

Problem Statement

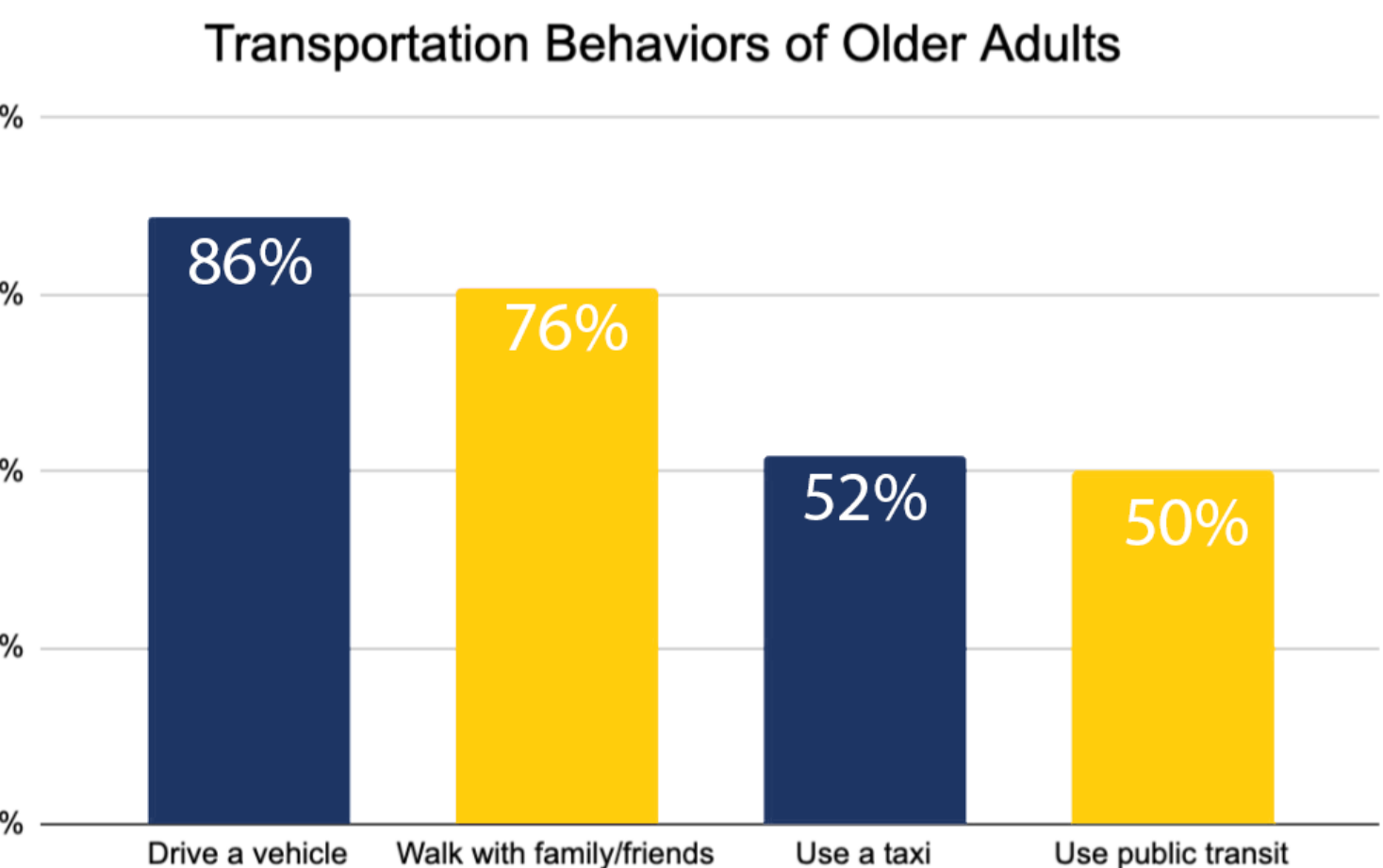
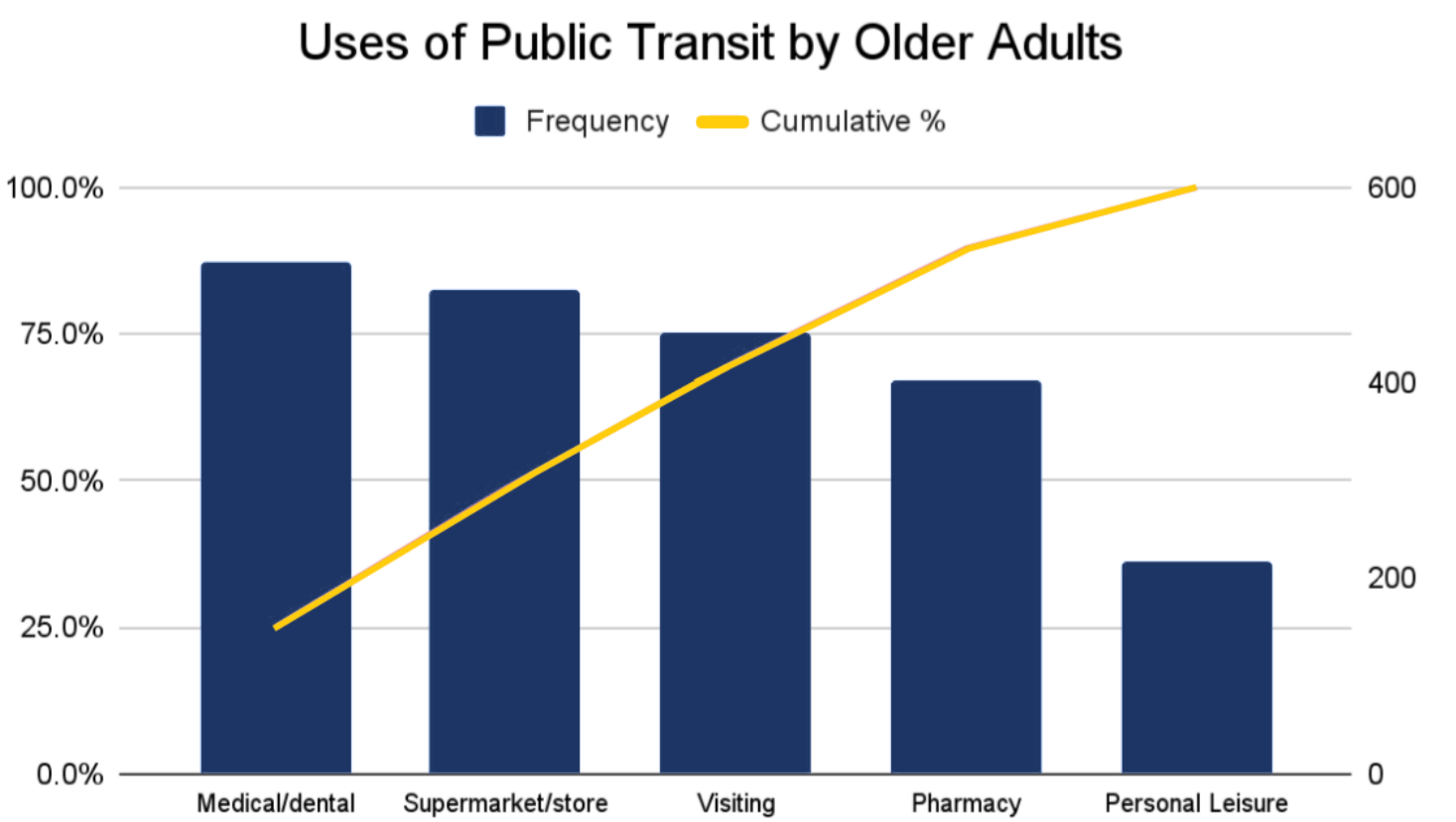
Public transportation is not used by older adults due to lack of accessibility. There are various reasons there is a lack of accessibility in public transportation, for example, older adults struggle with safety, wayfinding, and technology usage. Aging in place involves autonomy about choosing where to live but transportation affects this decision. If an older adult that is experiencing aging in place cannot access basic needs due to transportation issues, their decision about where to live is made for them and they can no longer stay in the residence in which they prefer. Accessible public transportation can help these older adults stay in their residences by connecting them to places that cater to their needs.

Project Value Statement

Implementing a light rail design that caters to the needs of older individuals would be valuable for inclusivity and safety. Older adults will be more willing to travel on public transportation if there is a design in place that is easily accessible. Public transportation is beneficial for the economy, environment, and community.

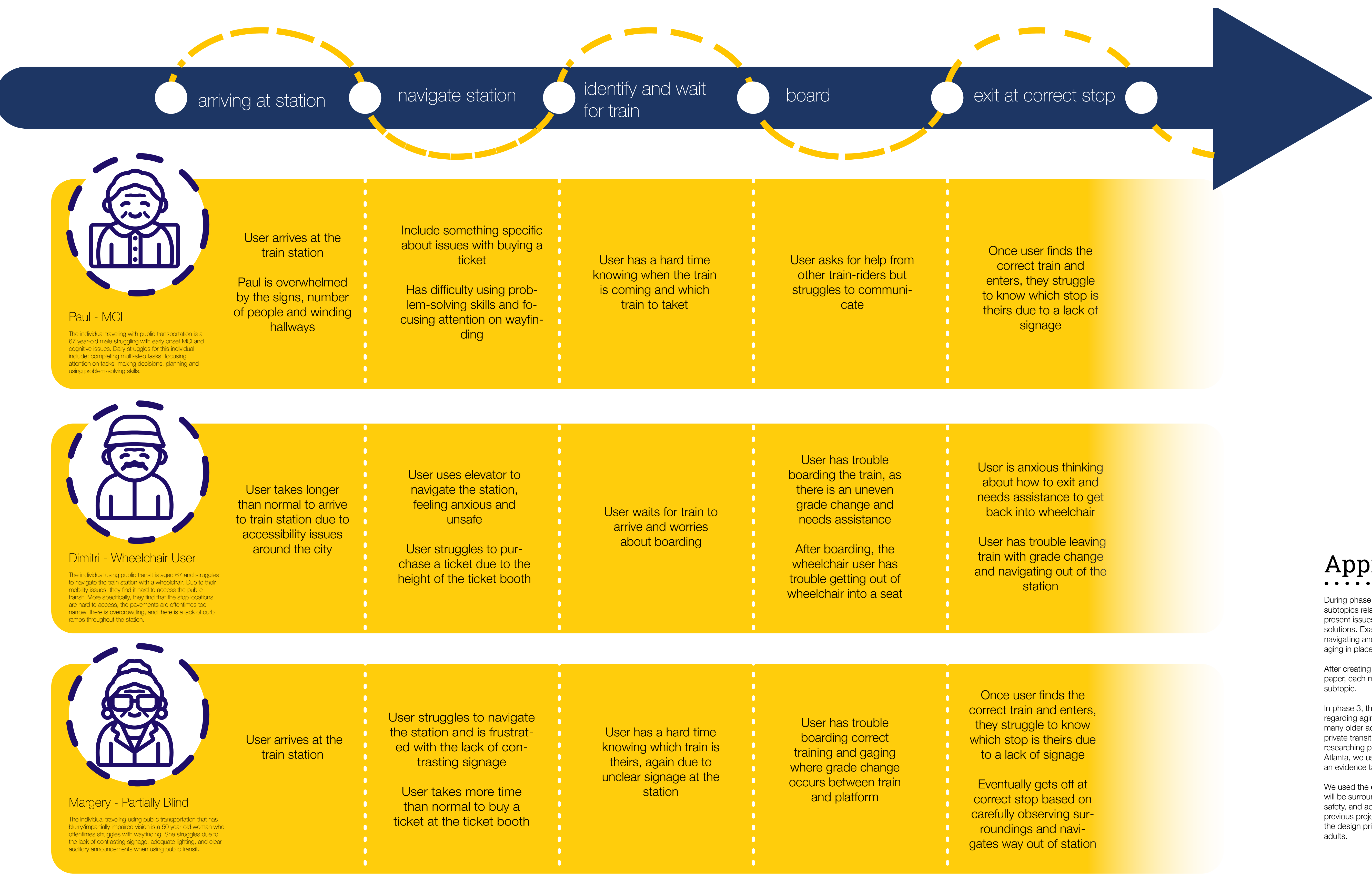
What is Aging in Place?

"Aging in place" is when adults continue living in a residence of their choice for as long as they are able. The majority of older adults prefer staying in their own residence as they age. Aging in place is beneficial for older adults and community members; older adults benefit include self-esteem improvement and community members benefit from more active older adults in the community.



Objective

Older adults who wish to age in place struggle to maintain independence in an urban environment due to public transportation challenges relating to safety, wayfinding, technology, and accessibility.



Approach/Methods

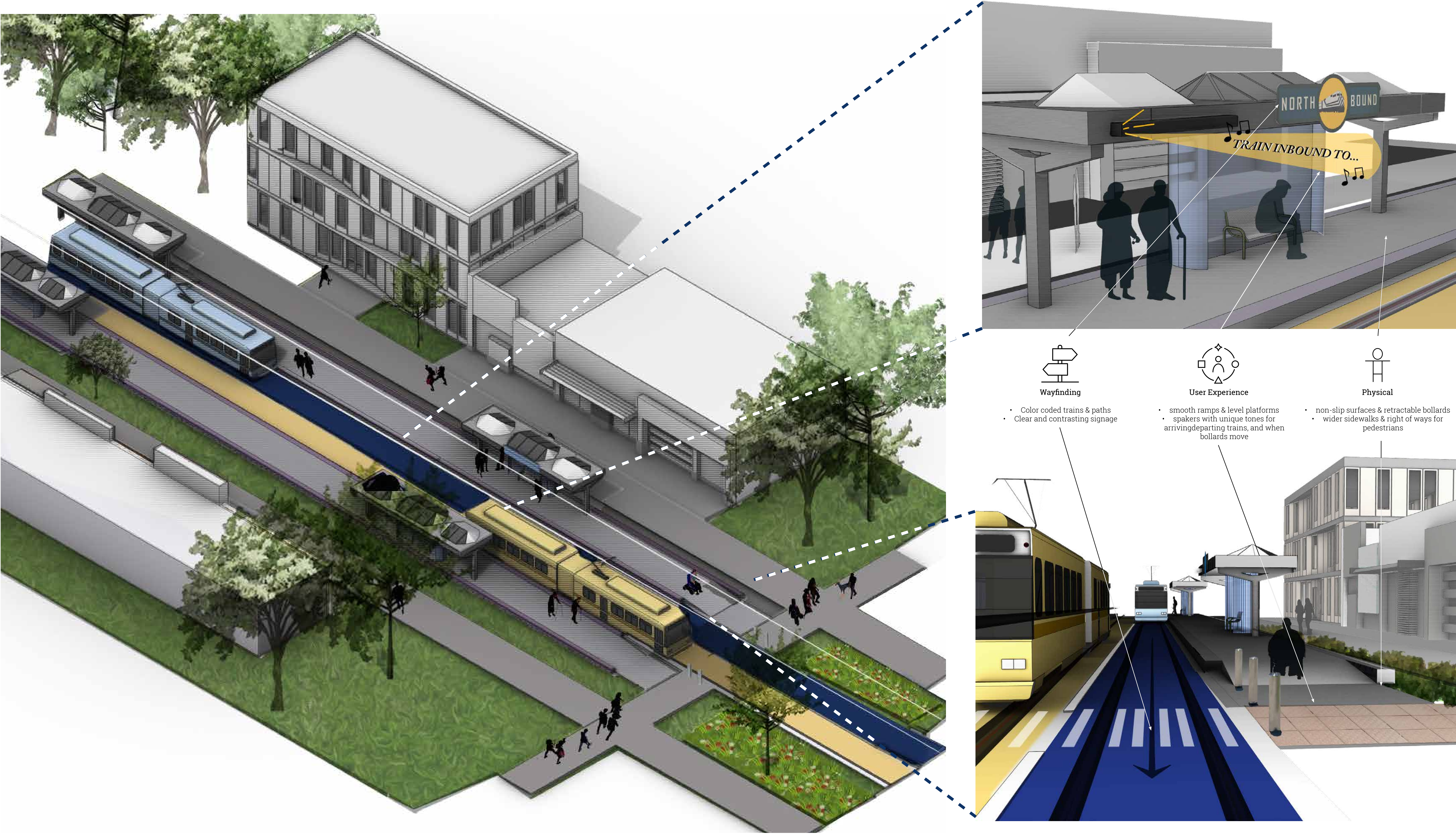
During phase 1 of the course, members of the team conducted research on a specific subtopics related to the issue of aging in place. The research paper topics revolved around present issues that inhibit aging in place and analyzed the feasibility of implementing various solutions. Examples include the benefits of emerging technologies such as smart watches, navigating and wayfinding in suburban landscapes, and the mental and physical dynamics of aging in place.

After creating a realistic journey map of an individual facing the challenges described in our paper, each member of the team created a poster to create a visual representation of their subtopic.

In phase 3, the team was formed to combine our subtopics to address a broader issue regarding aging in place. We decided to focus on urban environments and understood how many older adults may not be able to travel on their own and may have to rely on public or private transit. In efforts to be inclusive of different financial situations, we moved forward with researching public transit. Given that Marta is the most prominent form of public transit in Atlanta, we used it as a baseline, as well as solutions in other cities around the world, to develop an evidence table with citations to summarize our findings.

We used the evidence table in phase 3 to develop design solutions for the future light rail that will be surrounding urban Atlanta. We narrowed down our categories of focus to wayfinding, safety, and accessibility in regards to light rail stations. With a combination of research from our previous projects, in-class presentations, and data/survey analysis, the team was able to develop the design principles that are necessary to consider when designing public transit for aging adults.

Citations
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Design Principles



Physical »

Grade Change: By including a subtle grade change, entering the station will be made easier for older adults that use wheelchairs or have mobility issues. By including a ramp to mitigate grade changes between the tram and ground level, less force is required to move up between the elevations.
Non-Slip: Non-slip surfaces are included to prevent falls in the station and tram. Each year, over 3 million older adults are treated for fall injuries in the emergency department (Bergen et al.). Falls are a huge cause for concern in the aging populations, and therefore should be thought about when designing. By incorporating non-slip surfaces, the station promotes safety and well-being of older adults.
Railings: all surfaces that are elevated more than a quarter inch at the station will have railings that will ease traveling and navigating the station for users.
Lighting: natural light and comfortable artificial light



Wayfinding »

Bold/Distinguishable Signage
Rail Schedule
Audio-Visual Support
Color/Shade of Trams: Trams are color-coded in the design to be yellow and blue. These contrasting colors, along with arrows makes wayfinding much easier. This is especially true for users that are colorblind or have visual impairments. Those with cognitive issues may also benefit from the simplicity of the design that differentiates the two lines.



Comfort »

Open and Wide Openings: Incorporating wide openings, ideally wider than the standard wheelchair, will make it easier and simpler for older adults using wheelchairs to enter and navigate the car. Additionally, this will ease anxiety and provide comfort to older adults using public transit.
Natural Light: By implementing big windows, users who use the Light Rail will feel more at ease and relaxed when looking at surroundings. Along with an open design that will allow for easy access when boarding and leaving the tram, large windows will make users more comfortable and less anxious.



User Experience »

Universal Design is incorporated through the improved light rail design for a better user experience when riding the tram. Universal Design focuses on designing as many people as possible to the greatest extent (Goldsmith, 2000). This means that the light rail would be designed to be used by everyone in the same way. Many of the features implemented would benefit not only the aging population, but all other users.

Signage

