

CONDUCTING
CLIMATE
RESEARCH TO
ASSESS CLIMATE
IMPACTS ON
TRANSIT



GREENLIGHT GREENPAPER

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The Valley Metro Project Team assembled research findings into a three-page summary report to assess how shade structures affect ridership of the light rail.



CREATED BY GREENLIGHT AT
ARIZONA STATE UNIVERSITY: MIA CZARNECKI | SYDNEY
MILLERWISE | SATERRA GIBBON | NOAH POZEFSKY

PROJECT PARTNER: VALLEY METRO
MACKENZIE MCGUFFIE

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Challenges & Opportunities

Valley Metro was concerned with the effect of heat on ridership in warmer months. On days with the most severe heat, walking to various light rail stops and waiting with no shade creates potential health hazards. Our team also lacked the data on which light rail stops were in the greatest need of shading.

These challenges created an opportunity for our team to analyze how shade affects thermal comfort, and how the level of thermal comfort correlates to ridership. To support our case, we also analyzed future climate projections in the Phoenix Metro area to determine if increasing temperatures will require the implementation of more shade structures.

Recommended Solutions

After speaking with our Project Partner, we decided to present our recommendations in the form of a report and survey. We researched thermal comfort studies from the Phoenix area as well as future climate projections. We also surveyed transit riders on their level of thermal comfort and presented our findings. We found that the future climate of our state warrants significant concern. Moving forward, we recommend that Valley Metro continues this research to support the implementation of new shading solutions. We recommend that they focus on areas with high sun exposure and low natural shading. They can do this by adding high-shade plants to the stations and increasing urban forestry in the walksheds.

Project Benefits

BENEFITS TO PROJECT PARTNER

Our Project Partner gained a report outlining how climate is expected to change in the Phoenix-metro area, coupled with an evaluation of the importance of strategic shade to transit riders. This will serve as a baseline as Valley Metro begins strategically increasing shade around light rail stops.

BENEFITS TO SOLUTIONEERS

Through this project, we developed a better understanding of thermal comfort in Arizona and richer knowledge of the Valley Metro light rail system. Additionally, we had the opportunity to visit the Valley Metro facility, which gave us a behind the scenes look into the operations of Public Transit within the Phoenix Metropolitan area. Ultimately, we learned how to be adaptable when faced with the pandemic through strong virtual communication and flexibility.

BENEFITS TO THE COMMUNITY

Light rail riders will have their voices heard through the survey findings and will one day have better shading at their stops, making their public transit more comfortable and safe.