Streets for People
(Technical Paper)

Urban Green Space and Green Gentrification: The New York City High Line
(STS Paper)

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On my honor as a University student, I have neither given nor received unauthorized aid on this assignment as defined by the Honor Guidelines for Thesis-Related Assignments.

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Prospectus

Sociotechnical Challenge

In the United States, most cities are not developed for people and instead are built for cars. With little public space or green space, people are not as mentally or physically healthy (Kondo et al., 2018). In recent years, researchers, planners, and even communities have begun to think about how to redevelop our cities and create more people- and environmentally-friendly designs to increase personal and community wellness. In 1990s Portland, Oregon, this resulted in a push for community-designed and -built intersection redesigns such as Share-It Square and Sunnyside Piazza where a neighborhood pivoted the use of a car intersection to a public plaza. Both of these examples increased sense of community and mental health (Semenza, 2003). These results have spurred a movement across the US to convert space made for cars into space made for people. Furthermore, the COVID-19 pandemic has resulted in an increased use of road space originally meant for cars as public outdoor gathering space. However, the pandemic has also resulted in little to no information being collected about these occurrences. As an answer to this, the research and design team will answer research questions surrounding the uses and best practices in repurposing streets and recommend changes to design guidelines to allow for safe, effective, and efficient designs that allow people to use their public space.

There are also social factors that affect the success of repurposing public spaces can be. Although public space and green space have many benefits to communities including increased mental and physical health and sense of community (Francis et al., 2012), they can inadvertently create or exaggerate existing struggles (Wolch et al., 2014). Using the STS framework of technological politics set forth by Langdon Winner, I plan to investigate the politics behind the repurposing of New York City's High Line, which used to be a railroad line shut down in the

1980s and was remodeled in 2009 to become an elevated park (*History*, 2019). This case study will allow insight into the green gentrification that occurs as a result of repurposing streets to be used as public space.

In order to successfully repurpose a mode of transportation to be used as public space, whether it be pedestrian and bike space, green parks, or outdoor dining, the technical and social factors both must be considered. After learning best practices in Covid-19 street repurposing, the design team will address the technical question by developing design guidelines which will create more opportunities in cities around the US for street repurposing. The social factors of this issue will be undertaken by studying the case of the High Line in New York City and its connection to green gentrification in the surrounding areas. This research will culminate in a solution that allows for more public and green space while also considering the effects of green gentrification in the community.

Technical Project

In the past 20 years, communities and planners have started to look towards pivoting our public space to be geared towards human interaction. Examples may include community-based projects on the neighborhood scale such as Share-It Square and Sunnyside Piazza in Portland, Oregon, or large-scale projects such as the High Line in New York City, but there are many intermediary options as well. The National Association of City Transportation Officials (NACTO) provides what they call "interim design guidelines" which are recommendations for how to change the use of public space, including parklets where outdoor dining is moved into parking spaces, "moving the curb" to allow for more pedestrian or bike space, and even public plazas in spaces where cars would normally occupy (*Interim Design Strategies*, 2013). These design guidelines are used often to allow for temporary changes without exorbitant spending. In

a time like the pandemic, increasing human interaction and socially distanced public space while using relatively few resources is a priority.

Cities around the US have started to use these tactics more and more as the COVID-19 pandemic has increased the desire for public outdoor space where people can feel safe to dine, socialize, and interact with their neighbors while maintaining social distancing and personal safety (Thorpe, 2020). This push has resulted in much more utilization of this public space, but in turn the pandemic has resulted in little public engagement or information being gathered surrounding repurposing techniques, their success, and how we will move forward following the pandemic. Questions remain such as which techniques are most common and successful, how travel behavior and safety change as a result, and if each user is always benefited or if there are users put at a disadvantage.

This project aims to answer these questions and more. Surveys and interviews will be conducted with the engineers and planners involved in recent repurposing projects to determine which strategies were found to be most successful, if they will be implemented as permanent changes, and what best practices prevailed. An online survey will be sent to thirty to forty engineers and planners involved in such projects around Virginia and the United States. From this sample of planners and engineers, two to three in-depth Zoom interviews will be conducted to collect more information about the details of the most successful repurposing projects. Using this information from the surveys and interviews, the design team will develop new guideline recommendations for NACTO Urban Design Guidelines along with detailed design drawings which will promote easier and better strategies towards building a society that is more suitable to people, rather than vehicles.

With these additions and changes to design guidelines, cities will be more able to enact intermittent or long-term closures which would allow people to function more comfortably in their cities. Low-effort and low-cost solutions are the most likely to be adopted by cities across the United States, and encouraging these changes without the need for extensive re-design of the space will make a successful result much more attainable.

STS Project

It has been proven that an increase in public green space in cities leads to increased mental and physical health of residents as well as a greater sense of community (Francis et al., 2012; Kondo et al., 2018). As a result, many cities in the United States and worldwide are encouraging designs that will push society away from their car-centered current reality and towards a more green, walkable communities. These designs could be as simple as closing down a street for a farmer's market or art show on the first Saturday of each month, or as extensive as permanently repurposing an entire roadway to become a pedestrian mall or green park.

There have been many large- and small-scale projects all over that aim to repurpose space, for example a number of defunct railroad lines around the US that have been turned into linear parks including the Atlanta BeltLine, The 606 in Chicago, and, most notably, the High Line in New York City (Hansen, 2020). These high-density cities have limited horizontal space but high demand for more green public space, thus resulting in a decision to take advantage of the vertical space available. Although these multi-million-dollar repurposing projects may provide increased mental and physical health and a greater sense of community, they do not only result in positive additions to the community. They can sometimes depart from being a source of green public space for the immediate community and instead become a draw for outsiders, placing more strain on the community they are built in.

The New York City High Line draws around eight million visitors in a year (Matthews, n.d.). The High Line is now a tourist attraction for people visiting New York City from all over the world which places a strain on the surrounding community and raises property values in the neighborhoods immediately next to the park (Jo Black & Richards, 2020). Large projects to repurpose space and create green public spaces can exacerbate current issues of gentrification. According to the Barcelona Laboratory for Urban Environmental Justice and Sustainability, "Green gentrification refers to processes started by the implementation of an environmental planning agenda related to green spaces that lead to the exclusion and displacement of politically disenfranchised residents," (*Green Gentrification*, n.d.). A prime example of green gentrification, The High Line raised property values and therefore priced existing residents out of their homes while drawing in higher income people (Jo Black & Richards, 2020). The benefits of green urban space are without a doubt present in this example; the High Line offers space for native plants and greenery and for people to gather and experience art and performances (*Overview*, n.d.). Gentrification can have directly negative effects on people and communities in ways that may not be expected. Without addressing the consequences of building large urban green spaces which draw higher income populations and displace low-income people, the health of the displaced can be greatly impacted. Displacing low-income residents can result in being far from quality food resources, schools, exercise facilities, and perhaps most importantly, the social networks that these groups have established over many years in their neighborhoods (*CDC - Healthy Places - Health Effects of Gentrification*, 2017). These consequences of green gentrification specifically are important to consider before building urban green spaces.

In my STS research, I will study the importance of creating public green space while keeping in mind the effects of gentrification and how it can be avoided by involving the

community in which we are building in the design process. Technological politics, a framework set forth by Langdon Winner, explains how technologies can have politics, or social implications, whether intentional or unintentional. I will use technological politics to analyze the case of New York City's High Line and its effect on the surrounding community to better learn how the implementation of green urban and environmental planning can positively and negatively impact communities. Jo Black & Richards study "Eco-gentrification and who benefits from urban green amenities: NYC's High Line" highlights green gentrification (or as they call it, eco-gentrification) surrounding the High Line; this study as well as other information around green gentrification and the High Line will provide the necessary information to study the association between urban green space and gentrification. This research will be integral in implementing any design for converting road space to public space or green space, since there are a vast variety of consequences that could be faced if these concepts are not applied to the research and design of the technical project.

Conclusion

The technical project will propose design guidelines that provide ample opportunities for repurposing of roadways in what is found to be the most successful of ways. This information will be collected by conducting interviews and surveys with the engineers and planners who implemented these changes. Using the information collected, the design team will have the lessons learned and best practices and be able to apply these to create detailed design drawings for the recommended changes and additions to the current NACTO Urban Design Guidelines.

I will conduct the STS research with an aim of better understanding the ways in which repurposing space can spur green gentrification. Using the framework of technological politics and green urban design as a technology, I will analyze the ways in which the High Line in New

York City has raised housing prices in its immediate surroundings and how these changes have disproportionately affected certain communities.

This research will advance the technical design because if there is a lack of awareness of how a design will function in a society and the immediate environment it operates in, there will always be adverse effects. This knowledge about green engineering and urban design in conjunction with green gentrification will shed light on how best to implement green practices in urban spaces while maintaining the strength of communities around it.

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