

**Thesis Project Portfolio**

**Streets for People**

(Technical Report)

**An Analysis on Transforming Walkability in Virginia**

(STS Research Paper)

An Undergraduate Thesis

Presented to the Faculty of the School of Engineering and Applied Science

University of Virginia • Charlottesville, Virginia

In Fulfillment of the Requirements for the Degree

Bachelor of Science, School of Engineering

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## **Sociotechnical Synthesis**

Reducing vehicle traffic in the United States is not easy to achieve, especially when a city's infrastructure is designed to force its community members to own cars. The automobile boom era that started in the latter part of the 20's century was a movement that allowed the widespread of the population by making relocations to urban land areas possible. From this era, today, there are many reasons why cities are designed to increment driving rather than to focus on creating a more walkable environment. In recent years, pedestrian-friendly areas started to attract more popularity, and the COVID-19 pandemic accelerated the implementation of projects seeking to implement redesign strategies that would allow access to pedestrians.

The technical and STS parts of this Research paper are directly related. On the one hand, the technical part seeks to understand the repurposing of streets. The STS research paper focuses on implementing and understating the projects that directly affected walkability. The STS research thesis will discuss the importance of walkability and how the State of Virginia, with the help of technology and powerful influencers, can implement, conceptualize, and battle over walkability. This research paper made me aware of the potential for improvement in numerous places around Virginia. It motivated me to implement a Sustainable Transition framework where technology and powerful influencers collaborate to enact rule changes that turn cities into walkable ones. The technical section of this research study aims to gain a better understanding of contemporary street repurposing through the use of many research questions. Along with the city transportation engineers and planners that directed the repurposing of these street spaces, the design team will build a survey/interview approach to address these topics. The team will consolidate lessons learned and best practices to make additions and improvements to the present National Association of City Transportation Officials (NACTO) recommendations for urban street design. These studies may assist communities in determining the most effective techniques and strategies for reusing street areas, including location, scope, space allocation, and other considerations.

To summarize, I am pleased with the data I obtained at both the individual and group level. This year-long capstone project taught me the value of collaboration and the critical nature of group relationships in achieving excellent outcomes. Our primary learning from encountering hardship was that the only way to overcome obstacles was to collaborate and share knowledge and perspectives. These scenarios taught us how powerful we were when it came to seeking solutions.

Finally, I would like to thank our faculty members in charge, T. Donna Chen (Department of Engineering Systems and Environment), Andrew Mondschein (school of Architecture), and Luca Cian (Darden School of Business), alongside our mentor Austin Angulo for all the help and support throughout this entire process.