognizing that electric transportation is not a priority for these communities and the varying impacts of the current

transportation system, as well as the anticipated system, will affect underrepresented communities the most. This is a crucial step for the founding partners and practitioners to incorporate diverse perspectives into the TE Activator’s envisioned ET transition by “...partner[ing] with community-based organizations that have a track record in community outreach, cultural sensitivity, and language ability” (Greenling Institute, 2011).

Thus far, the TE Activator hasn’t changed their processes to account for equity work, waiting for the findings in this report, but it has been a topic of discussion and an outlined objective. Although in the early stages of deciphering how to address equity in their work, they believe it is a valuable approach. They have been having conversations internally based on conversations with Team TEA and reaching out to our project advisor, Scott Cloutier, but are planning to take action after digesting this report and the accompanying deliverables. They have taken messages to heart, realizing they need to take the time to do this right when centering equity in their work. Further, our conversations have prompted reflection to not assume they are at the top of somebody’s agenda, or that they should force their way to the top of the agenda (TE Activator, meeting, 2022).

As discussed in Fall 2021, Team TEA was given advice that SRP should develop a bid or call to the community. This would allow interested stakeholders, with electric transportation as their priority, to come forward, rather than being asked to take part. In equity work, it is imperative that the community reaches out to the organization for assistance, rather than the other way around. This may make it easier for SRP and Anthesis to gather interested community members and community organizations. By using this method, this avoids addressing communities that have been approached in the past for similar projects and have not received benefits after the organization gathered the information they needed (AAMC, n.d.). However, even interested organizations may have negative experiences from past projects, and the TE Activator should be cognizant of these hesitations.

Detailed in the Best Practices section above, guiding principles and goals for engagement have to be decided with the community and before beginning formal listening sessions. This will ensure that priorities and intentions are laid out on the table before beginning community-institutional partnerships. It is important to acknowledge one’s own institutional agenda, while being open to change as needed from the pulse of the community. With institutions being transparent about structural processes, and community voicing where barriers are impeding what they want to see, there can be a meaningful, transformative partnership that, through time and commitment, shifts power to community decision-making.

Recommendations

This is the last step of our report following the qualitative analysis of our listening sessions with national, regional, and local leaders. Below are tiered recommendations with phases - from how to continue public engagement to systemic policy changes. ‘Tiered’ in this context implies the level of investment, both financially and with time, that will go into these policies and programs, but does not need to be executed chronologically. These recommendations are based on our own research and listening, however community priorities and input need to be heard and understood prior to moving forward with institutional actions.

A high-level summation of this section is also reflected in our project one-pager, one of the deliverables of this project.

Future Utilization of Frameworks

- The three frameworks below are oriented towards “Process” (Appendix 2). This means that these theoretical understandings can be consulted when crafting the intention and underpinning of how the process will run. Meaning, these can be grounding points when beginning to create a strategy.
 - Asset-Based Community Development (ABCD)
 - This framework is important during community listening to understand a community’s assets and strengths in tandem with their needs and areas of opportunity. This way the TE Activator can utilize its available resources to support communities in building upon their current assets and infrastructure, along with their conceptions of their own community.
 - Mobility Equity
 - The Mobility Equity Framework developed by the Greenlining Institute can be described as a combination of the Asset-Based Community Development Framework and focusing equity in an electric transportation transition. Firstly, this framework identifies the mobility needs of the community and then prioritizes the transportation methods that best maximizes benefits and minimizes burdens. Then once these methods are determined, the best approaches are discussed with the community while placing the decision-making power for the community members to have the final say.
 - Essentially, it will be in phases that first determines the transportation needs of the community, education to the community on equitable transportation which leads to the community brainstorming on potential solutions, then to be determined by the community which projects ought to be pursued.
 - Love-Based Aid
 - This framework advocates for an approach to development that is not extractive and paternal, but rather reciprocal and supportive. By identifying issues with current development paradigms, there can be a clear articulation of how to better understand where a community is coming from, creating new pathways to power for community leadership, and making room for different ways of knowing that centers spiritual and emotional dimensions of collaboration.
- The two frameworks below are oriented towards “Strategy” (Appendix 3). These can be used practically when beginning public engagement, by outlining key considerations and benchmarks to target processes. In this way, the “Strategy” frameworks provide opportunities to integrate the theoretical understandings identified as important in “Process” frameworks.
 - Equity and Empowerment Lens
 - This outlines different reflective questions to determine where greater focus, resources, and capacities must go into creating an equitable work environment. Through the 5 P’s (People, Place, Process, Power, Purpose),

communities and institutions can clearly communicate their perspectives and gaps when creating a shared organizational culture, so bridges can be identified prior to project implementation.

- USDN's Spectrum from Community Engagement to Ownership
 - By clearly distincting between different relationships between communities and institutions, this overviews both the cultural and financial requirements for embodying equity. This can be consulted to ensure there is mutual understanding about where the TE Activator stands with deferring to community organizations when changing old and creating new processes to address power consolidation in decision-making.

Going from Public Engagement to Community Ownership

- We hope the TE Activator goes beyond superficial engagement that gleans community input to instead ensure members and organizations are actively shaping the course taken by the projects in their communities.
 - Defer to Community Knowledge
 - As stated in the strategy frameworks above, our main recommendation for community engagement is to move beyond consulting community opinions, but deferring to their knowledge in decision-making. Further, the Strategy & Timeline section above breaks this down into more detail.
 - Take an Intersectional Approach
 - To put it succinctly, shifting power requires an intersectional approach (Appendix 1). In addition to being an underlying foundation to equity work, intersectionality also demonstrates the need to create guiding principles alongside community, prior to formal listening sessions, so there is a clear articulation of how they want to be engaged with. By figuring out the nuances of healthy collaboration from the get-go, this can prevent confrontations down the road and lead to a cooperative process where communities feel like they are talking with project partners, rather than being talked to.
 - Be Slow and Intentional
 - To craft guiding principles based on a community's intersectionality, this collaboration must be slow and intentional, where trust with communities is created over time through consistency and transparency. For additional information about reasoning behind slow and intentional equity work, see the Project Processes & Emerging Conversations section above.

Systemic Policy Adaptations

- These are the “low hanging fruit” policy changes that could be a focus of the TE Activator.
 - Grant Funding for Community-based Organizations
 - As explained by Brianne Fisher from The City of Tempe, federal and regional funding for electric transportation is widespread, however there are very few grants and funding opportunities that focus on individual communities and organizations within those communities. This is

especially true for underserved areas, which have very different assets and needs.

- The TE Activator can work to make regional and federal funding available to community organizations focusing on equity work.
- First-Last Mile Transportation Options
 - This refers to how people without SOVs get to and from public transit stops.
 - These options need to be safe for pedestrians from vehicles on the road, people on transit, and people going to and from transit.
 - Plan for micro-mobility hubs, which connect first-last mile transportation to a larger transportation network.
 - Offer other electric transportation options at these hubs, such as e-bikes and e-scooters.
 - These options should be accessible and accommodating to the youth, elderly, and disabled peoples.
 - There should also be safe pedestrian walkways for people that want to walk, too.
 - Make sure that there is evaluation of actual distance to travel to and from transit. Is it actually a mile or more?
 - Most people won't use transit if it is more than a quarter-mile away, on average (Comfort, 2016).
 - Invest in greater frequency of stops and of pick-up times.
 - This will also increase ridership of public transit in general, if it is accessible to get to and from stops and there is trust they will come regularly.
- Increase Options of Ride-Share
 - With transportation to and from public transit that is more than a mile, ride-share becomes an important mobility option.
 - Expand on connecting ride-share resources to connect with other methods of transportation or engrained in the infrastructure of micro-mobility hubs (as explained above).
 - This could build and expand upon existing business infrastructure, through grant-funded subsidization of Lyft and Uber rides.
 - This would require working with private companies to get consistent discounts or free rides.
 - Collaborating with the emerging sectors within ride-share/car-share will lead to the evaluation of potential solutions that serve all individuals with transportation needs.
- Shade at Transit Stops and Corridors
 - With increasing concerns about the urban heat-island effect, it is important to ensure areas are cool and shaded, especially where people have to wait outdoors for public transportation.
 - Considering the radiation that comes from the sidewalk, in addition to the sun, shade is an important tool to reduce heat (Middel, et al., 2020).

- Develop shaded corridors along walking paths to access transportation routes.
 - Increase the use of drought-resistant and native plants to Arizona for these shaded corridors by working with utilities.
 - Agrivoltaics or solar panel shade structures are also an option to include shade infrastructure in urban planning (OSU, 2021; Rop, 2013).
- Look into emerging research and infrastructure projects for possible solutions.
 - For example, the City of Phoenix is looking into using a non-toxic, cooler asphalt in future infrastructure projects (Gantz, 2021).
- Hold Inclusive Listening Sessions
 - In order to implement the feedback and inputs from residents across Arizona, and target different community needs, it is important to include an inclusive array of voices to better understand their varying views, needs, and assets.
 - Hold listening sessions targeted towards specific populations and demographics (e.g. youth, elderly, disabled) and more general sessions that are open to the public.
 - In accordance with the Honorarium and community grant program, having organizations facilitate and prepare listening sessions (See Timeline & Strategy session).
 - Work with institutional partners to hold inclusive city council/budgetary meetings that are open to the public. (See Accessibility section for more details).
- Offer Educational Programs
 - EV Manufacturing Partners can push against privatization by holding a forum on EV maintenance and upkeep.
 - As the electric vehicle maintenance industry sits, many of these private companies, such as Tesla, actually require any and all maintenance to be conducted at their facilities. And if there is any opportunity to receive maintenance services at another facility that is not Tesla, car owners may be paying significantly more in maintenance costs.
 - Partnering with interested mechanics that reside in these communities is ideal to provide community resources for electric vehicles, as well as acknowledging these communities have developed relationships and trust with certain mechanic industries.
 - Professional Maintenance: Provide EV and ET maintenance programs to teach mechanics or engineers how to work on these new modes of transportation.
 - Charging: Develop EV and ET maintenance programs to manage public charging stations and/or private in-home charging stations.

- Average Maintenance: Hold programs for EV owners/future owners to help them understand how to care for their vehicle long term.
 - Encourage vocational training programs for EV maintenance experts (The Economist, 2021).
- Create and provide educational material for EV owners/future owners that cover a range of topics.
 - Material on in-home charging guidelines that include information on charging during peak hours and other impacts to the home.
 - Easily accessible and reliable information on public charging guidelines, locations, and other essential information for traveling with an electric vehicle.
- Campaign for Public Transit
 - As it is now, public transportation is not nearly as prioritized compared to other methods of transportation. There is also a negative social component which impedes the support for public transportation that cannot be ignored and has created a certain elitism of people not wanting to ride in a public space with other people. Without the inclusion of public transportation as a priority in this transition and acknowledging the increasing transportation costs on our current transit system, this poses a significant risk to underserved communities to lose mobility in the future.
 - Maricopa County is going to continue to grow and single-occupancy vehicles can not be the main option going forward. It is important to bridge the gap and make public transit cool and safe.
 - The Activator can work with community organizations to create a campaign around the benefits of public transit and why it is a vital aspect of transportation.

Systemic Policy for Long-term Resilience

- These are the ambitious, mitigative policy changes that could be a focus of the TE Activator. If outside the TE Activator’s scope, these recommendations can become a focus for the TE Activator’s municipal partners.
 - Offer Free, Accessible Public Transit
 - As stated in Masavi Perea’s interview, transportation options need to be accessible in cost, alongside the focus on frequency of rides and where the energy sources come from.
 - There are other cities, such as the Rio Metro ACCESS Program in New Mexico (Rio Metro Regional Transit District, 2022), that have made this a reality based on an evaluation of those who need transit the most.
 - Differing from the Rio Metro program, transit should be free for all Valley riders, not on a needs-based qualification.
 - This can be seen in Tempe with the free Orbit Shuttle Bus program.
 - There are several cities around the country that are making their buses fare-free (Squires, 2021).
 - Fund Avenues for Multi-Modal ET Network

- Focus on the development of mobility hubs, where multiple methods of transportation connect at various locations.
 - The City of Tempe already has a priority in developing mobility hubs across their region (City of Tempe, 2022).
 - In addition to first-last mile transportation options, there should be greater investment to connect mobility hubs, such as bus-rapid transit (BRT), light rail, and transportation demand management (TDM).
 - Bus-Rapid Transit (BRT) “...is a high-quality bus-based transit system that delivers fast and efficient service that may include dedicated lanes, busways, traffic signal priority, off-board fare collection, elevated platforms and enhanced stations” (Federal Transit Administration, 2015).
 - TDM “...focuses on reducing peak period traffic by attracting solo drivers to carpools or transit, shifting work schedules away from traditional peak hours, and allowing more employees to work at home” (Giuliano, 1992).
- Fund Private EV Ownership
 - Bridging the EV financial gap could be addressed by providing micro-grants for community members to buy used EVs.
 - Federal, regional, local forms of funding that finance this transition are possibilities, as well as private agencies that are related to electric transportation may also have opportunities.
 - Upfront funding is ideal for ensuring economic burdens are not placed on underrepresented communities.
 - Tax incentives and rebates may be able to financially assist this transition, but despite these financial avenues, electric vehicles are still too expensive and unattainable (Greenlining Institute, 2011).
 - The availability of tax credits and rebates will only be as effective as those providing this resource are able to effectively evaluate those who need it and communicate efficiently to these communities.
- Frequency of Transportation Modes
 - To ensure buses and city-funded transportation modes come more frequently, there needs to be greater investment in labor capacity, such as bus drivers, transportation administrators, and other needed personnel.
 - This will increase the desirability of riding transit when arrival and departure times are reliable and consistent.
- Development Considerations
 - Consider displacement, gentrification, and environmental quality issues when planning future transit development projects (See South Phoenix Light Rail Extension).
 - The people, environment, and businesses must be thoroughly considered and incorporated into this transition. The pre-development, during development, and post-development stages produce long term impacts to the livelihoods and the greater region that exacerbates current issues within these communities.

- With the South Phoenix Light Rail Extension, many South Central residents opposed because “[t]here’s no reason to spend a billion dollars on a train when the rest of south Phoenix need the money so bad” (Fish and Boehm, 2018). Additionally, there was concern this would harm local businesses, which it did, with two dozen having closed their doors because of light rail construction combined with COVID-19 (Gomez, 2021).
- Fund Community Security
 - By investing in basic capacities and resources, people can focus on long-term thriving, rather than day-to-day surviving.
 - Instead of providing band-aid solutions, the TE Activator could center social determinants of health that also intersect with transportation (Fawcett & Rabinowitz, n.d.). By focusing on what is conveyed as higher priority by community members, there can be a systemic, holistic approach to co-creating in the solutions space.
 - Food security, housing security, and financial security are all fundamental aspects of socially-embedded work.
 - Socially demanding sustainability issues, that also require integrating cultural differences head-on, have to focus on long-term stability and security through investments in community-run programs.
 - Targeted Universalism is “setting universal goals pursued by targeted processes to achieve those goals... [where] universal goals are established for all groups concerned... [then] strategies developed to achieve those goals are targeted, based upon how different groups are situated within structures, culture, and across geographies to obtain the universal goal... [meaning this approach is] goal oriented, and the processes are directed in service of the explicit, universal goal” (Powell, et al., 2019).
- Roadmap for EV Charging Stations
 - To reach underrepresented demographics, provide charging stations at public spaces, such as libraries, hospitals, community centers, and parks.
 - After conducting the listening sessions, if EV charging is a priority, work with residents and organizations to make a plan for future charging station infrastructure and development.
- Recycling Supply Chain of EV Batteries
 - EV batteries are not necessarily designed to be recycled. Most governments have to force compliance for manufacturers to use recycled battery materials (Morse, 2021).
 - There needs to be thought on where, how, and who will be impacted by the recycling/disposal of EV batteries must be considered, and what recycling chains need to be created for this.
 - Significant benefits to recycling include minimizing pollution and ensuring battery resource regional/national security (Morse, 2021).
 - There are several NGOs working to recycle EV batteries, such as Call2Recycle (Lewis, 2022).
- Regional Collaboration

- To ensure transportation equity cuts across silos and municipal lines, there must be investment in regional capacity. By collaborating between municipalities, and reaching out to County partners such as Maricopa Association of Governments (MAG), there can be the beginning of an approach that expands into a regional plan.
- Community organizations should be brought into these conversations, as well as transportation conversations scale from local to regional.

Electric Transportation Equity Accompanying Documents

Accompanying this document will be a 8-page Equity Roadmap document, a 8-page Community Listening Script, and a one-page brief of our report recommendations. The Roadmap acts as a guide for the TE Activator to ground themselves and potential organizations in their intentions toward implementing equitable electrification. In short, the Electric Transportation Equity Roadmap is a high-level summation of our full report, as it outlines key details of the Community Listening Pilot Project, such as measuring success, potential actors, timeline, resources, accessibility, as well as highlighting recommendations in each category. The Community Listening Script is a separate document that has the script outlined in this report to ensure this can be easily dispersed to TE Activator partners and modified to meet guiding principles created alongside community organizations. Finally, we have created a one-pager to ensure the recommendation subsection of this report can easily be accessed by TE Activator institutional leaders. The TE Activator can utilize this report, the Equity Roadmap, the Community Listening Script, and the one-pager to help conceptualize the approach they take with the Community Listening Project they will conduct to engage and integrate community perspectives into the TE Activator’s decision-making process.

Conclusion

Our team envisions a future with an inclusive and equitable electric transportation (ET) landscape, which has utilized clear and concise institutional dialogue that prioritizes historically underserved peoples to redesign the Valley’s car-centric culture. We envision this process to be completed through collaboration, centered around empathy and listening, as this is the only feasible route to develop transportation equity solutions that serve historically underrepresented communities (Livingston, 2020). Our team has served as social sustainability advisors to the Transportation Electrification Activator, doing grassroots work with local, regional, and national organizations by listening with empathy to each of these organizations' needs and hopes around transportation. Throughout this report, various references have been crucial to guiding our understanding of equity and we highly encourage those utilizing this report to engage with this material as well. This is a process we have acknowledged will take time and should not be rushed, as equity work is slow. We orientated our applied project this way because socially-embedded work is more than creating temporary outcomes. It is about focusing on process, rather than results, and co-creating a shared culture to work towards systemic equity goals.

Tasked with the role of social sustainability advisors, our team sought out the most effective process and deliverables for community-based equity work. We began by analyzing equity frameworks to develop an approach for this task and reaching out to community organizations. Through our research, listening, and discussions our team compiled tiered recommendations for

the TE Activator suggesting systemic policy changes based on community priorities. Our report and recommendations culminate in an Equity Roadmap, which will serve as a detailed summation of this report. The Roadmap details the Community Listening Pilot Project and potential recommendations for the TE Activator. We have also created a Community Listening Script to be utilized in future listening sessions and a one-page brief as an overview of the overall project and deliverables.

Equity work is slow, and as we have developed a detailed plan and groundwork for the TE Activator, we envision this project to be ongoing. Our team has spent time building relationships with communities with the intention and impact of creating a space of trust between the TE Activator and the community. Due to the natural longevity of this project, we have laid the groundwork and see this as a future opportunity for MSUS projects. We hope this project is carried on by the TE Activator and future organizations with equity and community engagement at the heart of it.

References

- AAMC. (n.d.). *The Principles of Trustworthiness*. AAMC Center for Health Justice. <https://www.aamchealthjustice.org/resources/trustworthiness-toolkit#toolkit>
- Arteaga, Deborah. (2022, March 18). Listening Session. By Anna Bartholomew, Grace Logan, Kaleigh Shufeldt, Raven Fielding, and John Stivers.
- Basinger, J. (2021, December). *ACC's Transportation Electrification Plan Approval Will Protect Ratepayers, help Arizona Act on climate, and improve air quality*. Western Resource Advocates. <https://westernresourceadvocates.org/blog/accs-transportation-electrification-plan-approval-will-protect-ratepayers-help-arizona-act-on-climate-and-improve-air-quality/>
- Beck, J., et al. (2020). Behavioral health crisis alternatives. *Vera Institute*. <https://www.vera.org/behavioral-health-crisis-alternatives>.
- Berg, J.H. & Homan, E.C. (2021). Leading together / overcoming the inertia of inequity. ASCD. <https://www.ascd.org/el/articles/overcoming-the-inertia-of-inequity>.
- Berkeley Energy and Sustainability Development. (2020, July 20). *Electric mobility*. Electric Mobility - City of Berkeley, CA. Retrieved from <https://www.cityofberkeley.info/EVCharging/>
- Blynn, Kelly. (2022, February 7). Listening Session. By Grace Logan, Kaleigh Shufeldt, Raven Fielding, and John Stivers.
- Bolin, B, et al. (2005). *The Geography of despair: Environmental racism and the making of south Phoenix*. Research in Human Ecology. <https://www.humanecologyreview.org/pastissues/her122/bolingrineskicollins.pdf?links=false>
- Brennan, J. W., & Barder, T. E. (n.d.). Battery Electric Vehicles vs. Internal Combustion Engine Vehicles: A United States-Based Comprehensive Assessment. Arthur D. Little.
- Bontke, J. (2022, January 25). Phoenix City Council to consider 'vision zero' after increase in traffic deaths. KNXV. <https://www.abc15.com/news/operation-safe-roads/phoenix-city-council-to-consider-vision-zero-after-increase-in-traffic-deaths#:~:text=Unofficial%20data%20from%202021%20puts,40%25%20between%202020%20and%202021>.
- CCL. (2022). 5 ways to take REAL action on DEI (diversity, equity, and inclusion). Center for Creative Leadership. <https://www.ccl.org/articles/leading-effectively-articles/5-powerful-ways-to-take-real-action-on-dei-diversity-equity-inclusion/>.
- CHISPA AZ. (n.d.1.). *Who We Are*. CHISPA AZ. <https://chispaz.org/who-we-are/>
- CHISPA AZ. (n.d.2.). *Ignite the Movement. Advancing Climate Justice*. CHISPA AZ. <https://chispaz.org/>
- CHISPA AZ. (n.d.3.). *Demand for Clean Energy & Clean Air*. CHISPA AZ. <https://chispaz.org/issues/clean/>

- City of Boston. (2020). *Zero-Emission Vehicle Roadmap - Boston*. City of Boston - American Cities Climate Change.
https://www.boston.gov/sites/default/files/file/2020/10/Boston%20ZEV%20Roadmap_1.pdf
- City of Tempe. (2019). *Climate Action Plan*. Climate Action Plan | City of Tempe, AZ.
<https://www.tempe.gov/government/sustainable-tempe/climate-action-plan>
- City of Tempe. (2020). *ANNUAL REPORT 2020 OFFICE OF SUSTAINABILITY CITY OF TEMPE*.
<https://www.tempe.gov/home/showpublisheddocument/94013>
- City of Tempe. (2022). *Draft Climate Action Plan Update 2021*. City of Tempe.
<https://www.tempe.gov/home/showpublisheddocument/94500>
- City of Tempe. (2022). *Orbit Free Neighborhood Circulator Shuttle*. City of Tempe.
<https://www.tempe.gov/government/engineering-and-transportation/transportation/bus-light-rail-paratransit-streetcar/orbit>
- City of Pittsburgh. (2020). *Pittsburgh Public Facilities EV Charging Strategic Plan*. Pittsburgh Public Facilities EV Charging Strategic Plan - American Cities Challenge. Retrieved from
https://apps.pittsburghpa.gov/redtail/images/13902_FINAL_2021_PGH_EV_Strategic_Plan.pdf
- Clarke, S.A. (2021). 5 strategies to advance equity, diversity, and inclusion in the workplace. *Commonwealth*.
<https://www.commonwealth.com/insights/5-strategies-to-advance-diversity-equity-and-inclusion-in-the-workplace>
- Clement, V. (2020). Equity in action report. *City of Tempe*.
<https://docs.google.com/document/d/1jVTTPeabsUWKvW5f6uYXern1O16RBISXSzrKyr5GaFs/edit?usp=sharing>
- Colorado Energy Office. (2022). *Can do Colorado eBike Pilot Program*. Colorado Energy Office.
<https://energyoffice.colorado.gov/zero-emission-vehicles/can-do-colorado-ebike-pilot-program>
- Comfort, P. (2016). *Best Practices: First-Last Mile Strategies - Mass Transit*. Mass Transit.
<https://www.masstransitmag.com/technology/article/12225894/best-practices-first-mile-last-mile-collaboration>
- CPUC. (2022). *Transportation Electrification*. California Public Utility Commission.
[https://www.cpuc.ca.gov/zev/#:~:text=California%20has%20an%20objective%20to,in%20the%20Executive%20Order%20\(E.O.\)&text=Further%2C%20by%202035%2C%20all%20new,California%20must%20be%20ZEVs%20](https://www.cpuc.ca.gov/zev/#:~:text=California%20has%20an%20objective%20to,in%20the%20Executive%20Order%20(E.O.)&text=Further%2C%20by%202035%2C%20all%20new,California%20must%20be%20ZEVs%20)
- Creative Equity Toolkit. (n.d.). Don't make it about you. *Diversity Arts Australia & British Council*.
<https://creativeequitytoolkit.org/topic/anti-racism/dont-make-it-about-you/>
- Creger, H., Espino, J., Sanchez, A. (2018). "Mobility equity framework: How to make transportation work for people." *The Greenlining Institute*.
<https://greenlining.org/wp-content/uploads/2018/03/Mobility-Equity-Framework-Final.pdf>
- CUMU. (2019). Place-based hyperlocal engagement. *Coalition of Urban and Metropolitan Universities*.
<https://www.cumuonline.org/cumu-initiatives/hyperlocal-research/>

- Curran, W. (n.d.) Gentrification is relentless, but not inevitable if locals are able to shift redevelopment. *Phelan US Centre*.
<https://blogs.lse.ac.uk/usappblog/2018/07/26/gentrification-is-relentless-but-not-inevitable-if-locals-are-able-to-help-shape-redevelopment/>.
- Darity, W.S. & Mullen, A.K. (2020). True reparations are a national debt: Localities and individuals should not foot the bill and cannot build systemic remedies alone. *Roosevelt Institute*.
<https://rooseveltinstitute.org/2020/02/25/true-reparations-are-a-national-debt-localities-and-individuals-should-not-foot-the-bill-and-cannot-build-systemic-remedies-alone/>.
- Dostilio, L.D., et al. (2019). Building community capacity via place-based hyperlocal engagement. *Coalition of Urban and Metropolitan Universities*.
<https://www.cumuonline.org/wp-content/uploads/2019/12/Hyperlocal-report.pdf>.
- Dugan, J. (2021). Beware of equity traps and tropes. *ASCD*.
<https://www.ascd.org/el/articles/beware-of-equity-traps-and-tropes>.
- EPA. (2015). *Climate Change and Heat Islands*. Environmental Protection Agency.
<https://www.epa.gov/heatislands/climate-change-and-heat-islands>
- Fawcett, S. & Rabinowitz, P. (n.d.). Addressing social determinants of health and development. *Community Toolbox*.
<https://ctb.ku.edu/en/table-of-contents/analyze/analyze-community-problems-and-solutions/social-determinants-of-health/main>.
- Fish, N. J., & Boehm, J. (2018, June 10). *Protesters in South Phoenix rally against proposed Central Avenue Light-rail extension*. The Arizona Republic.
<https://www.azcentral.com/story/news/local/phoenix/2018/06/10/phoenix-protesters-rally-against-light-rail-plan-central-avenue/687897002/>
- Fisher, Brianne. (2022, March 15) Listening Session. By Anna Bartholomew, Grace Logan, Kaleigh Shufeldt, Raven Fielding, and John Stivers.
- Florida Department of Agriculture and Consumer Services. (2020). Florida Electric Vehicle Roadmap - Executive Report.
https://www.fdacs.gov/ezs3download/download/95682/2638040/Media/Files/Energy-Files/EV-Roadmap-Report/EV_ROADMAP_REPORT_2020.pdf
- FTA. (2013). *Transportation Needs of Disadvantaged Populations: Where, When, and How?* Federal Transportation Administration.
https://www.transit.dot.gov/sites/fta.dot.gov/files/FTA_Report_No._0030.pdf
- Fuels Institute. (2021). EV consumer behavior. Electric Vehicle Council.
<https://www.fuelsinstitute.org/Research/Reports/EV-Consumer-Behavior/EV-Consumer-Behavior-Report.pdf>.
- Gantz, T. (2021, September 23). *Here's how cool pavement pilot program is impacting Phoenix*. AZ Big Media.
<https://azbigmedia.com/business/heres-how-cool-pavement-pilot-program-is-impacting-phoenix/#:~:text=Phoenix%20officials%20unveiled%20a%20new,establish%20a%20similar%20cooling%20effect>

- Giuliano, G. (1992). *Transportation Demand Management: Promise or Panacea?*. Journal of the American Planning Association, 58:3, 327-335, DOI: 10.1080/01944369208975811Glandorf, J. (2020, November 5). *On the move: Unpacking the challenges and opportunities of electric vehicles*. EESI. <https://www.eesi.org/articles/view/on-the-move-unpacking-the-challenges-and-opportunities-of-electric-vehicles>.
- Gómez, L. (2021, September 8). *Light rail construction the final straw for Azucar Coffee, the latest South Phoenix business to close*. Arizona Mirror. <https://www.azmirror.com/2021/09/08/light-rail-construction-the-final-straw-for-azucar-coffee-the-latest-south-phoenix-business-to-close/>
- Greenlining Institute. (2011). *Electric Vehicles: Who's Left Stranded*. The Greenlining Institute. (2020, September 25). <https://greenlining.org/wp-content/uploads/2013/02/ElectricVehiclesReport.pdf>
- Haines, A. (2009). Asset-based community development. *An introduction to community development*, 38, 48. <https://books.google.com/books?hl=en&lr=&id=9QwhBOAAQBAJ&oi=fnd&pg=PT128&dq=assets-based+community+development&ots=ZdMLNr7L2P&sig=fjSugLhNALSEvOe7rms9SIC6nRM#v=onepage&q=assets-based%20community%20development&f=false>
- Harrison, N. (2021). Shift the power. Free the money. Lessons in community-led grantmaking. Part III. *CommunityBuild Ventures*. <https://communitybuildventures.com/shift-the-power-free-the-money-lessons-in-community-led-grantmaking-part-iii/>.
- Hsu, C.W. & Fingerman, K. (2021). Public electric vehicle charger access disparities across race and income in California. *Transport Policy*, vol. 100, p. 59-67. <https://doi.org/10.1016/j.tranpol.2020.10.003>.
- Hunt, L.M. (2009). Nestled sustainability. *Research Gate*. https://www.researchgate.net/figure/Nested-sustainability-where-economy-and-social-dimensions-are-constrained-by_fig1_273755662.
- IEA. (2020). *Global EV Outlook 2020*. IEA. <https://www.iea.org/reports/global-ev-outlook-2020>.
- Johnston, R. & Marwood, K. (2017). Action heritage: research, communities, social justice. *International Journal of Heritage Studies*. <https://doi.org/10.1080/13527258.2017.1339111>.
- LCV. (2019). *Phoenix Union High School District Begins Electric School Bus Pilot Program*. League of Conservation Voters. <https://www.lcv.org/article/phoenix-union-high-school-district-begins-electric-school-bus-pilot-program/>
- LCV. (2017, November 9). *Clean Buses for Healthy Niños*. League of Conservation Voters. <https://www.lcv.org/chispa/clean-buses-healthy-ninos/>
- Lewis, M. (2022, March 21). *Here's what the future of battery recycling is going to look like for EV owners*. Electrek. Retrieved from <https://electrek.co/2022/03/21/heres-what-the-future-of-battery-recycling-is-going-to-look-like-for-ev-owners/>
- Livingston, R. (2020). *How to promote racial equity in the workplace*. Harvard Business Review. <https://hbr.org/2020/09/how-to-promote-racial-equity-in-the-workplace>.

- Lohan, T. (2021). *Will the race for electric vehicles endanger the earth's most sensitive ecosystem?* The Revelator. <https://therevelator.org/ev-batteries-seabed-mining/>.
- Love, B.L. (2021). How to make anti-racism more than a performance. *Education Week*. <https://www.edweek.org/leadership/opinion-empty-promises-of-equity/2021/01>.
- Maricopa County Public Health. (2020). *Heat Associated Deaths in Maricopa County, AZ Final Report for 2020*. Maricopa County. <https://www.maricopa.gov/ArchiveCenter/ViewFile/Item/5240>.
- Martin, N. (2021). Decolonize the lithium boom. *The New Republic*. <https://newrepublic.com/article/162350/decolonize-lithium-boom-indigenous-rights>.
- Middel, A, et al. (2020). Solar reflective pavements – A policy panacea to heat mitigation? *Environmental Research Letters*, 15(6). <https://iopscience.iop.org/article/10.1088/1748-9326/ab87d4>.
- Morse, I. (2021). *Millions of electric cars are coming, what happens to all dead batteries*. Science. Retrieved from <https://www.science.org/content/article/millions-electric-cars-are-coming-what-happens-all-dead-batteries>
- Multnomah County. (2021, December 6). *Equity and empowerment lens*. Equity and Empowerment Lens. <https://www.multco.us/diversity-equity/equity-and-empowerment-lens>
- Murphy, L. (2022). Identifying the “fruit and root” of systemic racial inequity. Jobs for the Future. <https://www.jff.org/what-we-do/impact-stories/building-equitable-pathways/blog-series/identifying-the-fruit-and-root-of-systemic-racial-inequity/>.
- NRDC. (2021, March 21). *St. Louis charges toward Clean Air with Electric Vehicles*. Natural Resources Defense Council. <https://www.nrdc.org/experts/kelly-blynn/st-louis-charges-toward-clean-air-electric-vehicles>
- Okun, T. (2001). *White supremacy culture*. Changework dismantling racism workbook. https://cdn.ymaws.com/www.wpha.org/resource/resmgr/health_&_racial_equity/whitesupremacycultureinorgan.pdf.
- OSU. (2021). *Sustainable farm agrivoltaic*. Oregon State University. <https://agsci.oregonstate.edu/newsroom/sustainable-farm-agrivoltaic>.
- Perea, Masavi. (2022, March 31). Listening Session. By Anna Bartholomew, Grace Logan, and Kaleigh Shufeldt.
- Pope, R. (2014). Spatiotemporal patterns, monitoring network design, and environmental justice of air pollution in the Phoenix metropolitan region: a landscape. Approach. <https://keep.lib.asu.edu/items/152753>.
- Powell, J.A., et al. (2019). Targeted universalism: policy & practice. *Other & Belonging Institute*. <https://belonging.berkeley.edu/targeted-universalism>.
- Rheingold, H. (2001). What questions have disappeared? *Edge*. <https://www.edge.org/response-detail/12049>.

- Rop, A. (2014, May 23). *ASU solar-panel structures provide shade for students*. The Arizona Republic. <https://www.azcentral.com/story/news/local/tempe/2014/05/23/asu-solar-panels/9499973/>
- Rio Metro Regional Transit. (2022). *Rio Metro ACCESS Program: Rio Metro Regional Transit, NM*. Rio Metro ACCESS Program | Rio Metro Regional Transit, NM. <https://www.riometro.org/445/Rio-Metro-ACCESS-Program>
- Salt River Project. (2021, November 4). *Valley Cities, Nonprofits and Commercial Organizations Partner to Advance EV Market in Arizona*. Valley cities, nonprofits and commercial organizations partner to advance EV market in Arizona. <https://media.srpnnet.com/valley-cities-nonprofits-and-commercial--organizations-partner-to-advance-ev-market-in-arizona/>
- Schwenk, K. (2022, March 4). For pedestrians in Phoenix, 2021 has been deadly. Phoenix New Times. <https://www.phoenixnewtimes.com/news/for-pedestrians-in-phoenix-2021-has-been-especially-deadly-12263810>
- Seabrook, J. (1997). Reform and transformation. New Internationalist. <https://newint.org/features/1997/11/05/reform>.
- The Economist. (2021, October 3). *Servicing and repairing electric cars requires new skills*. The Economist. <https://www.economist.com/science-and-technology/servicing-and-repairing-electric-cars-requires-new-skills/21805752>
- Smithsonian. (n.d.). Being antiracist. *National Museum of African American History and Culture*. <https://nmaahc.si.edu/learn/talking-about-race/topics/being-antiracist>.
- Spade, D. (2020). Solidarity not charity: Mutual aid for mobilization and survival. *Social Text*, 38(1). <http://www.deanspade.net/wp-content/uploads/2020/03/Mutual-Aid-Article-Social-Text-Final.pdf>.
- Squires, C. (2021). American cities are experimenting with free public transit. *Quartz*. <https://qz.com/2048165/american-cities-are-experimenting-with-free-public-transit/>.
- TCAA. (n.d.). *Fostering Dignity and Self-Reliance*. Tempe Community Action Agency. <https://tempeaction.org/what-we-do/>
- TE. (2021). Why EV gentrification is leading to urban charging deserts - and how ride sharing could help. *Transport Evolved*. <https://www.transportevolved.com/articles/why-ev-gentrification-is-leading-to-urban-charging-deserts-and-how-ride-sharing-could-help>.
- TE Activator. (2022, January 11). *TE Activator Members*. Sustainability Activator. <https://sustainabilityactivator.com/partners/>
- TE Activator. (2021). *Activating Transportation Electrification in Arizona*. TE Activator Playbook 2021. Retrieved from <https://sustainabilityactivator.com/>.
- TE Activator. (2022, March 31). Meeting. With Anna Bartholomew, Grace Logan, and Kaleigh Shufeldt.

Ulluwishewa, R. (2017). Development Aid as a Gift of Love: Re-inventing Aid on a Spiritual Foundation. *PROBLEMY EKOROZWOJU-Problems Of Sustainable Development*, 12(2), 109-118.
https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3000819

USDN. (2022). Urban sustainability directors network. <https://www.usdn.org/index.html#/>.

USDN. (n.d.). *From community engagement to ownership*.
https://www.usdn.org/uploads/cms/documents/community_engagement_to_ownership_-_tools_and_case_studies_final.pdf

Vey, J.S. & Storrington, N. (2022). Hyperlocal: Place governance in a fragmented world. *Brookings*.
<https://www.brookings.edu/book/hyperlocal/>.

Vandell, P. (2020, September 30). Pedestrians in Arizona are more likely to be hit and killed than nearly any other state. why? The Arizona Republic.
<https://www.azcentral.com/story/news/local/arizona-traffic/2020/09/28/arizona-has-4th-highest-pedestrian-death-rate-country-why/3511850001/>

Walling, M. (2021). EV charging stations multiply, but are often out of reach for disadvantaged populations. *Stanford University*.
<https://andthewest.stanford.edu/2021/ev-charging-stations-multiply-but-are-often-out-of-reach-for-disadvantaged-populations/>.

White, T. (2021). How intent and impact differ and why it matters. *Healthline*.
<https://www.healthline.com/health/intent-vs-impact>.

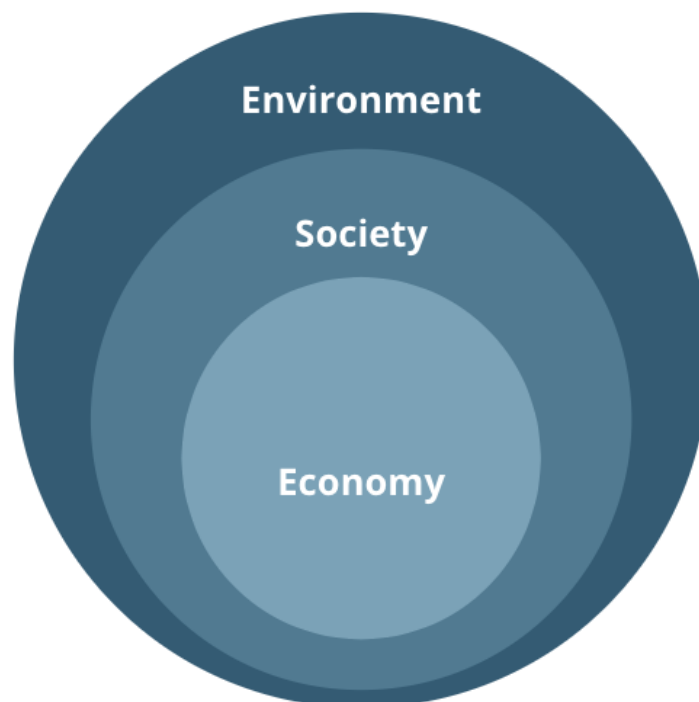
Xcel Energy. (2021). *Transportation Electrification Plan*. Xcel Energy.
https://www.xcelenergy.com/staticfiles/xcel-responsive/Company/Rates%20&%20Regulations/Regulatory%20Filings/20A-0204E-2021-2023_TEP_Updated.pdf

Appendix

Appendix 1: Diagrams

Nestled Sustainability Diagram

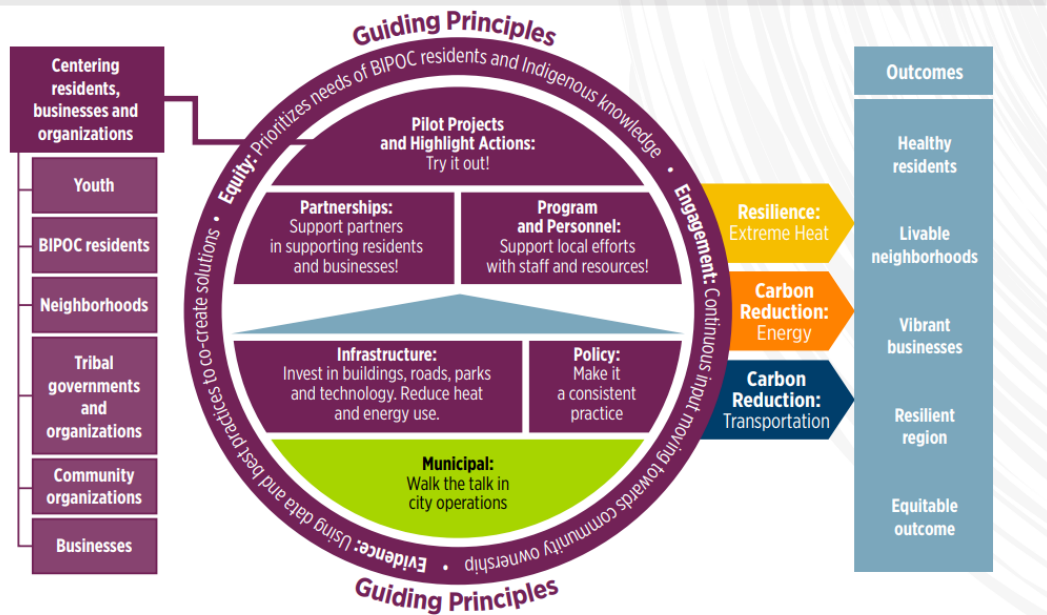
This diagram, also called Strong Sustainability, demonstrates how the environment is the overarching space where humans have created their society. Within this society, there further is an economy - a system of choices - that humans have also constructed (Hunt, 2009). This diagram conveys the inherent interdependence and connection between the three pillars of sustainability, rather than the typical Venn diagram that conveys the possibility to pick two pillars (Environmental Protection and Economic Viability) while putting less focus on the third (Social Equity).



Draft Climate Action Plan for the City of Tempe - Theory of Change

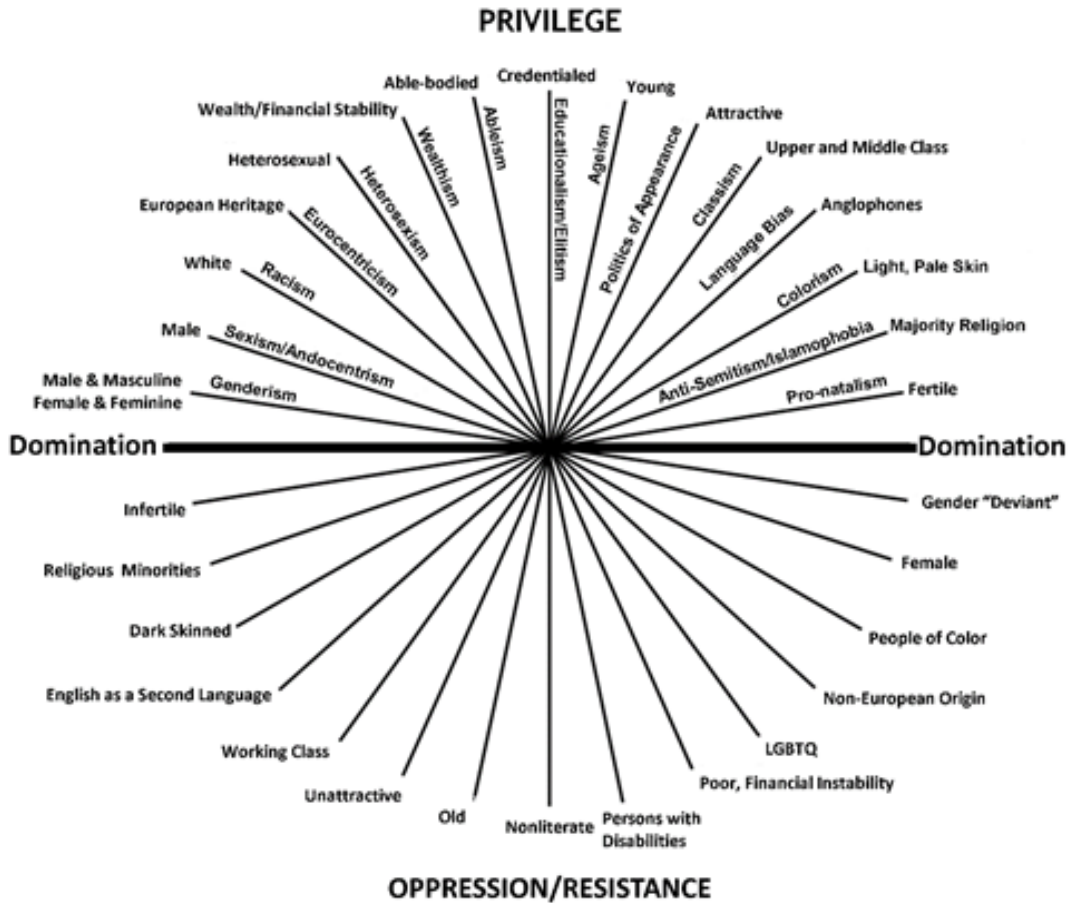
Below is a visual that ties together how the City of Tempe envisions their departments actions linking community voices to their policy and programs, therefore creating outcomes that serve the mission of their Office and of the city's strategic budgetary priorities.

Theory of change



Axes of Power and Oppression Diagram

The Axes of Power and Oppression Diagram is a visual depiction of intersectionality. This links systems of power and privilege to their corresponding systems of oppression, and also links them to the everyday experiences that enact these systems personally. For example, the line that reads “Upper to Upper-Middle Class” on the Privilege/Society Normatives side is directly linked to “Working Class” on the Oppression/Resistance side of the diagram. These two personal experiences are then tied together through the power structure of classism, that creates the conditions of both enforcing societal norms and oppression.



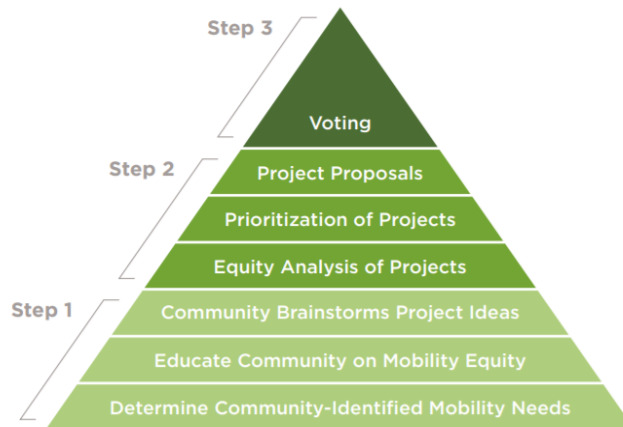
Appendix 2: Process Frameworks

Mobility Equity Framework

The Greenlining Institute proposed a mobility equity framework that forms “a transportation system that increases access to high quality mobility options, reduces air pollution, and enhances economic opportunity in low-income communities of color” (Creger, et al., 2018).

The three steps of this framework include:

- Step 1: Determine the appropriate mobility needs of the community
- Step 2: Conduct an equity analysis of the proposed projects from the community
- Step 3: Centralize decision-making power within the community



These steps provide a backbone to how team TEA will identify the needs of communities by working alongside them.

The Mobility Equity Framework is centered on equity and community power and is supported by traditional decision making frameworks to identify needs. The framework is divided into three sections, the first focusing on determination of communities and their mobility needs, the second phase evaluates the equitability of proposed projects, and the final phase incorporates traditional decision-making frameworks that place power within the community (Creger, et al., 2018).

For this report, Team TEA focused on the first step in the framework by determining the appropriate mobility needs of the community.

Asset-Based Community Development

Asset-based Community Development (ABCD) provided a backbone for how team TEA interacted with communities and organizations. ABCD focuses on a community's capacities and assets for engagement and future development, rather than their problems and what they are lacking. The framework is beneficial to help build a community's capacities by determining their current assets and strengths. ABCD centers on low- to moderate-income communities to incorporate financial, economic, environmental, and social sustainability. In this context, assets can refer to physical, human, social, financial, environmental, political, or cultural capital. The process of ABCD starts with community organizing and leads to visioning, planning, public participation, and implementation and evaluation. While the TE Activator did not focus on development within a specific community, this framework is necessary to provide an inclusive and equitable landscape for community members (Haines, 2009).

Love-Based Aid

Love-Based Aid is a different orientation to serving community that centers the emotional and spiritual development of everyone involved, rather than narrow economic development for the external world. This requires a shift within developmental aid toward spirituality rooted in love that connects us at "...the quantum level", causing "...an inner transformation from self-centeredness to selflessness" (Ulluwishewa, 2017). When this inner shift happens, we can begin developing in a way that is not extractively transactional, but reinforcing reciprocal. Alongside this, acknowledging the soft-wired perceptions of aid that come from decades of

“...self-centeredness, greed and fear which are symptoms of spiritual underdevelopment” (Ulluwishewa, 2017). Therefore, “...service activities [must] be interpreted as love-in-action and... [s]ervice, in this context, contributes to the spiritual growth of those who serve while rendering material benefits to those who are served” (Ulluwishewa, 2017). When discussing development, Team TEA felt it was important to ground the process of our research with this framework, as this explicitly points to the white supremacy culture (Okun, 2001) evident within modern aid programs externally, and refocuses on the love and spirit that unites cooperation with another internally.

Appendix 3: Strategy Frameworks

Equity and Empowerment Lens i.e. “5 P” Framework

The Equity and Empowerment Lens “...is a set of principles, reflective questions, and processes that focuses at the individual, institutional, and systemic levels...” that analyzes People, Place, Process, Power and Purpose when crafting decisions (Multnomah County, 2021). The “5 P’s” can be used to analyze and critically question the planning processes surrounding racial equity projects and programs. By “...deconstructing what is not working around racial equity...” to then reconstruct and support what is working, there can both be a shift in how we think about and make decisions, while healing our structures, our environments, and ourselves during the process toward racial equity outcomes (Multnomah County, 2021). This can directly be used when crafting strategies throughout the strategy timeline, in addition to being used to revisit the proposed trajectory as the timeline is enacted.

- People:
 - Consider physical, spiritual, emotional, contextual, and intersectional (See Diagram in Personal Identities section) effects of the issue/decision.
- Place:
 - How are public resources and investments distributed geographically when considering social-ecological impacts and environmental justice concerns of the issue/decision?
- Process:
 - What processes are traumatizing and how do we create meaningful relationships that include communities most affected by the inequities of this issue/decision?
- Power:
 - Who is accountable to shift power dynamics in the current issue, policy, or program decision-making structure to better integrate voices and priorities of BIPOC communities?
- Purpose
 - How can this issue/decision transform the way we make equitable decisions, deconstruct and reconstruct our structures, transform and support our environments, and heal ourselves?



USDN's Spectrum from Community Engagement to Ownership

USDN, or the Urban Sustainability Directors Network, is a peer learning network for local sustainability officials in the United States and Canada "...to pursue collaborative projects that address urgent challenges and timely opportunities facing multiple cities" (USDN, 2022). USDN's Spectrum from Community Engagement to Ownership articulates how and why equity work requires collaborative governance and power shifting. Direct participation and facilitation over community development and project implementation is vital to ensure communities are involved in decisions and solutions that impact them. Further, "[t]his level of [community] participation unleashes much needed capacity [that] also requires initial capacity investments across multiple sectors to achieve systems changes and culture shifts needed (USDN, n.d.). To bridge the mismatch between institutional intentions, the messages conveyed to communities, and the actions taken to reach equity goals, there must be a reorientation towards community power building in tandem with institutional power shifting.

Stance towards community	0 IGNORE	1 INFORM	2 CONSULT	3 INVOLVE	4 COLLABORATE	5 DEFER TO
Impact	<i>Marginalization</i>	<i>Placation</i>	<i>Tokenization</i>	<i>Voice</i>	<i>Delegated Power</i>	<i>Community Ownership</i>
Community Engagement Goals	Deny access to decision-making processes	Provide the community with relevant information	Gather input from the community	Ensure community needs and assets are integrated into process and inform planning	Ensure community capacity to play a leadership role in implementation of decisions	Foster democratic participation and equity by placing full decision-making in the hands of the community; bridge divide between community and governance
Message to Community	<i>"Your voice, needs, and interests do not matter"</i>	<i>"We will keep you informed"</i>	<i>"We care what you think"</i>	<i>"You are making us think (and therefore act) differently about the issue"</i>	<i>"Your leadership and expertise are critical to how we address the issue"</i>	<i>"It's time to unlock collective power and capacity for transformative solutions"</i>
Activities	Closed-Door Meetings Misinformation Systematic Disenfranchisement Voter Suppression	Fact Sheets Open Houses Presentations Billboards Videos	Public Comment Focus Groups Community Forums Surveys	Community Organizing & Advocacy House Meetings Interactive Workshops Polling Community Forums	MOUs with Community-Based Organizations Community Organizing Citizen Advisory Committees Open Planning Forums with Citizen Polling	Community-Driven Planning Consensus Building Participatory Action Research Participatory Budgeting Cooperatives
Resource Allocation Ratios	100% systems admin	70-90% to systems admin 10-30% to promotions and publicity	60-80% to systems admin 20-40% to consultation activities	50-60% to systems admin 40-50% to community involvement	20-50% to systems admin 50-70% to community partners	80-100% to community partners and community-driven processes that ideally generate new value and resources that can be invested in solutions

Appendix 4: Contact Information

Stakeholders	Name & Title	Contact Information
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Tempe Community Action Agency (TCAA)	Debra Bacorn, Community Engagement Supervisor	Email: DebraB@tempeaction.org

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City of Tempe	Bonnie Richardson Robert Yabes	Email: bonnie_richardson@tempe.gov Email: robert_yabes@tempe.gov
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Unlimited Potential	Emma Viera	Email: executivedirector@unlimitedpotentialaz.org Phone: (602) 305-4742
Spaces of Opportunity (Farmers Market)	Tawsha	Phone: (480)-270-9414
Spaces of Opportunity (Volunteer Coordinator)	Darren Chapman	Email: darren.chapman@tigermountainfoundation.org Phone: (213)-300-8846
Spaces of Opportunity (Incubator Farm Plots Program)	John	Phone: (602)-509-6042
Spaces of Opportunity (Community Garden)	Bruce Babcock	Email: bruce.babcock@tigermountainfoundation.org Phone: (602)-826-9824
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