

**Reston Site Redevelopment Project**

(Technical Report)

**Assessing Accessibility-based and Mobility-based Planning Methods**

(STS Research Paper)

A Thesis Prospectus Submitted to the  
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
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## **Overall Introduction**

Technology continues to increasingly play a role in how cities plan, build, and serve their communities. The 20th century planning debate between Jane Jacobs and Robert Moses provides a fitting framework to further investigate the impact of accessibility-based versus mobility-based planning within cities. 15% of the world's population is disabled, and they inhabit and share the same spaces as every other individual within their communities. (Wray, 2019) As the concept of "smart cities" enter the local government planning and private development industries, the focus of their implementation is questioned in this paper. To further the research introduced in this paper, the City of Charlottesville in central Virginia will be contextualized within the accessibility and mobility-based planning methods being implemented currently to create infrastructure for the success of future smart technologies.

As cities redevelop land to be more equipped to handle increasing populations and commercial attractions, the impact of multi modal transportation is also heavily considered. The technical portion of my thesis discusses the land development process for the redevelopment of a parcel of land in Reston, Virginia which is increasing its capacity in consideration of recent changes to the Fairfax County Comprehensive Plan, and the construction of a Metro Silver Line stop adjacent to the property. From the initial considerations of preservation or demolition, to construction of a new site design, the project encompasses the steps all developments must go through in order to be successfully implemented into its communities.

## **Technical Project**

My Capstone group is proposing a redevelopment of a parcel of land in Reston, Virginia to increase its current FAR to within the range of 3.0 to 4.0. In order to maintain continuity with the surrounding Reston area in regards to densification and support the arrival of the Metro Silver Line stop, redesign of the site was deemed necessary. The composition of land use within the 537,000 SF site is 50% commercial and 50% residential. Our proposal will include sufficient parking, efficient stormwater management, and LEED certified buildings that accommodate mixed-use tenants. Public spaces that encourage walking and biking and improved interaction with local businesses and the metro stop will be prioritized.

The scope of our work includes stormwater management, fire safety, architectural design, public open-space, and overall site design highlighting building placement, multi-modal accessibility, and road design. We will be providing a zoning ordinance chart, a phasing plan, and a cost estimate for the completion of the project. We will be designing an efficient stormwater plan that treats runoff generated by the site and meets Virginia Department of Environmental Quality standards. The Virginia Department of Transportation standards for road design will be consulted for our site plan. We are to design this parcel so that the maximum benefit for the land and tenant owners can be achieved.

## **STS Research Paper**

### **Introduction**

The mobility-based planning paradigm has been dominant within cities for a century and as the populations of cities grow, the existing lack of accessibility within their built environments will continue

to greatly challenge the inclusivity of their streets. Tech-oriented transportation ideas are compelling when implemented for “smart city” infrastructure, but they can largely ignore the societal needs and cultural factors which embody the seams of a city like Charlottesville. This paper will explore the opportunities for inclusive cities through mobility-based and accessibility-based planning within the framework of urban renewal introduced and debated by Jane Jacobs and Robert Moses. The two planning paradigms will be presented within this paper to question: How do the accessibility and mobility-based planning paradigms influence transportation and community building within cities?

## **Literature Review**

Research was conducted to further support the approaches of accessibility-based and mobility-based planning within cities and assess the ability for success of implementations in Charlottesville. For the purpose of this research, accessibility-based planning is defined as a focus on the ease of people reaching and interacting with places. In contrast, mobility-based planning is defined as a focus on the efficiency of movement to and from places.

Accessibility-based planning places people, the users, at the center of the transport system. Litman analyzes the contrasting city planning methods to evaluate the factors which affect accessibility through his study, *Evaluating Accessibility for Transport Planning, Measuring People’s Ability to Reach Desired Goods and Activities*. “Many factors affect accessibility, including people’s transport needs and abilities, the quality and affordability of transport options, the degree to which various links and modes are connected, land use patterns, and the quality of mobility substitutes... Some of these factors tend to be overlooked or undervalued in conventional transport planning, particularly non-motorized travel demand, alternative mode service quality, user information, integration, affordability, prioritization and the value of inaccessibility.” (Litman, 2017) Litman carries on the previously identified factors which affect accessibility to define ways in which multi-modal transportation-based communities can exist with universal design principles and pedestrian focus design.

Prioritizing an accessibility-based development approach is a popular choice as it a silent nudge towards sustainable multi-modal transportation uses within local communities. “An important ridership dimension of TODs (Transit-Oriented Development) is their mixed-use, or high-accessibility, attributes. Mixed uses yield benefits beyond “trip de-generation” (i.e., the replacement of motorized trips by foot travel)” states Cervero (Cervero, 2005). Current infrastructure designs within cities which do not consider multiple modes of transportation, lack within the context of accessible mobility options. The consideration an individual when deciding the method of transit to take should be seen as the same level of importance of a decision for ultimate destination of the trip.

In order for successful accessibility planning, Chapman and Weir state that its integration has to be horizontal and vertical across government with involvement with multiple community stakeholders throughout the entire developmental process. “These agencies are responsible for setting policy and developing top-down guidance and core (national) accessibility indicators. Central government must work with regional and local government as well as the private sector and a range of stakeholders to ensure a cross-sectoral approach is taken that meets national outcomes without negatively impacting on those of the stakeholders and the ‘end users’ (ie the people)”. Disabled people are one of the groups mentioned “at risk of accessibility-related social exclusion”, highlighting the fact that within planning practice,

“improvements to infrastructure and public transport that are crucial for the disabled benefit everyone” (Chapman & Weir, 2008).

Mobility based planning focus on efforts with enhancing the efficiency of transportation systems within a city. Although mobility and accessibility are both considered when determining transportation systems, the specific planning approach can have negative impacts on the other. In her research, Susan Handy addresses automobile dependence in the US by comparing accessibility vs mobility enhancing strategies, “Although planning for mobility can be compatible with planning for accessibility, the entrenched focus on mobility in transportation planning in the U.S. has over time helped to decrease accessibility, primarily by encouraging sprawling patterns of development that limit choices.” The increasing trend of automobile traffic has been supported with planning policies advocating for transportation projects within the city and to surrounding localities. “In the last decade or so, the field of Intelligent Transportation Systems (ITS) has evolved as another important mobility- enhancing strategy. Although ITS comprises lots of very different applications, the general aim of these applications is to improve the efficiency of the transportation system and make better use of existing capacity” (Handy, 2002).

## **Framework**

The battle of urban renewal between Jane Jacobs and Robert Moses in the 1960’s provides a framework in which city planning can be challenged by aspects of two paradigms. Within this paper, the current urban challenge of accessibility-based and mobility-based planning revisits the debate of a city built for easy driving versus a city built for community. “Moses’s ideals of a clean, orderly city where cars took priority was not unlike the model many American suburbs were built upon. Jacobs, on the other hand, embraced the messiness of urban life, preaching density and diversity of neighborhoods and arguing against top-down, high-handed methods of city planning” (Ferro, 2018). The analyzation of the two paradigms can be framed within the urbanization Jacobs and Moses inspired as they fought to prioritize their own values of efficiency and access.

## **Methods**

By analyzing the paradigms of accessibility and mobility based urban planning, this paper investigates the relationship of transportation and community within cities. The urban renewal discussion initiated by Jane Jacobs is contextualized within the City of Charlottesville through methods of community outreach focusing on the accessibility and mobility of the city’s current infrastructure. Engagement with community members and local policymakers’ representative of both paradigms support the framework in which this paper will explore the question of which basis smart cities of the future are to be planned upon.

Methods of research include engagement with resident’s representative of the able and disable communities within the City, as well as the policy makers within local government. The City of Charlottesville can be analyzed by looking at the current physical and political infrastructure in place that coincides with an accessibility based multi transportation approach. In order to gather an understanding of the current conditions within the locality, communication with the City’s Neighborhood Development Services Department which consists of city planners, engineers, pedestrian and cyclist director, and the ADA coordinator. The initial outreach into the local government was an interview with the City Traffic Engineer to gather insight on the transportation options offered within the City, and its accessibility

variations. The core community groups, relevant social groups, user types, policies, and City initiatives regarding accessibility are focus areas for the continuation of this study.

### **Discussion and Next Steps**

The preliminary research presented the accessibility-based and mobility-based planning efforts within cities within the framework of the urbanization debate of efficiency vs access as first introduced by Jane Jacobs and Robert Moses. As the City of Charlottesville approaches critical policy and planning decisions, it is important to contextualize the impact mobility and accessibility have within the community. To analyze the current planning methods, initial outreach within the Charlottesville community, a basis of existing transportation designs and public thoughts, has been recorded. In order to better understand the relationship between disability advocacy groups and the local government, the perspectives of both the city's ADA coordinator and the University of Virginia's ADA coordinator will be sought. Charlottesville's planners will also be contacted in order to contextualize the values portrayed on the current and future plans for the city.

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