THE GREENING OF ATLANTA:

SOCIO-ECOLOGICAL OUTCOMES ON THE ATLANTA BELTLINE

by

RACHEL WILL

(Under the Direction of Jennifer Rice)

ABSTRACT

Like many cities, Atlanta, Georgia faces several significant socio-environmental challenges, including sprawl, environmental degradation, and a dearth of public transportation and park space. In an attempt to address some of these issues, city officials have begun to execute one of the nation's largest and most expensive urban greening projects: The Atlanta BeltLine. The project will create a 33-mile network of multi-use trails around the city of Atlanta, and will establish new green spaces, increase neighborhood connectivity, and address stormwater runoff, among other goals. While the BeltLine's social and environmental benefits have received ample praise, the project has also been critiqued for falling short on several targets and for causing new problems including gentrification and displacement. What, then, are we to make of urban greening projects that address some socio-ecological problems while generating others? To develop a more nuanced understanding of the socio-ecological gains and losses attributed to urban greening, how they are produced, and how they are experienced, this dissertation explores three facets of urban greening. First, this dissertation investigates the role of urban professionals tasked with urban greening, often called technocrats in academic literature, by developing an understanding of their subjectivities. That is, how their identities, experiences, and emotions

influence their priorities for their work, and the ways that the planning process does or does not allow them to translate their priorities into project outcomes. Second, this dissertation explores the wants and needs of diverse residents living in BeltLine neighborhoods, and the benefits and new problems they experience since the project has been implemented. Resident needs and experiences are compared to promised outcomes, underscoring how the project is and is not addressing the needs of local residents. Finally, this dissertation observes project outcomes from two divergent frameworks, environmental management and urban political ecology. These frameworks value different outcomes and together highlight the tradeoffs inherent to urban greening, elucidating how outcomes produce gains for some actors and losses for others. The insight gained from this research is useful to create planning, engagement, and policy recommendations to guide the outcomes of urban planning in more intentional and equitable ways.

INDEX WORDS: Political ecology, nature society relationships, urban studies, urban planning, Atlanta, the Atlanta BeltLine, urban greening, green space, technocrats, subjectivities, neighborhood change, resident priorities, environmental management, green stormwater infrastructure, stormwater management, brownfield remediation, gentrification, ecological gentrification, Old Fourth Ward

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DEDICATION

I want to dedicate this dissertation to my parents for always having unwavering confidence in my abilities.

Dad – you were unparalleled in your belief in and encouragement of me. I will carry that with me wherever I go. I'm writing my own ticket.

Mom – You've showed up for me in every possible way and I am so lucky to know that kind of support. You've always been my North star.

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CHAPTER 1

INTRODUCTION AND LITERATURE REVIEW

Large scale, green redevelopment projects are increasingly seen as a panacea to multiple social, ecological, and economic problems in cities. The Bloomingdale Trail in Chicago and the Highline in New York City are prominent examples. Typically, these projects, which can be extraordinarily expensive, repurpose "unused" space into new forms of urban nature, including green space, trails, parks, gardens, green infrastructure, and waterfront revitalization (Reshwan, 2006). These projects often advertise universal win-win-win benefits for social, ecological, and economic conditions, which is useful to gain support from stakeholders and contributes to the increasing popularity of these projects worldwide. These projects can indeed provide several benefits, including aesthetic enhancements, neighborhood reinvestment, and improved measures in ecological health. Simultaneously, professionals and residents note that these projects can also create unintended negative outcomes for vulnerable residents – most notably gentrification and displacement – as these projects frequently attract new, higher-income residents seeking an environmentally friendly urban lifestyle (Wolch et al., 2014). This persistent tension between positive and negative outcomes raises new questions as to why these projects often create new problems and fall short of their goals for some demographics, especially as many officials continue to pursue this type of development to address problems at the urban socio-ecological interface.

Professionals in Atlanta, Georgia are executing one of the nation's largest and most expensive green redevelopment projects in the United States, the Atlanta BeltLine. The project

will convert a former railway surrounding the city into a 22-mile multi-use trail, directly connecting 45 central neighborhoods, and will create 11 additional miles of spur trails. The BeltLine is intended to create greenspace, improve neighborhood connectivity, increase transportation options, address stormwater issues, and stimulate neighborhood investment and redevelopment, among other goals (BeltLine, 2017a). Improvements to public and environmental health have been noted as key benefits of the project (Ross et al., 2012), and many applaud how a completed section in the Old Fourth Ward neighborhood simultaneously addressed stormwater hazards, created a new park, and stimulated new development (Saporta, 2013). Yet, others argue that these benefits are *negated* by rising property values that cause the displacement of many long-term, low income, minority residents living near completed, or soon to be built, sections of the BeltLine (Roy, 2015; Kim et al., 2016). The mixed outcomes of the BeltLine represent the tensions central to urban greening projects: while universal win-win-win outcomes are promised, complex arrangements of gains and losses are often the reality. **Given this trend, this dissertation utilizes the Atlanta BeltLine as a case study to develop a better understanding of how positive and negative outcomes resulting from urban green redevelopment are produced and experienced by both project professionals and urban residents.**

Research context

The Atlanta BeltLine was first conceived as Georgia Tech student Ryan Gravel's master's thesis in 1999, primarily as an idea to remediate transit inequality in the city. After presenting the idea to city council members, and years of soliciting public input and resident and stakeholder support, the BeltLine was put into action by civic leaders in 2005 (BeltLine, 2017c). The completed project, which will cost over 4.3 billion dollars, is expected to create 1,000 new acres of greenspace, provide 5,600 affordable housing units, and eventually build a new light rail

system, further enhancing connectivity and sustainable transportation opportunities in the city (BeltLine, 2017a). A map of the project is provided in Figure 1.1. The ecological benefits offered by the project are numerous and include the protection of water resources and improved stormwater management, enhanced habitat connectivity, and the remediation of brownfields, among others.

The Atlanta BeltLine is situated within the historic context of Atlanta, which includes decades of inadequate and inequitable public transit access, disinvestment, and long-standing environmental issues concentrated in low-income neighborhoods of color. The city of Atlanta has historically struggled to provide equitable social and environmental conditions for its citizens (Bullard and Torres, 2010). One of the most frequent and problematic environmental justice concerns in Atlanta is stormwater runoff. Of additional concern, this runoff can contribute to combined sewer overflows in some areas, where outdated and overburdened sewer lines release untreated effluent during rainfall events, exposing residents to garbage, pathogens, and toxic chemicals (Saporta, 2015). Structural racism throughout the city's history has led to the creation of a perpetually underfunded public transit system that underserves low- and middle-income residents. Additionally, many low-income neighborhoods in the city have long been plagued with brownfields, areas of chemically contaminated land caused by historic land uses, that cause public and environmental health concerns. Many of the same areas also lack access to parks and green space, preventing low-income residents from experiencing the physical and mental health benefits associated with well-maintained green space. It has been noted that the persistence of these environmental justice concerns in these neighborhoods has *prevented* the reinvestment and gentrification that has been prominent in other areas of the city (Reid and Adelman, 2003).

Figure 1.1: Map of the Atlanta BeltLine. Source: beltline.org.

Much of the BeltLine corridor intersects with these disinvested, lower-income, neighborhoods, which contributes to heightened tensions among city officials and urban residents, as various groups try to influence the direction of the project towards their particular goals and priorities. Some view these neighborhoods as a prime opportunity for growth, while others call for these long-standing environmental justice issues to finally be addressed. Ultimately, the BeltLine gained support as an opportunity to simultaneously address long-standing social inequalities and environmental issues, while also stimulating neighborhood growth. Importantly, project planners and Gravel have acknowledged the potential for urban greening projects to create negative tradeoffs. In an interview, he noted the importance of ensuring that change resulting from the project happens "for us, rather than to us" (Green, 2013). As such, the BeltLine includes several platforms designed to enhance the equity of project outcomes and to include and address resident input and concerns. These measures include equitable development and environmental justice platforms and democratizing measures including study groups, community outreach, community meetings, and advisory boards (BeltLine, 2017d). A vast number of project professionals are employed to negotiate and implement the goals of the BeltLine, including urban planners, transportation experts, urban political ecologists, and communications specialists.

The inclusion of a variety of experts, as well as resident engagement goals, is a sign that project professionals are attempting to simultaneously address multifaceted socio-ecological goals. However, in response to local transformations that have already taken place, and in anticipation of continued development, some resident groups *and* technocrats have expressed concerns about project outcomes. For example, a resident group stated that the BeltLine is forcing African American residents out of the city (Block the BeltLine, 2012), and Ryan Gravel

publicly resigned from the project in 2016, citing concerns that despite the project's provision of affordable housing units, the BeltLine is largely reducing neighborhood affordability and promoting inequity in the city (Binkovitz, 2016). He noted that the project's contribution to enhancing inequality in the city was antithetical to his initial intentions for the project. This departure exemplifies that there are many challenges, contradictions, or uncertainties occurring between the socio-ecological benefits promised by urban greening projects and their outcomes.

Currently, 11 of the eventual 33 miles of BeltLine trail have been opened to residents. The first section to be implemented, located in the Old Fourth Ward, has undergone the greatest amount of change of any BeltLine neighborhood[1]. Situated adjacent to downtown Atlanta, the Old Fourth Ward is one of the oldest neighborhoods in the city. The neighborhood experienced disinvestment during the white flight of the 1950s and 60s, at which point it became a majority black neighborhood. In 1964, a predominately low-income, section of the neighborhood, known as Buttermilk Bottom, was entirely razed under the premise of eminent domain to build a convention center (Williams, 2019). All residents were displaced. This process reflects a broader pattern of redevelopment projects in Atlanta that result in widespread displacement of low and middle income African American residents. Martin Luther King Jr. was born in the neighborhood in 1929, a block from his father's parish, Ebenezer Baptist Church, here he became co-pastor at the age of 19. From Dr. King's work, the neighborhood became the birthplace of the Civil Rights Movement. While the neighborhood has a history of structural racism and displacement via urban renewal and planning, it also is a site of exceptional cultural significance, particularly for African American residents. It is also one of the neighborhoods most affected by the persistent problem of stormwater overflows.

[1] The term "BeltLine neighborhood" refers to the 45 neighborhoods that will be directly connected by the completed BeltLine trail.

After various stages of design and negotiation with residents at participation platforms, BeltLine planners addressed these stormwater hazards by creating a new park engineered to capture excess stormwater (BeltLine, 2017b; Pendered, 2016a). As the project simultaneously created an attractive new park and reduced flood risks, property values have dramatically increased, spurring significant new development, investment, and occupancy within the neighborhood (Saporta, 2015). While many residents benefit from these transformations, outcomes have been contested by others that say they can no longer afford to live in their neighborhood (Kim et al., 2016). These concerns are amplified by literature that has shown that residents displaced by gentrification often end up in less desirable neighborhoods with similar, or worse, environmental justice violations (Newman and Wyly, 2006). The coproduction of environmental improvements and social inequality via displacement highlights the complex realities of urban greening projects – gains accrue to some, while losses are experienced by others.

This contradiction between the pursuit of large-scale urban greening projects, and the complex set of positive and negative social and environmental outcomes requires further examination. Given the context of the BeltLine, this research attempts to understand the factors that contribute to difficulty in equitably addressing urban socio-ecological problems within the broader context of urban greening's effect on the private market. The research starts not from abstract, broad-scale planning processes, but from the viewpoint of the individuals actually implementing or experiencing these projects through established technocratic procedures, or everyday experiences living in transitioning neighborhoods. The Atlanta BeltLine is an ideal case study because it has been partially completed—providing some initial insights on how gains

and losses will be distributed and perceived—yet, there are still many opportunities for interventions to improve project outcomes through the project's public engagement mechanisms.

Literature review

This work draws broadly from a political ecology framework, which considers how and why technocratic forms of governance facilitate the production of uneven and contestable socio-environmental outcomes (Mitchell, 2002). Technocratic governance is defined as "an important component of neoliberal thought, based on the idea that policy should be directed by technical expertise instead of political partisanship" (Budds, 2009 p. 421). This is a common form of governance used in the design and implementation of urban greening projects, including the BeltLine. Political ecology has contributed to a broad-scale understanding of how technocratic governance often values formal expertise over citizen experience and may also prioritize the goals of elite citizens over those with less socio-economic power (Castree, 2002; Evans, 2007). Scholars have also indicated that the technocratic pursuit of green redevelopment projects may exacerbate urban inequalities by disabling truly democratic citizen engagement (Checker, 2011). As political ecology has established these important guiding principles that produce uneven socio-natures, we now need research on exactly *how* and *why* these outcomes persist.

I argue here that we need to know much more about the subjectivities and experiences of the technocrats that oversee these projects, and the constraints they must work within, especially considering that many urban professionals enter their profession with the goal of mitigating socio-ecological injustices. We also need to know more about the diversity of resident priorities for these projects, and how the socio-ecological outcomes of these projects are heterogeneously perceived and experienced in the everyday lives of residents. To do this, I integrate insights from critical urban planning with political ecology to create a framework that will produce a more

contextualized, everyday understanding of the processes and experiences related to development of large-scale green redevelopment projects.

Subjectivities of technocrats and project planning constraints

Urban professionals, often referred to in political ecology literature as "technocrats" (Mitchell, 2002), are experts involved in governance, planning, and development of various projects and initiatives. Technocrats working on the BeltLine include urban planners, landscape architects, community engagement professionals, environmental managers, real estate planners, transit specialists, and economists, among others (BeltLine, 2017e). These professionals coordinate their efforts with input from government officials, private investors, and increasingly, residents. While design and decision-making processes are meant to be negotiated between all of these actors, technocrats (perceived as "the experts") often have more power to control how urban socio-ecological relations will be reshaped than everyday residents (Castree, 2002). Technocrats have been criticized for excluding marginalized residents (Gould and Lewis, 2012; Swyngedouw, 2009), and accused of catering projects towards the visions of wealthy residents and private investors, strategically reifying existing power relations in cities (Roy, 2015; Kitchen, 2013).

While these examples demonstrate justified critiques, they fail to acknowledge the complex and individual subjectivities of technocrats themselves. Political ecologists have increasingly noted that within critical literature, technocrats are often framed in "one-dimensional, totalizing, and antagonistic" ways (Hagerman, 2007, p. 288). In other words, their own ideas, as well as the constraints (or opportunities) placed upon them by structured planning processes, have received little attention in critical political ecology. To address this need, I turn to the idea of subjectivity, which involves exploring how lived experiences, including sense of

community and professional training, transform relationships to others and one's understanding of self (Gill, 2008). While some studies have explored the environmental subjectivities of residents and resident groups in urban governance (Grove, 2009; Doshi, 2013), few have examined the subjectivities of actual *technocrats*. Despite often being framed in one-dimensional ways, most technocrats enter their career with the goal of making the city a better place and have received specialized knowledge and training to improve aspects of urban life. As such, more attention needs to be paid to the subjectivities of technocrats and the "multiple worlds" (Di Chiro, 2015) they occupy. For example, the technocrats working on the BeltLine are also residents of Atlanta, directly witnessing and experiencing the project they are tasked with creating.

Informing our understanding of technocratic subjectivity, critical planning literature acknowledges that technocrats work under several constraints beyond their control, including funding restrictions, policy mandates, operational frameworks, and pressure from the public and elected officials (Runhaar et al., 2009; Tryväinen et al., 2007). Operating within these constraints potentially limits professionals from creating projects with more equitable social and environmental outcomes. This insight is significant as there is self-recognition among a subset of critical urban planners that more attention needs to be paid to the uneven distribution of socio-ecological benefits produced by their designs (van Kamp et al., 2003; Arbaci and Tapada-Berteli, 2012; Checker, 2011; Busch, 2016). Essentially, while political ecology literature often treats technocrats in positions of power as the problem, critical urban planning literature argues that it is more likely the technocratic *process* – rather than the technocrat as an individual actor – that creates challenges in the negotiation of project priorities. Investigating the subjectivities of technocrats, and the specific ways that technocratic processes may constrain their actions, will

shed light on the everyday ways technocrats negotiate and prioritize project goals, even as they recognize potential problems with the projects on which they work.

Negotiating heterogeneous priorities and goals within the technocratic process

Planners for urban green redevelopment projects are increasingly adopting new strategies to include residents' goals in the design process (Ghose, 2005; Kleinschmit, 2012; Roy; 2015). As previously noted, managers of the BeltLine have included several efforts to elicit residents' input about the project's design. BeltLine planners have been explicit that the project is intended to be made "by and for" the citizens of Atlanta, and benefit "everyone in the entire metro Atlanta region" (BeltLine, 2017a). As such, these strategies are intentional efforts to solicit resident input to produce more universally beneficial project outcomes. However, political ecology research has noted that participation processes are often unintentionally exclusionary and undemocratic (Roy, 2015). For instance, if announcements for resident participation platforms are channeled primarily via websites, social media, and email (as is the case with the BeltLine), invitations to participate may not reach lower-income residents that do not have computer access, nor older, long-term residents that understand the deep histories of the neighborhoods (Roy, 2015). Essentially, the democratic intent of these strategies may increase the positive reception of these projects among more influential residents and groups, yet the socio-ecological goals of vulnerable or minority populations may remain critically underrepresented in these projects.

Political ecology and critical urban planning studies have also shown that the socio-ecological outcomes desired by residents can differ by race, class, homeowner status, and length of time as a resident (Finney, 2014; Busch, 2016, McGirr et al, 2014; Backstrom, 2018; Stein, 2011), underscoring the need for planners to understand diverse resident goals. One study, for example, showed that more affluent, white residents tended to desire more open space and

increased quality of life, while less affluent, minority residents tended to desire the reduction of environmental threats and pollution, and increases in safety, municipal services, and jobs (Busch, 2016). Such circumstances often create a situation where project professionals must decide whose priorities are more important (Gobster, 2001). Understanding the heterogeneity of resident needs, and how they are (or are not) included in the final plan for urban greening projects, can help us better understand the unintended promotion of normative ideas about who is (and whose ideas are) desirable in urban nature (Nightengale, 2015). Further, misunderstanding or underrepresenting diverse resident needs in participation platforms and in project design can lead to the erasure of heterogeneous experiences of socio-ecological inequalities in cities (van Kamp et al, 2003; Slater, 2009), and can ultimately produce unintended negative outcomes for some residents (Busch, 2016).

While critical fields, such as political ecology, often fail to fully acknowledge the important benefits urban greening projects can provide to environmental health, urban ecology fully adds a great deal to our understanding of the various ways in which urban environments can improve. This field provides a useful lens with which to understand the socio-ecological complexity of conservation issues within cities, and to assess the outcomes of urban greening. Specifically, urban ecology draws attention to the range of positive outcomes that urban greening projects can provide, including increased tree cover, improvements in air quality, reduction of urban stream syndrome, habitat connectivity, and mitigation of the urban heat island, among others (Angold et al., 2005; Gobster, 2001; Savard et al., 2000). Urban political ecologists provide important insight regarding how these outcomes improve the health and wellbeing of urban species and habitats, as well as the function of environmental processes. Of additional note, urban political ecologists often also highlight that improving urban environments can likely

"result in tangible economic benefits, such as increased real estate values" (Walsh et al., 2005b p. 719). In this way, urban ecology not only underscores the material environmental, but also highlights the co-production of economic gains.

Socio-ecological tradeoffs

This dissertation mobilizes the integrative conservation mechanisms of pluralism and tradeoffs, which provide a useful framework to understand the outcomes of the BeltLine, and how they are produced, understood, and experienced by different actors. The concept of pluralism begins with an understanding that perceptions of socio-ecological problems and tradeoffs are both varied and subjective (MacMynowski, 2007; Newell et al., 2005, Miller et al., 2008; Hirsch and Brosius, 2013). While many diverse perspectives exist, conservation projects often simplify these perspectives by privileging one way of thinking (Hirsch et al., 2011; Ribot, 2004), which may limit a project's success (McShane et al., 2011). Accordingly, pluralism considers multiple frameworks to develop a sophisticated understanding of socio-ecological problems and solutions from a variety of legitimate perspectives. Each perspective integrated in this work provides an important but partial understanding of the BeltLine, each of which highlights particular measures of importance while obscuring others (McShane et al., 2011).

Integrating multiple frameworks by engaging in pluralism allows us to understand the complexities involved in urban greening and provides a more robust understanding of how projects can meet the needs of some actors and processes but not others. For instance, pluralism draws attention to differences in opinion across frameworks, why these differences exist, and the value added by contrasting opinions (Macmynowski, 2007). Pluralism also draws attention to similarities between the views of diverse actors (Newell et al., 2005). Identifying these

similarities elucidates entry points for collaborative capacity, which can be useful to build coalitions and create momentum for new policies.

This dissertation also engages in tradeoffs thinking, another significant integrative conservation mechanism. Tradeoffs thinking recognizes that "silver-bullet" solutions don't exist, and that projects are likely to produce mixed outcomes, addressing some issues while obscuring or creating others (Ban et al., 2013). This is because many social, environmental, and economic goals often conflict, meaning that the pursuit of one type of outcome may compromise gains elsewhere (Hirsch and Brosius, 2013). In the context of urban greening projects, universally beneficial solutions are often promoted to attract donors and other forms of support. This means that hard choices, losses, and tradeoffs are often not discussed. Yet, tradeoffs are likely to result, which can lead to disenchantment of stakeholders who were promised gains where losses were delivered (McShane et al., 2011). Accordingly, the acknowledgement of tradeoffs in every stage of planning, from engagement with stakeholders, to the planning process, to project implementation, can allow for more meaningful discussions about what outcomes are and are not worth being "traded off", leading to more intentional outcomes (Wood, 2000; Howe et al., 2014).

The integration of the integrative conservation mechanisms of pluralism and tradeoffs thinking has useful applications for policy. By making space for multiple frameworks and perspectives to be solicited, understood, and valued, diverse priorities for urban greening can be considered together. Not only does this integration allow for a better understanding of the complexities of urban greening, it elucidates what outcomes are of critical importance for multiple vantage points. This helps to clarify what outcomes to protect and what tradeoffs to mitigate. Policies may then be applied to help ensure that outcomes are more evenly distributed, no groups experience an undue burden from tradeoffs, and to protect against established

concerns. Figure 1.2 demonstrates how this research triangulates insights from urban and feminist political ecology and tradeoffs thinking to understand the mixed outcomes of urban greening from multiple perspectives.

Research questions

As the experience of the BeltLine's transformations can vary greatly between residents depending on factors such as race, class, and community networks, more research is needed on how project outcomes are produced and how they are perceived and experienced by diverse residents. This focus is essential to understand whose needs are and are not being addressed by these projects, and how heterogeneous needs can be better integrated into project design. This requires that we need to know more about how the subjectivities of project professionals may, or may not, influence the design and implementation of urban greening projects, the intimate and situated ways that project outcomes are experienced as positive or negative for various individuals and communities, and how complex socio-ecological tradeoffs are produced and understood. The specific research questions this dissertation addresses include:

1) **How do the subjectivities of technocrats influence their priorities and experiences related to urban greening, and does the planning process include ways for them to act on these priorities?**
2) **What diverse priorities exist for the outcomes of urban greening projects, and what and whose priorities are addressed by project outcomes?**
3) **What are the socio-ecological outcomes of urban greening from various disciplinary perspectives, and how can tradeoffs be better negotiated?**

Answering these questions will help further develop our theoretical understanding in three areas of political ecology research, including: 1) the subjectivities and constraints of urban

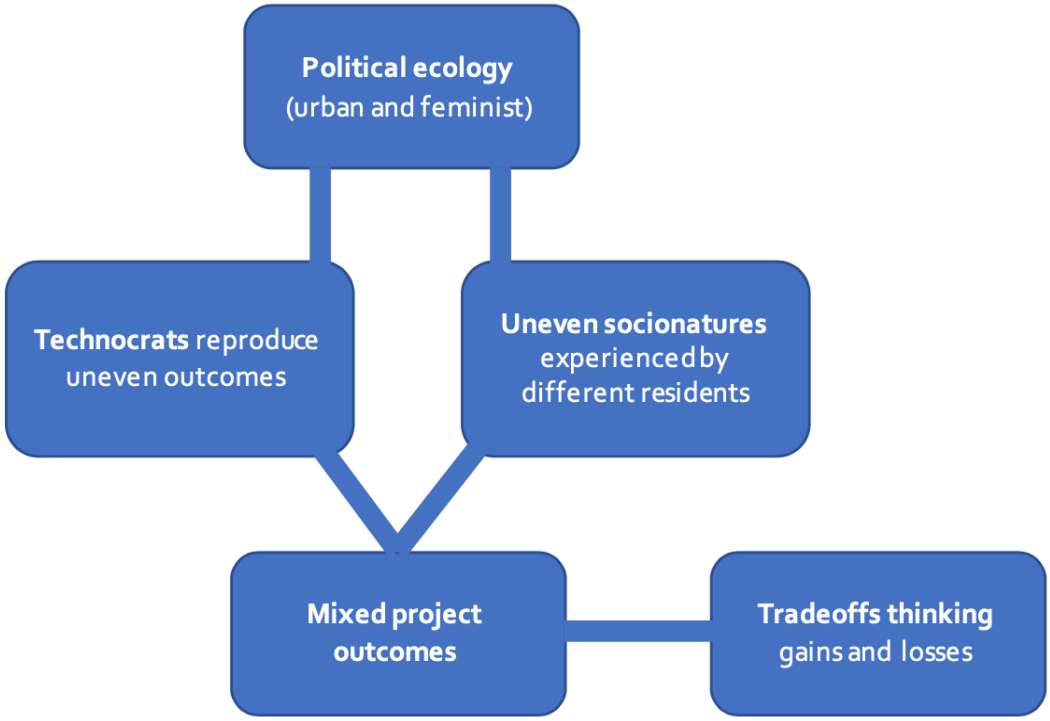

Figure 1.2: Visualization of literature review.

professionals working on urban green development, 2) the co-production of social, ecological, and economic tradeoffs in urban greening and 3) the varied perceptions of project outcomes that can be felt as positive for some groups, but not others.

Methods

This dissertation utilizes a mixed-methods approach, including interviews, observation, and archival research. Interviews were conducted with BeltLine employees and partners, environmental managers, and residents living in neighborhood within the BeltLine corridor. Semi-structured interviews were conducted with 32 individuals (see Table 1.1). These interviews included a core set of discussion topics and open-ended questions and allowed for flexibility for new topics to emerge relevant to the interviewee's experience or areas of expertise (George and Stratford, 2005).

Table 1.1: Dates of and protocols used per interview.

#	Interview protocol(s) used	Date of interview
1	D	5-16-17
2	D	5-25-17
3	B	5-27-17
4	D	5-31-17
5	A and D	6-2-17
6	A	6-8-17
7	D	6-12-17
8	A	6-13-17
9	A and C	6-14-17
10	D	6-15-17
11	C	6-20-17
12	A	6-22-17
13	B	6-28-17
14	C	6-29-17
15	C	6-29-17
16	A and D	6-30-17
17	D	7-6-17
18	D	7-6-17
19	B	7-6-17
20	A	7-7-17
21	B	7-7-17
22	C	7-10-17
23	C	7-11-17
24	A	7-14-17
25	B	7-19-17
26	A, B and D	7-21-17
27	C	7-25-17
28	C	7-27-17
29	B	8-6-17
30	D	8-21-17
31	B	8-25-17
32	C and D	7-26-17

Four different interview protocols were used including:

A) Residents of and activists for the Old Fourth Ward and Inman Park neighborhoods

B) Residents of and activists for Peoplestown, Pittsburgh, Adair Park, and Grant Park neighborhoods

C) BeltLine professionals (including employees of Atlanta BeltLine Inc., the Atlanta BeltLine Partnership, and employees of Atlanta BeltLine partner organizations

D) Atlanta-area professionals with extensive knowledge about the social and environmental inputs and outcomes for the BeltLine, including city employees, environmental managers, and non-profit leaders working on issues tangent to the BeltLine's social, economic, or environmental goals.

Several interviewees fit into more categories, and multiple interview protocols were combined to fit the experience of each interviewee. Out of 32 interviews, protocol A was used in nine interviews, protocol B was used in eight interviews, protocol C was used in nine interviews, and protocol D was used in 12 interviews, as shown in Table 1.1. Interview protocols can be found in Appendices A-D.

Protocols A and B were very similar. Both included questions about residents' favorite things about their neighborhood, changes in their neighborhood since the project was announced, problems in their neighborhood they feel need to be addressed, and ideally, what impact the BeltLine could have. Residents living in the Old Fourth Ward and Inman Park neighborhoods live adjacent to the East Side BeltLine Trail – the first section of the BeltLine to be completed. These neighborhoods had undergone considerable changes since the project was implemented, and residents were asked questions from protocol A. Residents living in Grant Park, Peoplestown, Pittsburgh, and Adair Park live near the then anticipated Southside trail. At the time of interviews, the Southside trail was not open to the public. Therefore, protocol B was used for interviews with residents from these neighborhoods, and also included questions about how these residents anticipated their neighborhoods would change after the Southside BeltLine Trail was opened to the public. Conducting interviews with residents from both sections highlighted

the diversity of resident perception of project outcomes and additionally captured the hopes and anxieties residents had regarding anticipated changes. Care was taken to ensure that a diverse group of residents were represented in the interviews with attention to race, length as a resident, and homeowner status.

Protocol C was used with BeltLine employees and employees of BeltLine partner organizations who directly contributed to the project. This protocol included questions designed to understand their experiences as residents of BeltLine neighborhoods and how these experiences shaped their priorities for their work. These protocols also included questions about the constraints and opportunities within in their jobs, and how they are or are not able to mobilize their feelings, expertise, and priorities into desired project outcomes.

Protocol D was used for Atlanta area professionals to address the types of social and environmental changes that had occurred throughout the BeltLine corridor since the project was implemented, and the effects these changes have on environmental or social processes and the wellbeing and function of the city overall.

All interviews but two were recorded and fully transcribed, after consent was given per IRB protocol. One resident interview was not recorded at the request of the interviewee, but ample notes were taken with the interviewee's consent. Another was partially recorded, and partially note-based, due to an issue with the recording device.

Observation was employed at 10 BeltLine meetings, including advisory board meetings, quarterly briefings, community meetings, study groups, and at 12 BeltLine events. Observation was also employed at meetings and events hosted by BeltLine partner organizations. Additionally, observation was undertaken at five neighborhood meetings for neighborhoods within the BeltLine corridor, and five events hosted by community activists opposed to the

BeltLine were attended for observation, among others. At these events, I observed how project professionals solicited and responded to resident comments, the different priorities highlighted by residents and professionals, and how goals aligned or differed between residents and professionals. All observation events attended are outlined in Table 1.2.

Archival research included review of BeltLine planning documents at multiple stages, subarea master plans, annual reports, binding policy guidelines, and BeltLine stormwater and water management documents. Review also consisted of City of Atlanta Sustainability Guidelines, City of Atlanta stormwater guidelines, and LEED protocols, for which the BeltLine must comply. Some of these guidelines may act as project constraints that shape where and how project professionals may or may not influence project design. Research also included review of relevant materials produced by neighborhood organizations in communities adjacent to the BeltLine's Eastside and Southside Trails, and from citizen action groups with agendas concerning the BeltLine. These materials were used to further contextualize information gathered during interviews and observation (Roche, 2005). Archival materials used can be found in Table 1.3.

Chapter summaries

Three chapters comprise the research for this dissertation. Each chapter is written as an independent journal article, in which unique subsets of the data collected for this project are used to explore the different aspects of urban greening outlined above. Thematically, the papers progress through a discussion of questions related to 1) BeltLine professionals, 2) residents in BeltLine neighborhoods, and 3) social and ecological outcomes from the BeltLine project. This allows for a robust and comprehensive analysis of multiple components of how and why diverse outcomes are both produced and experienced from multiple viewpoints.

Table 1.2: Observation events attended.

Date:	Observation event:
7-10-16	ABI study group meeting
11-21-16	ABI third quarterly briefing 2016
12-6-16	ABI fourth quarterly briefing 2016
4-3-217	ABI first quarterly briefing 2017
5-6-17	Volunteer with BeltLine Partner organization – Trees Atlanta
5-20-17	ABP bootcamp at D.H. Stanton Park in Peoplestown
5-30-17	Town Hall meeting hosted by David Drier
6-1-17	BeltLine NE and SE study group at Trees Atlanta
6-6-17	ABI second quarterly briefing 2017
6-7-17	ABP bootcamp
6-8-17	Old Fourth Ward Alliance meeting
6-11-17	ABP yoga on the BeltLine
6-17-17	Wonderroot housing justice workshop at Ponce City Market
6-21-17	ABP bootcamp
6-22-17	Ponce City Market Shed event
6-25-17	ABP yoga on the BeltLine
6-28-17	Old Fourth Ward Business Association meeting
7-5-17	ABP bootcamp
7-9-17	ABP yoga on the BeltLine
7-12-17	ABP bootcamp
7-13-17	BeltLine N and NE study group
7-16-17	ABP yoga on the BeltLine
7-18-17	BeltLine for All – community conversation hosted by the Atlanta Housing Justice League
7-19-17	ABP bootcamp
7-20-17	BeltLine SE study group at Trees Atlanta
7-20-17	Ponce City Market Shed event
7-23-17	ABP yoga on the BeltLine
7-26-17	Adair Park Homeowner's Protection Workshop hosted in partnership with the Annie E. Casey foundation
7-14-17	Old Fourth Ward neighborhood meeting
8-30-17	Peoplestown Neighborhood Association Meeting
7-8-16	Housing Justice League affordable housing testimonial
4-30-17	BeltLine for all – Housing Justice league canvassing event
12-16- 17	ABI S + SE study group meeting
11-16-17	Atlanta City Studio event with Ryan Gravel
Summer 17	BeltLine design meeting

Table 1.3: Archival materials consulted.

Guiding planning and implementation documents for technocrats:
Atlanta BeltLine 2030 Strategic Implementation Plan
Atlanta BeltLine redevelopment plan
Five-Year-Work Plan
Subarea plans for study areas:
Subarea 2: Master Plan
Subarea 2: Master Plan Appendices
Subarea 2: Park Master plan – Perkerson Park
Subarea 2: Park Master plan – Peoplestown
Subarea 5: Master Plan
Subarea 5: Master Plan appendices
Subarea 5: Park master plan – Historic Fourth Ward
Guiding environmental documents:
Emerald Necklace Study
Environmental Justice Policy
City of Atlanta Sustainability guidelines
LEED guidelines
City of Atlanta Stormwater Guidelines
Guiding social and economic justice documents:
Integrated Action Plan
Progress reports:
Atlanta BeltLine Partnership 2016 Partner's Report
ABI Annual report years 2010-2016
Southwest Corridor Design Presentation
Eastside Corridor Design Presentation

The first paper, titled ***Technocrats are people, too: Exploring the subjectivities and constraints that influence the professionals who design our green urban futures***, explores the experiences of urban professionals, or technocrats, in the creation of urban greening projects. The data used in this article draws from interviews conducted with individuals working for the Atlanta BeltLine Partnership, Atlanta BeltLine Inc. and BeltLine partner organizations. Beginning with an understanding that many technocrats live within the neighborhoods they are

tasked with reshaping, this article explores how technocrats' expertise as planning professionals, and experiences as residents influence their goals for the project. This article also explores institutional constraints technocrats face within the planning process, assessing how these barriers prevent technocrats from achieving some of their desired outcomes. While much of the literature on technocrats places blame on these individuals for contributing to the often inequitable outcomes of urban greening, findings demonstrate that many technocrats feel frustration and anger over project outcomes they deem to be undesirable. This research also establishes that the planning process often requires technocrats to focus their efforts on the generation of project funds, making their expertise and subjective experience less relevant to their work than they would desire. These findings demonstrate that more attention needs to be paid to the subjectivities of technocrats and the institutional structures that limit the scope of their work and the ability to translate their experience and expertise into more equitable project outcomes.

The second paper in this dissertation, ***When solutions are promised but new problems are delivered: Assessing met and unmet resident needs from the Atlanta BeltLine***, investigates the wants and needs of diverse residents for their BeltLine-adjacent neighborhoods. Through interviews with 25 residents, common resident wants and needs for their neighborhood were identified. These priorities were assessed relative to categories such as race, length of time as a resident, and homeowner status – categories that have been correlated with differences in resident experience and goals. These priorities were compared to the outcomes of the Atlanta BeltLine, providing an assessment of whose priorities are and are not adequately addressed by project outcomes. Further, interviews with residents also established new problems that residents experience following the implementation of the BeltLine, contrasting these with the outcomes

promised by the project. Together, these findings demonstrate that the majority of resident needs remain unmet by the BeltLine project while significant new problems have emerged, signifying that urban greening projects are indeed able to transform socio-ecological conditions in cities, but not necessarily in ways that address the needs of existing urban residents.

The third paper, ***To green or not to green? Assessing the outcomes of urban greening, their causes, and potential solutions*** explores the gains and losses that result from urban greening. To understand the tradeoffs produced by the BeltLine, this paper compares the socio-ecological project targets that were promised in comparison with the socio-ecological outcomes that have ensued, drawing from interviews with environmental managers and archival review of BeltLine documents. Using the lens of environmental management, it appears that the BeltLine is producing considerable ecological benefits around the BeltLine trail, spurring a secondary benefit of economic reinvestment in these neighborhoods. Alternatively, the lens of 4 reveals that the environmental improvements around the corridor are contributing to negative social and ecological outcomes for some demographics and processes at a broader scale. Together, these perspectives highlight that urban greening projects can create material socioecological benefits, but not without producing tradeoffs. This paper concludes with a section of actionable and optimistic policies that can be employed to direct tradeoffs in more intentional, equitable ways.

CHAPTER 2

TECHNOCRATS ARE PEOPLE, TOO: EXPLORING THE SUBJECTIVITIES AND CONSTRAINTS THAT INFLUENCE THE PROFESSIONALS WHO DESIGN OUR GREEN URBAN FUTURES [2]

[2] Will, R.G. To be submitted to the *Journal of Political Ecology*.

Abstract

Esteemed urban planner Ryan Gravel publicly left his position at the Atlanta BeltLine, the massive green urban redevelopment project that launched his career, over concerns that the project was exacerbating social inequality in Atlanta, Georgia. His departure raises important questions about technocrats, the experts hired to design and implement neoliberal urban redevelopment projects, as well as their subjectivities, the emotions and identities that influence their understanding of themselves and their work. Using the Atlanta BeltLine as a case study, technocrats were interviewed to investigate how their experiences and identities shape their goals for the projects they work on, and their views of project outcomes. This study found that technocrats' experiences as residents, neighbors, and community advocates within the same neighborhoods they are tasked with reshaping, along with their intersectional race and class identities, produce situated, emotional responses to project outcomes. Many technocrats have feelings of anger, fear, or frustration towards the gentrification, displacement, and erasure of cultural heritage that have resulted from the project. While many technocrats share these feelings, few are able to translate these situated and emotional responses into meaningful change due to institutional constraints placed on their work. Additionally, technocrats' expertise becomes less relevant to their work than one might expect, as the expense of these projects requires them to make decisions based on the generation of project funds. When technocrats, such as Gravel, wish to produce equitable project outcomes but are unable to due to constraints within the technocratic process, they may become dissatisfied and leave. While much of the literature places blame on technocrats for producing the inequitable outcomes of neoliberal urban redevelopment projects, this research demonstrates that much more attention needs to be paid to the subjectivities of technocrats, the overarching structures that limit the scope of their work, and

the barriers they face in translating their emotions, experiences, and expertise into equitable project outcomes.

Introduction

On September 26th, 2016, urban planner Ryan Gravel publicly left his position on the board of the Atlanta BeltLine. Gravel came up with the idea for the Atlanta BeltLine, a large-scale green urban redevelopment project, in his 1999 master's thesis at the Georgia Institute of Technology. More than a decade into the massive project's implementation, the BeltLine is reshaping the trajectory of Atlanta's future around public infrastructure, green space, and alternative transportation. The scale and audacity of the project has led to Gravel's international acclaim as an urban planning visionary. Accordingly, his public departure made headlines and raises several important questions. Primarily, what would motivate a famed urban planner to dissociate from the very project that catapulted his career, and led to international acclaim?

The issue, as Gravel and many others have noted, is that development of the BeltLine has been associated with significant gentrification and displacement in the city. The inequitable outcomes of the project follow the trend of ecological gentrification, which has been well established in political ecology literature. This body of work has demonstrated that the amenities that often accompany urban greening, including walkability, green space, and alternative transit, cause surrounding neighborhoods to become more desirable and expensive (Wolch et al., 2014). The process of ecological gentrification can result in the displacement of low and middle-income residents (Dooling, 2009). Yet, while political ecology offers an explanation for how ecological gentrification occurs, little is known about the professionals who design the projects that cause it. Gravel's departure over equity concerns raises questions about how professionals understand their work, what their project goals are, and the challenges they face in achieving more equitable

project outcomes. Using the Atlanta BeltLine as a case study, this paper investigates these questions in order to refine our critiques of urban greening, and to pinpoint solutions that will lead to more equitable project outcomes.

The origins of the BeltLine contrast sharply with the outcomes that have prompted Gravel's departure. Gravel's thesis proposed that the BeltLine could address decades of inequitable transportation development in Atlanta by improving connectivity and transportation access (Gravel, 1999). Once the project caught the attention of city officials and gained grassroots momentum, it was promoted as a project created "by and for" the residents of Atlanta. Through ample public participation, resident's goals were woven into the project, including environmental justice, affordable housing, jobs creation, and other goals centered on equity enhancement in Atlanta (Gravel, 2016). With community input, the proposal became much more than a transportation project—it became hailed as an opportunity to address social and environmental injustices on a massive scale. Further, by giving residents a prominent seat at the table, it offered an opportunity for historically disenfranchised residents to have ownership over their urban futures.

Today, the Atlanta BeltLine is one of the largest, most expensive, and most comprehensive sustainable development projects in the world. Set to be completed by 2030, the project will provide over 33 miles of multi-use trails that will serve as an "emerald necklace", providing a continuous network of greenspace around the city (Alex Garvin & Associates, Inc., 2004). The project is also attempting to address several prominent social and environmental justice concerns in the city by remediating brownfields and mitigating stormwater issues. In an effort to mitigate ecological gentrification, the project is mandated to provide 5,600 new affordable housing units within a half-mile of the main trail (BeltLine, 2018c). With all of these

targets, it is estimated that the project will cost 4.3 billion dollars, and it is expected to spur $20-40 billion in private investment around the BeltLine corridor (BeltLine, 2018e). Yet, despite all of the advertised benefits and equity-based intentions of the initial proposal, neighborhoods surrounding the project have rapidly become unaffordable for many lower and middle-income residents. Concerned that the project was exacerbating inequality in Atlanta rather than addressing it, Gravel published a public resignation letter. In it, Gravel called attention to his frustrations with the project, citing that he and other colleagues felt largely unable to address inequalities, and further, stated that the project was not adequately addressing promises related to equity and affordability (Saporta, 2016).

Political ecology literature has called attention to the role of experts in creating the often-inequitable outcomes of urban greening. Within this body of work, urban planners, such as Gravel, as well as landscape architects, engineers, and other professionals making decisions about urban development, are often referred to as "technocrats" due to their extensive technical training in specific aspects of urban design (Gandy, 2004; Swyngedouw, 2009;). Technocrats, as a very influential and powerful group of decision-makers, are often critiqued for creating urban governance projects that favor the interests of capitalism and wealthy residents, often leading to an increase in urban inequalities, gentrification, and displacement (Checker, 2011). Given how clearly this has been documented in the literature, it should come as no surprise that the BeltLine, like many other technocratic urban greening projects, has produced inequitable outcomes. Gravel's outspoken and public departure to protest these negative outcomes, however, can prompt us to ask more specific questions about technocrats, their goals for and views of the projects they work on, and the tensions they experience between their goals and project outcomes. Given that much of the literature on technocrats refers to them homogenously, as the

agents knowingly producing inequitable outcomes, this study seeks to further develop our knowledge of how technocrats understand themselves and their work, how they perceive the project they work on, and the challenges they face in producing more equitable outcomes.

Technocrats and subjectivities in political ecology

Over the last two decades, scholarship in the field of political ecology has contributed significantly to our understanding of technocratic governance—the primary means by which large scale greening projects have been implemented in the United States (Checker, 2011; Evans, 2007; Mitchell ,2002). Technocratic governance is "an important component of neoliberal thought, based on the idea that policy should be directed by technical expertise instead of political partisanship" (Budds, 2009 p. 421). Thus, policies and projects that reshape the trajectory of our urban futures, and have considerable material impacts on the lives of city residents, are created and implemented by a handful of experts in their given fields. Political ecology provides a useful lens to discern how technocratic governance is linked to uneven and contestable socio-environmental outcomes (Mitchell, 2002).

It has been demonstrated, for example, that technocratic governance can undermine truly democratic resident engagement in the design and implementation of these projects (Checker, 2011). Because technocrats have more power to reshape urban socio-ecological relations than everyday residents (Castree, 2002), many technocratic projects have been critiqued for not offering avenues for meaningful participation across the spectrums of income, age, and race, making them exclusionary and undemocratic (Roy, 2015). Scholars have noted that because technocratic governance values the formal expertise of technocrats over resident experience, resident goals are likely to fall "on deaf ears" if they differ from technocratic visions (Busch, 2016, p. 96). Compounding this concern, it has been demonstrated that residents' project goals

often differ on the basis of race and class, yet technocratic visions tend to align more closely with the project goals of wealthier, whiter residents (Busch, 2016).

The mechanisms many technocratic projects use to solicit resident input have also been critiqued for being exclusionary. Announcements for resident participation are often primarily distributed via websites, social media, and email. These invitations to participate may not reach lower-income residents, nor older, long-term residents that do not have computer access (Roy, 2015). The literature has amply demonstrated that the project goals of residents with less socio-economic power are frequently left out of project plans (Gould and Lewis ,2012; Swyngedouw, 2009; Castree, 2002, Evans, 2007). As a result, technocratic projects are often critiqued for favoring the needs of economic growth and wealthy residents, such that project outcomes reify existing power relations in cities and exacerbate inequality (Kitchen, 2013; Roy, 2015).

Given these critiques, it follows that political ecology literature is critical of technocrats themselves. Broadly defined, technocrats are professional experts who engage in development work (Wilson 2006). This term can refer to architects, landscape architects, engineers, transit specialists, urban planners, and other professionals employed to make decisions about development. Within the literature, discussions of technocrats are often abstract and casually wrapped within larger critiques of technocratic governance. Some authors demonstrate how technocrats' expertise and professional training is valued more than residents' experiences, concerns, and project goals. They argue that this valuation of technocrats as the "enlightened" decision-makers within development contexts signals the creation of a distinctly post-political moment (Swyngedouw, 2009; Zizek, 1999). This moment is marked by the replacement of political debate with technocratic expertise, where the views and goals of urban residents in regards to their own futures are devalued in favor of the goals of technocrats. A picture emerges

of technocratic experts as people knowingly wielding their power in the service of economic elites at the expense of everyday residents.

While these critiques of technocrats are compelling, Chris Hagerman notes that those in positions of power in governance – including technocrats – are often framed in "one-dimensional, totalizing, and antagonistic ways" within the literature (Hagerman, 2006, p. 288), failing to account for technocrats as people who are far more complex than the literature often acknowledges. Eeva Berglund similarly notes that technocrats "risk being dismissed… by academics as vacuous lifestyle experimenters" (Berglund, 2017, p. 1). This is indicative of a gap in the literature, where we do not know much about the individuals responsible for this work, or what their work entails. Little is known, furthermore, about the ideas, experiences, and intentions of individual technocrats and the everyday job constraints they face in their work that may limit them from achieving particular outcomes. For example, many technocrats enter their career with the goal of making the city a better place and have acquired the specialized knowledge and training that are intended to improve urban life. Yet, the outcomes of their professional work are often antithetical to this goal. This research is meant to open up this black box to better understand the actual lives and feelings of technocrats as they go about their work in complex urban environments and under the constraints of neoliberal urban governance.

Broadening our understanding of the multiple dimensions of technocrats and their work requires exploration of their everyday experiences, their individual identities, and the factors that shape their goals for, and perceptions of, the projects they are tasked with creating. To address this need, this paper employs an investigation of the *subjectivities* of individual technocrats to develop a better understanding of how technocrats understand themselves and their work. The concept of subjectivity allows researchers to explore the identities of individuals, their lived

experiences, and how these identities and experiences shape their view of the world and their interactions with it (Gill, 2008; Grove, 2008; Lau and Scales, 2016; Morales and Harris, 2014; Probyn, 2003; Wetherell, 2008). More specifically, subjectivity is "how one understands oneself within a social context – one's sense of what it means and feels like to exist within a specific place, time, or set of relationships" (Morales and Harris, 2014 p. 706). As such, subjectivity has emerged as a useful way to move beyond assumptions about identities, experiences, and views in order to understand the nuances of individual experiences and perceptions based on identities within governance contexts. The concept of intersectionality is also important with respect to subjectivity, such that individual subjectivities are understood as being multifaceted including race, gender, and class (Holvino, 2010; Crenshaw, 1990). Scholars have also demonstrated that it is problematic to treat identity categories as fixed, assume linkages between particular identities and views, and suppose that communities are homogenous and share the same interests (Agrawal and Gibson, 1999; Lau and Scales, 2016).

Political ecologists increasingly use the concept of subjectivity to explore how individuals experience urban governance relative to their identities (Doshi, 2013; Grove, 2009; Lau and Scales, 2016; Truelove, 2011). For instance, Yaffa Truelove uses subjectivity to understand how the gendered practice of water provision in Delhi, India impacts women and girls (Truelove, 2011). As women are expected to procure household water supplies, this often results in young girls missing school in order to wait for tanker water, and for women to risk harassment, abduction, rape, and bodily harm on their daily journeys to sanitation points. Truelove demonstrates how gender mediates understanding of, and interaction with, the local environment as these practices and risks are experienced by females. In another study examining subjectivity, Lau and Scales (2016) note that mothers in the Gambia are expected to pay for their

children's school fees, food, and medical care, yet the majority of employment opportunities available to lower class women are low paying. Seeking higher earnings, many women prefer to work for themselves as oyster harvesters. The authors demonstrate these women's gendered and classed subjectivities as mothers are inseparable from their interactions with the environment as oyster harvesters (Lau and Scales, 2016). Underlining the importance of subjectivity within governance contexts, the authors argue that environmental policies related to resource use will fail if they do not take subjectivity - the complexity of identity and experience related to resource use - into consideration (Lau and Scales 2016).

While these and other studies explore how subjectivity mediates the experiences and actions of everyday residents within development and environmental governance contexts, few studies have explored how subjectivity mediates the experiences and actions of technocrats with decision-making power. Improving our understanding of the everyday work involved in technocratic planning and the subjectivities of individual technocrats will allow us to move beyond broad critiques of technocrats. This will allow us to develop a more robust understanding of the daily operations and challenges within the technocratic process, and the tensions technocrats experience between the intentions and outcomes of their work. It reasons that subjectivity plays an important role in shaping the actions and decisions of technocrats (Tremblay and Harris, 2018 p. 176; Wright, 2010), and that the literature would benefit from a more robust understanding of the subjectivities of technocrats. As such, this study addresses the untouched lacuna of technocratic subjectivity, exploring how subjectivity mediates the emotional meanings technocrats tie to the projects they work on, and how these meanings translate into decision-making (Ho, 2009).

Specifically, this research seeks to improve our understanding of the subjectivities of individual technocrats, including a focus on their identities, experiences, views, and the constraints they face in their work. Pinpointing specific constraints within the technocratic *process*, leads to new recommendations and solutions in our goal of achieving more equitable urban futures. That means recognizing that technocrats are complex, possess intersectional identities, and occupy "multiple worlds" (Nightingale 2015) beyond their professional role as urban planners, landscape architects, transit specialists, and other types of development experts. Much of the existing literature on technocrats focuses only on their role as expert, obfuscating their identities outside of their profession, which arguably also contribute to their subjectivities.

Accordingly, this study examines how the subjectivities of technocrats are shaped by their identities and experiences *outside* of work, as multifaceted residents living *within* neighborhoods impacted by the projects they work on. For instance, technocrats may be long-term or new residents of the city, may be closely involved with their local communities, and are likely to directly experience positive or negative project outcomes themselves. This research explores the "multiple worlds" technocrats occupy, and the tensions they experience between their personal experiences and views, and their professional role as experts and decision-makers. For instance, how does one's experience as a resident of a neighborhood they are tasked with re-shaping change their goals for the project? How might one's experience of displacement pressure (aggravated by the very project they are tasked with shaping) influence their perception of the project? How might a technocrats' role as a community leader and affordability advocate conflict with project plans poised to redevelop and gentrify their neighborhood? This study investigates how technocrats' multifaceted identities and experiences *beyond* their role as experts influence their goals for and views of the projects they work on.

Finally, this study considers the complex way that subjectivities are linked to decision-making (Ho, 2009). This framing acknowledges that while subjectivity *influences* the ideas, decisions, and priorities of technocrats working on urban greening projects, technocratic subjectivity alone does not *determine* project and policy outcomes. More specifically, technocrats work under many pressures outside of their control, including funding restrictions, policy mandates, operational frameworks, and pressure from the public and elected officials, to name a few (Runhaar et al., 2009; Tryväinen et al., 2007). Many different types of constraints are placed on technocrats and their work, meaning that the intention driven by one's subjectivity cannot automatically translate into action or outcome (Arbaci and Tapada-Berteli, 2012) As such, this study also examines the barriers within the technocratic process that may prevent individual technocrats from producing their desired project outcomes. Understanding how these subjective experiences influence ideas and decision-making, and also how decision-making is influenced by project constraints, allows us to form more sophisticated critiques of technocratic governance, and more targeted solutions in our pursuit of more equitable urban futures.

Case study: technocrats and the Atlanta BeltLine

The completed BeltLine is projected to create a 22-mile loop of multi-use trails, a light-rail system, address multifaceted social and ecological goals, and stimulate billions in private investment – making it the largest redevelopment project in Atlanta's history (see Figure 2.1). The physical infrastructure for the BeltLine, in addition to the projects ambitious social and ecological goals, requires input, collaboration, and negotiation between a host of stakeholders, experts, and professionals. These include BeltLine employees, partner organizations, elected officials, donors, and residents. Clear project goals were outlined in formative documents, including the BeltLine Redevelopment Plan and the BeltLine Equitable Development Plan,

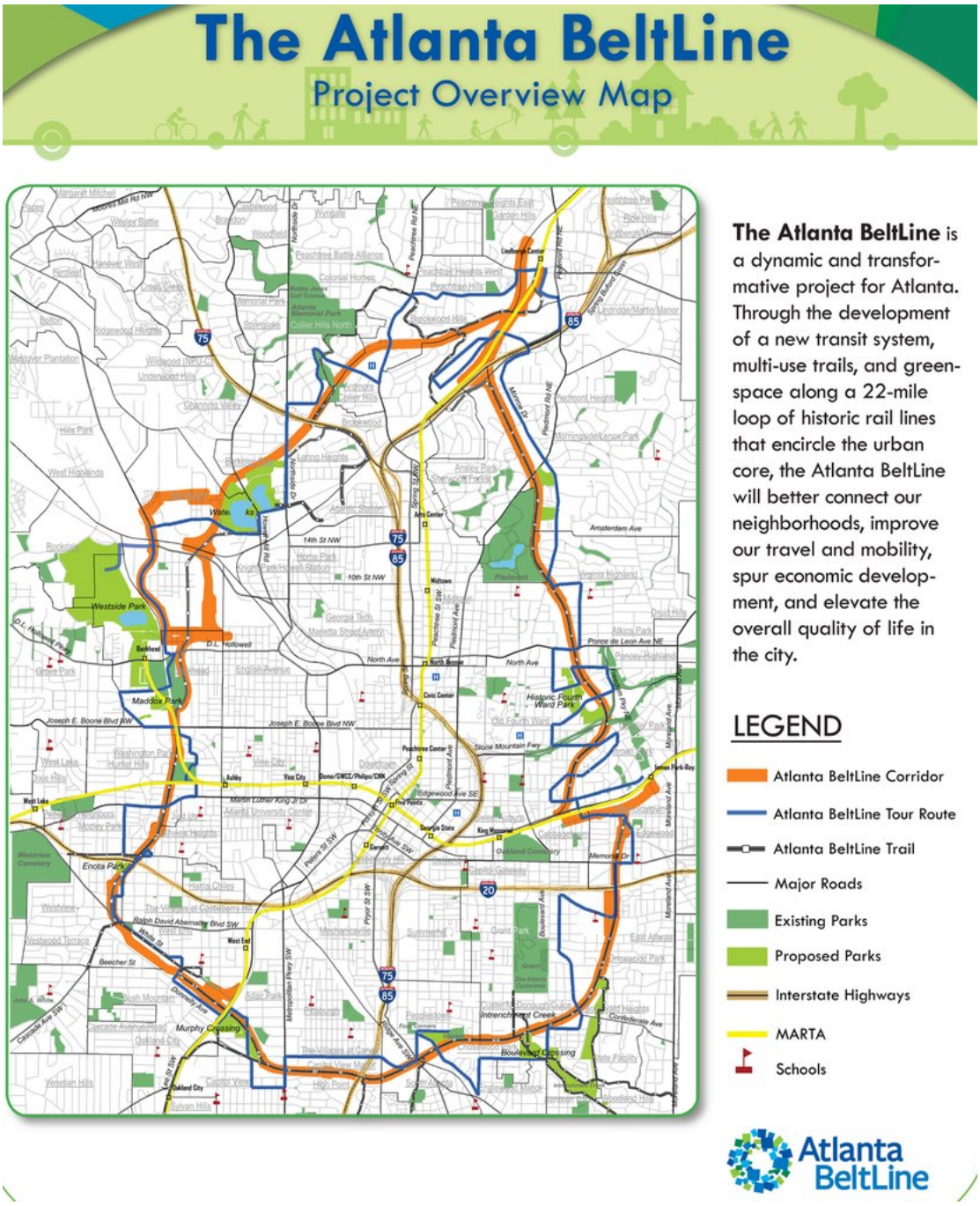

Figure 2.1: Map of the Atlanta BeltLine. Source: beltline.org.

which defined the project's commitment to sustainable, equitable transformations in the city. Though the project was sold on promises outlined in these documents, some of the goals (such as infrastructure and private economic development) are being realized, while other critical

components (such as affordable housing and jobs creation) lag behind. This indicates a challenge BeltLine employees experience in effectively translating initial project goals into material socio-ecological transformations.

The BeltLine evolved from Georgia Tech graduate student Ryan Gravel's Master's thesis into a grassroots campaign for its realization, called Friends of the BeltLine. During the early phases, residents worked to incorporate jobs creation, affordable housing, environmental justice, and other social and environmental equity goals into the plan. Ultimately, the proposal for the Atlanta BeltLine became much more than a transportation project. The project had the potential to address social and environmental inequity in the city on a massive scale, giving historically disenfranchised residents the opportunity to have ownership over their urban futures through community-driven design.

After gaining significant resident buy-in, the City of Atlanta approved the BeltLine after identifying feasible mechanisms for funding. Two formal institutions were created to carry out the project. Atlanta BeltLine Inc. (ABI) was created in 2006 as a public-private entity tasked with implementing the material components of the project. ABI employs real estate directors, transportation specialists, economic development directors, engineers, landscape architects, community planners, and housing policy specialists, among other experts (BeltLine, 2018a). ABI's budget comes from the creation of a Tax Allocation District, bonds, and private funding sources (BeltLine, 2018f). A different organization – the Atlanta BeltLine Partnership (ABP) – was created in 2005 as a 501(c)(3) non-profit tasked with a mission to secure private funds, and to empower Atlanta residents in order to serve a "better connected, more prosperous, healthier Atlanta" (BeltLine, 2018b). The private funds raised by ABP are transferred to ABI for project implementation. Though each institution has a different focus, both are integral to project

development. Other local non-profits, including Trees Atlanta, the Path Foundation, and Park Pride, were also brought in as project partners to help guide the decision-making process.

While decision-making for the BeltLine is primarily guided by experts, including individuals working for ABI, ABP, the City of Atlanta, and partner organizations, resident engagement has remained a cornerstone of the project. Over 315 public meetings and 12,000 participants have been part of the BeltLine process as of 2017 (BeltLine, 2018d). The initial intention of resident engagement was to keep the resident-empowered, future city building mission of the Friends of the BeltLine alive. However, the nature of engagement has changed over time, and many of the initial project outcomes appear antithetical to the resident goals that were established during the project's grassroots phases.

Just as many other large-scale urban greening projects have been critiqued for producing negative outcomes, such as gentrification, displacement, and overall exacerbation of urban inequities, the equity-based goals included in the BeltLine proposal were not enough to prevent the project from producing inequitable outcomes upon implementation. To investigate how and why urban greening projects produce inequitable outcomes, this study explores how subjectivity influences the views, priorities, and decisions made by the technocrats with decision-making power over project outcomes. For instance, exploring how technocrats' views and priorities are shaped by their technical training, in addition to their lived experience as residents and neighbors within the cities they are tasked with transforming. Additionally, this study observes the opportunities or constraints present in the technocratic process that either enable technocrats to, or prevent technocrats from, acting on their priorities in order to achieve desired project outcomes.

Methods

This article is part of a study that consisted of 32 semi-structured interviews with residents and community leaders from BeltLine neighborhoods, stakeholders, and professionals working for or with the BeltLine. In addition to interviews, 47 BeltLine events, including 24 meetings were attended for this research. At meetings and events, the comments of technocrats were observed and recorded. Of the 32 interviews, nine were conducted with technocrats: that is, individuals employed by ABI and ABP, as well as individuals working for BeltLine partner organizations that actively participate in decision-making processes. These interviews were used to inform this article. In order to protect the identities of individuals interviewed for this project, pseudonyms are used in the presentation of data. The individuals interviewed represent a variety of departments, and correspondingly, a broad swath of expertise and goals in relation to project design and implementation. Semi-structured interviews were chosen as they provide a degree of similarity between all interviews. This ensured that each interviewee was asked questions in relation to their identities, experiences, project goals, views of their work, and perceptions of project outcomes. As interviews were not fully structured, conversations were able to flow organically.

Narrative analysis was used to identify themes related to technocratic subjectivity, and project constraints. Themes were coded in relation to personal identity, experiences within and outside of work, and constraints faced within the technocratic process that may prevent technocrats from attempting or achieving personal goals they have for the project. It is notable that each of the technocrats interviewed for this study live in BeltLine neighborhoods – which both speaks to the massive scale of the project, and also to the fact that many technocrats experience project outcomes firsthand. This means that, for this study, the technocrats

interviewed are not just making decisions for abstract populations of people in a far-off place but are the architects of their own urban futures. The data collected from these methods demonstrates that situated experiences, emotions, and institutional constraints shape how technocrats approach their projects.

Findings

Technocrats' emotional and situated experiences of project outcomes influence their view of the projects they work on.

Technocrats working for the BeltLine revealed that their subjectivities are influenced by their situated experiences as residents and neighbors, transforming their understandings of themselves and their work. As many technocrats live in the neighborhoods they are tasked with transforming, they often have first-hand experiences of project outcomes. This personal and intimate awareness shapes their views of the project and project goals. Interviews revealed several prominent ways that technocratic subjectivity is transformed by their experiences of project outcomes, and further, how these situated experiences produce *emotional responses* that are informed by technocrats' intersectional identities on the basis of race and class.

Income largely shapes how Atlanta residents experience the outcomes of the BeltLine. As BeltLine amenities and development are announced and implemented, housing values, property taxes, and rental prices in adjacent neighborhoods increase (Immergluck, 2009). Low- and middle-income residents in these neighborhoods become vulnerable to displacement as upper-middle class residents move in, willing to pay a premium for amenities provided by the BeltLine. Accordingly, new and existing upper-middle class residents who can afford high property taxes may view increasing home values as a *positive* project outcome, while low- and middle-income

residents experiencing displacement or displacement pressure may view the market shift in their neighborhoods as a *negative* project outcome.

Income is particularly important regarding technocratic subjectivities. An interviewee revealed that staff-level technocrats working for the BeltLine receive middle-income salaries, while the CEO and Board members receive higher salaries, as would be expected. Many staff-level technocrats living in BeltLine neighborhoods have been displaced, or experience displacement pressure from the very project they are tasked with creating. For example, Maya, an African American, staff-level technocrat hired to develop equity-based goals, discussed how the BeltLine negatively impacts her as a middle-income resident. She stated: "I just got my tax bill, it's unbelievable… [The BeltLine], it's like a train that's going through your neighborhood, leaving increased housing values and gentrification in its wake". Maya notes that the arrival of the BeltLine in her neighborhood has been accompanied by an influx of luxury apartment units and wealthy residents, leading to the displacement of existing low and middle-income residents. Figures 2.2 and 2.3 show luxury units that have been developed in the Old Fourth Ward neighborhood since the BeltLine was implemented, while Figure 2.4 shows traditional homes in the neighborhood. Maya explained that while she is not low-income, she is now on the lower end of the income spectrum within the working-class-turned-luxury neighborhood. If prices continue to increase, she too, may become displaced or precariously housed. Maya's subjectivity, rooted in her experience as a middle-income resident, negatively shapes her view of neighborhood transformations, and her perception of project outcomes.

Ava, a white, staff-level technocrat working on the BeltLine's equity-based goals, has experienced similar affordability pressures since the BeltLine came online, which she says

Figure 2.2: Luxury, BeltLine-adjacent apartments in the Old Fourth Ward.

Figure 2.3: Luxury townhomes planned for the Old Fourth Ward neighborhood following the implementation of the Atlanta BeltLine.

Figure 2.4: Traditional garden apartment in the Old Fourth Ward neighborhood next to a new-build home.

affects her both as a resident and as a technocrat. She stated, "I've seen rents *skyrocketing*. It's disheartening, and disconcerting to see that. Personally, and professionally". The shift in the rental market in her neighborhood renders her increasingly vulnerable to displacement. The interviews with Maya and Ava were not unique, as other middle-income staff-level technocrats expressed similar concerns over their own housing security in relation to the project. In fact, one technocrat interviewed had already been displaced by BeltLine-driven gentrification.

While staff-level technocrats experience the same displacement pressures as other middle-income residents, the CEO of the BeltLine, Board members, and a select few project leads receive higher salaries, placing them in the ranks of upper-middle income residents. Interviewee Jake, a white, higher salaried technocrat in a managerial role, lives in a BeltLine neighborhood. When asked how he has experienced changes in his neighborhood since the BeltLine has come online, he responded, "I had *just* bought my house, like, two years earlier, two blocks off this BeltLine. I love this project!". Though all technocrats interviewed were asked this question, Jake's response differed substantially from Ava, Maya, and other staff-level technocrats' responses. Jake's response did not reflect concern for his own housing security or concerns that his neighborhood was becoming increasingly unaffordable to middle- and low-income residents. Instead, his response indicates that he views the market shift in his neighborhood following BeltLine implementation as a *positive* project outcome. He expressed excitement over the increased value of his home, rather than concern over increased property taxes. Jake's subjectivity, his understanding of himself and his work, is informed by his status as an upper-middle-class resident.

Together, interviews revealed that technocrats' perceptions of project outcomes are rooted in their subjective experiences on the basis of class. While the literature has established

that urban *residents* experience project outcomes differently on the basis of class (Wolch et al. 2014), these findings demonstrate that technocrats experience the same class-based outcomes as other residents. Further, these findings establish that the emotional responses tied to technocrats' class-based experiences of project outcomes influence their views of the project. Ava, Maya, and other middle-income technocrats discussed project concerns relating to affordability, gentrification, and displacement, rooted in their own intimate feelings of fear, anger, and sadness for both their own futures and those of their neighbors. By contrast, upper middle-class technocrat Jake discussed his feelings of excitement over how the project is transforming the housing market in BeltLine neighborhoods. This research shows that awareness of the negative outcomes of a project like the BeltLine arises not simply through technical training associated with one's professional expertise, but through situated experiences and emotions that have the potential to transform technocrats' understandings of themselves and their work. And furthermore, higher-level technocrats with the most influence on decision-making outcomes do not feel the same negative emotions as other residents in Atlanta.

Beyond concerns of how project outcomes affect their personal housing security, technocrats also witness and express concern over how the project affects their neighbors and loved ones. When asked whether her experience as a resident influences how she approaches her work, Ava responded, "The experiences I've had with my neighbors in terms of people losing their homes… has motivated me to be more mindful and… to put faces to these issues, because it's really easy to sit up here and theorize and philosophize about equity". She noted that her situated experience as a neighbor provides meaningful context for discussions of affordability and equity with her coworkers. Rather than considering the BeltLine's equity goals abstractly, she considers how the successful or unsuccessful implementation of these goals will impact her

neighbors and loved ones. Her situated experience as a caring neighbor, and the emotional bonds she has to her neighbors, family members, and friends across the income spectrum within the BeltLine corridor, influences her view of her work.

Technocrats also expressed concerns regarding how the project is affecting the Atlanta community at large, and how it is contributing to the erasure of African American cultural heritage within BeltLine neighborhoods. For instance, Maya is an advocate for existing residents, affordability, and community legacy in the historic Old Fourth Ward neighborhood. The Old Fourth Ward is home to Sweet Auburn, the birthplace of Dr. Martin Luther King Jr., and his former parish, Ebenezer Baptist Church. The first section of the BeltLine was implemented in Old Fourth Ward, and the neighborhood has since become one of the fastest gentrifying areas in the city. Demographics have shifted from 80% African American to less than 50% African American since the BeltLine came online (Statistical Atlas, 2018). As an advocate of both the legacy and affordability of the Old Fourth Ward, and as an African American woman, Maya feels the BeltLine has contributed to the erasure of the legacy of the neighborhood. She stated,

> "This is Sweet Auburn! This is Dr. King's neighborhood! It's not more important, it's just got a certain kind of importance… it's a kind of erasure. And to a limited extent, but to some extent, it's also racial, because the neighborhoods that are being erased are traditionally African American neighborhoods, which are traditionally low-income neighborhoods."

Maya views the neighborhood changes that have occurred following BeltLine implementation as deeply problematic as the heritage and legacy of the community is being enveloped by incoming developments and market changes. The Old Fourth Ward is now prominently known for its proximity to the BeltLine's Eastside Trail, Ponce City Market – a luxury housing, dining, retail, office space and entertainment center linked to the BeltLine, and a barrage of luxury apartments, condos, and new-build multimillion dollar homes surrounding the

Historic Fourth Ward Park – a new BeltLine sponsored green space. Unless substantial changes are made to the trajectory of the project, Maya has a legitimate fear that this pattern of displacement and community erasure will persist as the BeltLine continues to be implemented in the historically working class, African American neighborhoods in its path. With regard to the histories of racially discriminatory development in Atlanta, the BeltLine contributes to the legacy of revitalization projects that disenfranchise black communities by displacing existing and native residents when it becomes profitable to cater to wealthier, often white, residents.

Witnessing and experiencing project outcomes that are largely antithetical to their initial motivations, goals, and promises, also produces emotional responses that influence how technocrats feel about the outcomes of their work in relation to their role in a community. For instance, when discussing how she feels about outcomes of the BeltLine, Maya stated:

> "It's just so *sad*. I'm going to look up and it's just going to be, it'll just have happened. And it will have happened even though we're screaming, 'No! Stop! We can't do it this way!' We sold them on something else. That's what I keep coming back to. We sold it on not having it do exactly what it's doing."

Maya indicated that she would not have made the initial promises of the project to her neighbors and loved ones if she didn't intend for them to be realized. Andy, a white, higher-level technocrat that had been involved with the project since its genesis with Friends of the BeltLine, offered a similar sentiment when discussing how he feels about project outcomes. He stated, "We weren't making those promises to abstract populations of people. We were making it to friends and neighbors, and people that we love".

These findings demonstrate that technocrats may begin a project with a genuine intention to improve aspects of urban life for their friends, family, and neighbors, but their perceptions of their work change when these promises are not fulfilled. This can lead to negative feelings tied to their work and to the project as a whole.

The institutional context shaping technocrats' work

Technocrats working for the BeltLine also described how the institutional context in which they are employed transforms their view of, and approach to, their work in in several significant ways. Specifically, it is *constraints* imposed on various institutional contexts that are most influential. As previously described, BeltLine development was bifurcated into two separate agencies – Atlanta BeltLine Inc., a public-private, quasi-governmental entity, and the Atlanta BeltLine Partnership (ABP) a private 501(c)(3) non-profit. While both agencies are an integral part to the development and implementation of the BeltLine, they each have different objectives, which influence how technocrats' approach and understand their professional role. Further, each institutional context is accompanied with significant, but distinct, limitations on what technocrats can do or say in regard to their work. Interview responses highlighted the need to examine how different institutional contexts, with different mandates and goals, influence their subjectivities and understanding of themselves and their work.

For example, technocrats working for ABI cannot advocate or lobby for particular outcomes. Rather, they are required to focus on the material implementation of the project – including the siting, permitting, negotiating, and building of the BeltLine. By contrast, technocrats working for ABP are primarily focused on philanthropic fundraising and community engagement. While both organizations have a central focus on raising project funds, a tension exists between the two organizations because implementation and engagement are disconnected. Due to ABP's status as a private non-profit organization, technocrats working for ABP are able to advocate and lobby for particular outcomes, something technocrats working at ABI are unable to do. For instance, technocrats working for ABP can encourage residents to vote for issues affecting or affected by project development, but they are not in a position to influence

implementation. This bifurcation of project objectives – implementation at ABI and private fundraising and engagement at ABP – mean that some of the project's equity-based goals (affordable housing, jobs creation, environmental justice, and equity enhancement) become lost in the process, as these goals are not the primary focus of either institution.

For example, when discussing her thoughts on why the project has contributed to so much gentrification, despite the BeltLine's stated commitment to equity and affordable housing, Maya explained that the prioritization of implementation at ABI plays a significant role. She stated, "They [at ABI] see their job as an infrastructure job. They don't see their job as an equitable development job". Because Maya was involved with the Friends of the BeltLine group that helped to establish the equity-based project goals with members of the community before implementation began, she has observed how the bifurcation of priorities between ABI and APB contributed to the dissolution of focus on initial project goals. She went on to say:

> "ABI is really responsible for *building* the BeltLine… Over time, because it was apparent that ABI was not interested in the social impacts, the partnership has become the champion of the social impacts… so we talk about affordable housing and jobs, because the BeltLine, ABI, does not. Our original charge was to support the BeltLine and to raise money. But as soon as it became obvious that they didn't even care about the stuff they were supposed to care about, the partnership was moved into that spot".

Similarly, ABP employee Emma, a white, staff-level technocrat working on community engagement, discussed how this bifurcation complicates the achievement of project goals. She noted that the advocacy constraint at ABI can be problematic in the advancement of specific goals, stating:

> "It definitely gets kind of complicated because there are certain things that ABI can't say…It's also a reason why we need to exist because we can encourage advocacy for the project… but they [ABI] can't say things like that… it's always a little bit of a dance between the two organizations to figure out what's the appropriate way to push things forward".

Both Maya and Emma recognize that ABP can support the advocacy of particular outcomes in ways that technocrats working for ABI cannot. However, translating this advocacy

into more equitable outcomes remains a challenge due to institutional constraints at ABP. Allen, an African American, staff-level technocrat working on equity-based goals notes that, “We sit in an advocacy place more than we sit in an implementation place”. He recognizes that while he and his colleagues at ABP have the ability to advocate, they cannot mobilize their own advocacy directly into the implementation of equity-based goals.

This “dance” between the two organizations influences technocrats’ subjectivity and understanding of their roles at the BeltLine. Employees working for ABI and ABP recognize that their experiences and priorities cannot automatically translate into action. The institutional barriers preventing implementation at ABP and advocacy at ABI supersede and confine their individual goals. Even as most technocrats interviewed were concerned about the project’s contribution to gentrification in Atlanta, these technocrats also recognize the major challenges involved in shifting or reprioritizing project goals to reflect their concerns, as their individual influence is highly constrained by the institutional contexts they work in.

Further, the results of this study demonstrate that the power involved in technocratic decision-making is often more complex than is discussed in the literature. While technocrats do have more power to reshape urban greening projects than everyday residents, there are complex hierarchies of power within technocratic institutions. That is, staff level technocrats report to technocrats in managerial roles, and technocrats in managerial roles report to higher-placed institutions and individuals, such as Invest Atlanta and the Mayor. Interviews also revealed that instead of operating within a hierarchy, every technocrat has to report to, and take direction from, other technocrats or institutions. Accordingly, power is negotiated between a complex constellation of actors within a number of institutional constraints.

Interviews also revealed that when green redevelopment projects are large in scale, complex in their goals, and expensive, the actual work being done by technocrats has to shift accordingly. In order to move projects of this scale forward, technocrats' decision-making must reflect what will raise enough money to ensure project viability. This means that while many technocrats (especially at the staff level) understand the problems of gentrification and displacement associated with the projects they work on; they are pressured to make decisions primarily based on the generation of capitalist redevelopment and private funding rather than social equity concerns. This means that technocrats' expertise becomes less relevant to their daily work than one might expect, as they are encouraged to make decisions primarily based on what will raise the most money for the project. At the BeltLine, specifically, technocrats' expertise gets shifted from initial equity-based project goals, to securing donors, marketing, generating development in the BeltLine's Tax Allocation District or TAD, a type of Tax Increment Financing (TIF), and other mechanisms to raise money for the project.

In the neoliberal context of technocratic urban redevelopment, tax increment financing (TIF) and philanthropic donations have become prominent ways to raise project funds (Immergluck, 2009, Pacewicz, 2012; Raddon, 2008; Weber ,2002). These methods require technocrats to promote and enable capitalist development in strategically selected neighborhoods in order to capture gains, or to incentivize philanthropic giving by attracting corporate and private donors. In turn, this facilitates the production of uneven socio-ecological outcomes that favor the interests of developers, the business community, and wealthy residents. In order to raise project funds through the BeltLine TAD, which extends half a mile on either side of the BeltLine trail, technocrats must promote development within this district. The more local

property taxes rise as a result of this development, the more gains will be captured to finance the BeltLine (Immergluck ,2009).

The emphasis on generating project funds through the development of the TAD influences the work being done by technocrats. Jake, who works for ABI, mentioned how his decision-making is guided by what will raise the most money. When making a decision regarding implementation, he says he must ask himself, "Will it help spur development in the TAD, thereby generating more funds for us to do more? And financial options, is there more than one way for us to raise money for parks? There generally isn't." Jake highlights a central tension of the BeltLine project: the more new developments are spurred in the BeltLine's Tax Allocation District, the more funds will be available to achieve project goals. But that development often increases property values in the areas adjacent to the BeltLine. Since there are few other ways to fundraise besides the establishment and development of a TAD, the contradiction arises that the project *must* spur gentrification first in order to raise funds to carry out implementation, including equity-based goals. The more redevelopment occurs, and the more property taxes rise, the more funds are generated for the project. However, this fundraising mechanism negatively impacts technocrats' ability to implement affordability goals, as the BeltLine's mandated affordable housing units can only be implemented within the TAD. ABI employee, Ava, discussed the contradiction between gentrification in the TAD and the achievement of affordable housing goals, stating, "*that's* the struggle, because that's where [affordable housing is] needed, but that's where it's really hard to do". Ava is referencing that property taxes in the TAD have increased so much in response to BeltLine-encouraged development that the funds available for affordable housing can't go very far within the district. Essentially, the project must spur gentrification within the TAD first in order to carry out equity-based goals. A Catch-22.

Technocrats working for ABP also have to shift the focus of their work from the initial equity-based project goals to fundraising. When interviewed, Emma, who works for ABP, stated that she joined the team with the goal of catering to Atlanta residents across the income spectrum. She wanted to equitably serve residents in BeltLine programming, events, and other engagement efforts. However, shortly after being hired, she felt pressure from another department to shift her focus away from equity efforts to engaging wealthy residents that could contribute to a strong donor base. She has been instructed by her superiors that in order for engagement to be successful, "people become advocates and they become users and they also sometimes become donors, which I don't mention a lot… but the [redacted] department would be remiss if I – I need to incorporate that into my psychology a little bit more… getting donors". She is referencing the pressure she feels to view the attraction of donors as a primary motivator for how she designs engagement opportunities. Her understanding of the purpose of her work shifts accordingly to cater to the interests of wealthy residents. She sees successful fundraising as an essential component of her job, something that makes execution of the project possible. Yet, as project engagement is catered to potential donors, the project is increasingly designed for and influenced by wealthy residents who can afford philanthropic giving. While fundraising is seen as necessary, this approach reifies existing wealth inequalities in the city and de-emphasizes the justice and equitable engagement that were cornerstones of the initial BeltLine project goals.

A major reason why the work being done by technocrats does not reflect their awareness of the problems associated with the projects they work on relates to the constraints and priorities of ABI and ABP. While both institutions are focused on raising funds for implementation, either by securing funding sources, spurring development in the TAD, or attracting donors, the money raised is primarily used to implement the physical components of the project, rather than being

reallocated to more robustly address the social equity goals that have largely been unmet. This means that the daily work being done by technocrats remains focused on, or guided by, the need to generate project funds for the sake of implementation. The institutional constraints and complex implementation and funding arrangements of the BeltLine mean that many of the professionals working for the BeltLine are only tangentially engaging in the expertise and training that led to their hiring. Their expertise in community engagement, the preservation of affordability, economic development, or engineering, for example, become secondary to the goals of generating project funds through a narrow suite of mechanisms. Fundraising, rather than the expertise technocrats were hired for, becomes the primary focus of technocrats' daily work.

Some technocrats may be able to compartmentalize these tensions and see them as just "part of the job." But others who are not able to compartmentalize negative project outcomes develop job fatigue. Some technocrats are frustrated that their expertise and experience matter less than their role as fundraisers. For example, Maya said, "Trust me, trust me. I've been complaining for *years* and it hasn't done a thing… at some point it's like, this is a waste of my time". With few opportunities to pursue equity-based goals for their own sake, or to utilize their expertise and experiences to help design a more equitable future for the residents of Atlanta, several technocrats have left the project. Most notable was the public resignation of project creator Ryan Gravel. Technocrats' subjectivities, their understanding of themselves and their work, are influenced by the institutional constraints that prevent them from being able to meaningfully address their concerns about the project. Negative emotions associated with these constraints can lead to job dissatisfaction and turnover of technocrats who wish they were able to change project outcomes but are largely unable to.

Conclusions

As residents of the cities they are tasked with reshaping, technocrats' subjectivity arises from their personal experiences of, and emotional responses to project outcomes. These concerns are also tied to their intersectional experiences based on race and class. For example, African American technocrats invested in the preservation the legacy of Dr. Martin Luther King Jr. in the Old Fourth Ward neighborhood may experience great tension between their goals for the project and the outcomes they witness. Middle-income technocrats that have been priced out and displaced from their neighborhoods following the implementation of the BeltLine may experience frustration and disappointment with project outcomes. The emotional responses of fear, anger, and sadness over these outcomes are linked to their identities and experiences beyond their role of professional expert.

Technocrats' subjectivity is also shaped by constraints placed on their work by the institutional context they work in, including local laws and funding mechanisms. These constraints can be frustrating for technocrats, as they prevent them from mobilizing their subjective experiences with and concerns about inequitable project outcomes into change. Acknowledging the emotions and experiences of technocrats matters because the literature often places much of the blame for the negative outcomes of technocratic projects on technocrats themselves. However, this research clarifies that many technocrats are dissatisfied with inequitable project outcomes but are prevented from creating meaningful change due to institutional constraints on their work.

The tension between technocrats' concerns about project outcomes, and the constraints that prevent them from prioritizing equity-based outcomes, can be a heavy burden to bear. While some can compartmentalize their emotions and accept constraints as "part of the job", others

who wish to resist negative project outcomes, but are unable to, quit. The public departure of project creator Ryan Gravel over inequitable project outcomes, and the quiet resignations of others with similar concerns, demonstrates a high rate of turnover for technocrats who wish to produce equitable outcomes. Developing our understanding of technocrats' subjectivities produces a better understanding of how and why technocrats are unsatisfied with project outcomes and the constraints they face. This finding also emphasizes the need to fully examine the structures that dictate opportunities and constraints for technocrats to influence project outcomes.

As urban redevelopment and greening projects are increasingly neoliberal, guided by technocratic decision-making, the role of expertise needs to be more closely examined. Specifically, the idea that neoliberal projects are *only* guided by technocratic expertise needs to be reevaluated. Since many staff level technocrats are not given the opportunity to use their expertise as the primary vehicle to make decisions, and instead focus on economic and fundraising considerations, what experts, and whose expertise, actually shapes the institutional constraints of their work? Further, as technocratic projects have largely been critiqued for disabling democratic decision-making and for prioritizing capitalist agendas, what is the justification for this type of governance when the hired experts largely cannot draw from their expertise?

This research demonstrates that the subjectivities of technocrats, including examination of their identities, emotions, and experiences, play a significant role in how they view the outcomes of the projects they work on and their satisfaction with their jobs. Many directly experience or are intimately aware of negative project outcomes including gentrification, displacement, and erasure of cultural heritage, that affect them and their communities. Though

many technocrats have negative feelings about particular project outcomes, the institutional constraints placed on their work prevent them from being able to draw on these emotions, experiences, and even their technical expertise, to make meaningful change and produce more equitable outcomes. This means that more attention needs to be paid to the structures that guide and constrict their work, and to the possibility of mobilizing their collective and shared frustrations into productive resistance.

CHAPTER 3

WHEN SOLUTIONS ARE PROMISED BUT NEW PROBLEMS ARE DELIVERED: ASSESSING MET AND UNMET RESIDENT NEEDS FROM THE ATLANTA BELTLINE [3]

[3] Will, R.G. To be submitted to *Environment and Planning C*.

Abstract

Urban greening projects are frequently promoted for their ability to simultaneously address social, ecological, and economic conditions in cities for all residents. However, the literature has demonstrated that resident priorities for urban greening can differ by demographic categories, and that negative outcomes can result for some residents. Furthermore, little is known about how well projects address the needs of existing and diverse residents. This paper reports the results of a case study about resident priorities and outcomes related to the Atlanta BeltLine – one of the largest urban greening projects underway in the United States. Priorities were assessed relative to categories of race, length of time as a resident, and homeowner status. Across all categories, the most prominent priority was the creation and preservation of affordable housing, followed by improved accessibility, yet some differences emerge when looking at demographic characteristics. These priorities were then compared to the goals implemented by the BeltLine to determine whose needs are, and are not, being addressed by the project. Finally, a broad spectrum of new problems was reported by residents, including co-option of neighborhood meetings by gentrifiers, negative impacts on mental health due to gentrification and displacement concerns, increased neighborhood tension, and increases in local traffic and commute times, among others. Overall, results suggest that initial plans for the BeltLine appear to reflect many resident priorities across demographic groups, but several years into project implementation, the majority of residents' needs remain unmet while several significant new problems have emerged.

Introduction

> "They sold us a dream. It hasn't come to fruition for everyone that lives on the BeltLine" – *Paulette, Old Fourth Ward neighborhood resident*

> "How do we keep what's there and make it something new without trying to bulldoze things? How do we celebrate the history while moving forward into the future? Does the

> history matter to neighborhoods, or do we say forget it, wipe it out, and move on, because what we're bringing is better?" – *Amelia, Pittsburgh neighborhood resident*

Paulette and Amelia are referring to the BeltLine, an ambitious project in Atlanta, Georgia that proposes to connect 45 in-town neighborhoods by converting a 22-mile loop of unused rail into a multi-use path. The project also promises to create new greenspace, affordable housing, jobs, and to improve ecological and public health. The BeltLine is an example of a large-scale urban greening project, which have become increasingly popular solutions to simultaneously address a myriad of social, ecological, and economic issues in cities. Given the scale of the BeltLine, the project has the potential to drastically transform adjacent neighborhoods, and promises a new, better future for the city and its residents. An early planning document for the project declares:

> "The BeltLine is one of those rare projects that has the extraordinary potential to transform the City of Atlanta… by attracting and organizing some of the region's future growth around parks, transit, and trails located in the inner core of Atlanta – will change this pattern of regional sprawl and lead to a vibrant and livable Atlanta with an enhanced quality of life for all City residents." (Atlanta BeltLine Redevelopment Plan, 2005).

Over a decade into project implementation, the BeltLine has, indeed, sparked immense transformations in the city, particularly in BeltLine neighborhoods. However, the project's promise to enhance quality of life for all City residents stands in stark contrast with the changes that many residents, including Paulette and Amelia, have experienced. While the transformative potential of large-scale urban greening projects is clear, important questions remain regarding how well these projects address what diverse city residents actually want and need within their neighborhoods, and further, what new problems these transformations create.

Literature on the outcomes of urban greening provides evidence that urban greening projects may not meet their initial promises (Checker 2011; Wolch, Byrne, and Newell 2014), and further, that residents' experience of project outcomes may differ by demographic categories

(Palardy, Boley, and Gaither 2018). While much has been documented about commercial and residential displacement, including the breakdown of critical community networks that can result from urban greening projects (Newman and Wyly 2006), little is known about other types of problems urban greening projects can create for existing residents.

This study addresses these knowledge gaps by examining how well projects account for the wants and needs of diverse neighborhood residents. First, a review of literature on urban greening projects, including how they are advertised, how resident input is solicited, and how residents are impacted by projects upon implementation, is provided. Then, the methods for this study are discussed, which include semi-structured interviews with residents from BeltLine neighborhoods. Interviews included questions about residents' wants and needs for their neighborhood and the changes they have experienced in their neighborhood since the BeltLine has been announced and implemented. The 12 most common resident priorities for their neighborhoods are then presented, with attention to the ways that priorities differed by demographic categories including race, length as a resident, and homeowner. The most common new problems reported by residents are also reported, followed by a discussion and conclusion about how the BeltLine is and is not addressing different resident needs.

Diverse resident needs for urban greening

Large-scale urban greening projects are increasingly being implemented in cities around the world. These projects are promoted as opportunities to simultaneously address social, environmental, and economic issues through the construction of complex, multi-objective greening projects (De Sousa and D'souza, 2012; Hager et al., 2013; Searns, 1995). These often extraordinarily expensive projects typically repurpose "unused" space (such as decommissioned rail lines and abandoned industrial areas) into new forms of urban nature (such as walk-and bike

trails and parks) that are thought to improve social and environmental conditions, thereby incentivizing economic redevelopment (Reshwan, 2006; Dale and Newman, 2009; While et al, 2004). Prominent examples of such projects include the High Line in New York City (Foster, 2010), the BeltLine in Atlanta, Georgia (Weber et al, 2017), the South Bronx Greenway in New York City (Svendsen, 2013), and the Promenade Planteé in Paris, France (Graziano, 2014). These projects are often sold on their ability to provide universal benefits for residents. For example, in addition to ecological and economic goals, the South Bronx Greenway also includes goals for "safe transportation, affordable housing, improved public health, and quality education, access to jobs, and the enjoyment of parks and the environment" (Svendsen, 2013 p. 282). The social benefits that urban greening projects advertise are promoted as value-free and universally beneficial, and often generate considerable public support in early project stages.

To garner further resident support, many urban greening projects often incorporate resident engagement initiatives to solicit residents' opinions and incorporate them into project design. It has been noted that such forms of participatory planning may facilitate equitable representation in the design process (Alvarez, 2012), create collective agreements (Matthews, 2013), and increase resident attachment to and involvement with the completed project (Huang, 2010). For instance, resident input was solicited for the New York High Line through an "Ideas Competition" for designs related to access and safety (David and Hammond 2011; Community Input 2012). After a jury decided on the top resident submissions, the public was again engaged to discuss thoughts on the proposed designs (Alvarez, 2012). This type of targeted resident engagement is also undertaken for the Atlanta BeltLine via neighborhood-based design charrettes, in which residents can deliberate between several pre-fashioned designs (BeltLine, 2018). These forms of participatory planning engage residents in design-related decisions, but do

not necessarily solicit residents' broader perspectives on what they want and need in their neighborhoods. Scholars note that such narrow avenues for engagement are a critical oversight within the design process for urban greening (Roy 2015).

It has also been widely argued that more meaningful and intensive pathways for public participation are necessary to produce equitable outcomes for diverse urban residents (Matthews, 2012; Busch, 2016). As Gobster and Westphal (2004) argue, urban greening projects transform the daily lives of nearby residents, so planners must evaluate what residents need and how projects can deliver their priorities. But the argument has also been made that that participatory planning initiatives are likely to replicate existing urban inequalities, unless structural racism is addressed and truly inclusive participation measures are used (Ross and Leigh, 2000; Busch, 2016; Finney 2014). Essentially, because cities are made up of heterogenous residents whose daily lives will be affected in different ways by the outcomes of urban greening projects, it is necessary to consider the needs of, and project implications for, diverse groups of people.

Other research has shown that resident priorities for urban greening can differ by demographic categories such as race (Busch, 2016), new or long-term resident status (McGirr et al., 2014; Stein, 2011), and renter or homeowner status (McGirr et al, 2014; Backstrom, 2018). Further, the outcomes of urban greening projects have been shown to serve some demographics better than others. It has been documented that in the absence of good policy, the creation of environmental amenities via urban greening programs is likely to increase environmental inequality along race and class lines as property values increase, wealthier residents move in, and existing renters and low or fixed-income homeowners are displaced (Gould and Lewis, 2012). Such observations have led Dale and Newman (2009) to ask whether the benefits of urban greening projects accrue to original members of the community, "or are there differential

benefits that accrue to new higher-income residents at the expense of *current* residents, retailers, and at the expense of existing community diversity?" (696, emphasis added). This question highlights the importance of understanding how urban greening projects both impact and address the needs of diverse residents across demographic categories.

Some urban greening projects have also been found to serve racially homogenous groups within racially diverse areas. For instance, the New York High Line has been found to be occupied predominately by white users (Reichl, 2016). Given the diverse racial composition of the surrounding neighborhood, the High Line is failing to function as a demographic space for all local residents. In fact, some long-term residents of the neighborhood surrounding the High Line were initially enthusiastic about the project, however "Became disenchanted with the High Line's success and began accusing the FHL [Friends of the High Line] of facilitating gentrification" (Lang and Rothenberg, 2017 pg. 1754). One long-term resident went on to call the project a 'pyrrhic victory' (Lang and Rothenberg 2017), indicating that successful implementation of the project was not worth the negative outcomes that many local residents experienced as a result.

Given the evidence in the literature that project outcomes might not serve what existing residents need, the focus of this study is to continue to develop an understanding of how the BeltLine does or does not serve the needs of diverse residents. This paper investigates the priorities that residents living within BeltLine neighborhoods have for their communities. The most common resident priorities are discussed, with attention to goals commonly shared between residents of particular demographic categories, including race, length as a neighborhood resident, and homeowner status. These priorities are compared with the targets and outcomes of the BeltLine, illustrating whose priorities are and are not being addressed by the project. As the

literature has also documented that projects may produce negative outcomes for residents, this study also investigates new problems residents report resulting from the BeltLine. New problems are considered in relation to what the BeltLine can and cannot control. This is important as urban greening projects have the potential to drastically transform neighborhoods, but planners may not have the ability to address the secondary problems they cause, placing an undue burden on residents.

Methods

The findings in this article are part of a larger study investigating the inputs and outcomes of the Atlanta BeltLine. This paper, specifically, uses semi-structured interviews with 25 residents of BeltLine neighborhoods. These interviews were recorded, fully transcribed, and coded for themes relating to resident priorities for their neighborhoods, as well as new problems they experience in their neighborhood since the BeltLine has been announced and implemented. Of dozens of neighborhood priorities mentioned by residents, priorities held by five or more interviewees (at least 20% of the sample) were regarded as themes and were coded for finer analysis. 12 total themes were analyzed to establish whether neighborhood priorities differed or were shared between different groups. The demographic categories by which these themes were assessed include race, new or long-term resident status, and renter or homeowner status. In order for interviews to remain anonymous, pseudonyms are used with interview quotes. Ultimately, the methods and analysis are used to understand how well the priorities of urban greening projects reflect the needs of existing, and diverse residents. Additionally, the new problems residents reported following project implementation were analyzed in contrast with the universal benefits that were promised.

Residents of BeltLine neighborhoods were recruited for interviews using multiple strategies, including interview solicitations on neighborhood group Facebook pages and encounters with residents at neighborhood meetings and BeltLine events. From the 25 residents interviewed, 12 identified as residents of color, and 13 identified as white. Regarding length of time as a resident, 16 interviewees were long-term residents, and nine were new residents. Tables 3.1 and 3.2 provide an overview of the number of interviewees in each demographic category. For the purpose of this study, long-term residents were identified as those that have been living in BeltLine neighborhoods prior to the announcement of the project in 2005. While the first portions of the physical BeltLine path were not open to the public until 2008, announcement of the project in 2005 spurred wider interest in BeltLine neighborhoods and marked the start of BeltLine-related neighborhood change (Immergluck, 2007). Residents who have lived in BeltLine neighborhoods prior to the announcement of the project therefore have a more distinct sense of how their neighborhood has transformed since the project was announced. The nine new residents were identified as those who had moved to BeltLine neighborhoods after 2005 and have only lived in their communities since being identified as BeltLine neighborhoods. Finally, five interviewees were renters at the time of interviews, and 20 were homeowners. Interviews were semi-structured to allow for conversations to flow organically but centered on central topics to allow for comparison between interviews. The topics discussed include residents' favorite things about their neighborhoods, their priorities for neighborhood wellbeing, and observations of neighborhood changes introduced by the BeltLine. Interviews were conducted during the summer and fall of 2017.

Table 3.1: Sum of Interviewees by demographic category.

	Residents of color	White residents	Long-term residents	New residents	Homeowners	Renters
Number of interviewees per demographic category	**12**	**13**	**16**	**9**	**20**	**5**

Table 3.2: Interviewees by demographic category.

Interviewee	Race	Homeowner/ renter	Long-term/ new resident
1	African American	Homeowner	Long-term
2	African American	Homeowner	Long-term
3	White	Homeowner	Long-term
4	African-American	Homeowner	Long-term
5	Latinx	Homeowner	Long-term
6	African-American	Homeowner	Long-term
7	White	Homeowner	Long-term
8	African American	Homeowner	Long-term
9	White	Homeowner	Long-term
10	African-American	Homeowner	Long-term
11	African-American	Homeowner	Long-term
12	African-American	Homeowner	Long-term
13	White	Homeowner	Long-term
14	White	Homeowner	Long-term
15	White	Homeowner	Long-term
16	African-American	Renter	Long-term
17	White	Homeowner	New
18	White	Homeowner	New
19	Latinx	Renter	New
20	White	Renter	New
21	White	Homeowner	New
22	African-American	Homeowner	New
23	White	Renter	New
24	White	Renter	New
25	White	Homeowner	New

Overall trends in responses

Trends in priorities were observed across all interviewees, and by each demographic category, as shown in Table 3.3. It should be noted that each interviewee fit into three of the six demographic categories. Due to the intersectionality of interviewees, some priorities trend across multiple demographic groups. The numbers in the table indicate how many interviewees from each demographic category shared each particular priority.

This section explores the priorities of residents within BeltLine neighborhoods, which are used to analyze how resident priorities compare to what is actually implemented by the project. The data are explored based on demographic categories including race, status as long-term or new residents, and homeowner status. Interviews with residents in BeltLine neighborhoods revealed that several priorities are shared across demographic groups, and do not have considerably higher representation by certain demographic groups than others. Specifically, the most common priority for residents of BeltLine neighborhoods is the creation and preservation of affordable housing, as 19 of the 25 interviewees cited this need. This priority reflects the rapid gentrification and loss of affordable units in many Atlanta neighborhoods. Due to these changes, affordable housing is a frequent topic in the news and at public meetings. In turn, many residents need affordable housing to be preserved and created, otherwise, in the words of resident Paulette (Interviewee 6), "we're going to be a city like San Francisco, and the [current] inner city can't live there. You can't afford it." Paulette, and many other interviewees attribute these rapid neighborhood changes and loss of affordability to the Atlanta BeltLine. Further related to the pace of neighborhood change, nine residents want more meaningful community engagement in planning, to ensure that neighborhood changes benefit and support existing residents. Eight interviewees also wanted more robust housing policies to be implemented citywide, in order to

Table 3.3: Trends in priorities across all interviewees and by demographic groups.

Demographic group	Trends in priorities
All	Creation and preservation of affordable housing More meaningful community engagement in planning More robust housing policies citywide (to protect existing residents, and maintain socio-economic diversity) Better connectivity via public transit Walkability
Residents of color	Creation of job opportunities, job training programs for low-income and homeless residents Preservation of cultural heritage
White residents	Maintain diversity
Long-term residents	Address long-standing environmental justice issues: • Stormwater • Brownfields • Illegal dumping Developments and policies should prioritize the needs of existing residents, rather than the needs of developers, corporations, or anticipated residents
New residents	(No trends among the responses of this group)
Homeowners	Aging-in-place strategies *Developments and policies should prioritize the needs of existing residents, rather than the needs of developers, corporations, or anticipated residents *Diversity
Renters	*More robust housing policies citywide • Particularly concerning rent controls, and the creation and preservation of affordable units *More meaningful community engagement in planning • Many feel renters are not fairly included, or considered in planning and community engagement

*Indicates a priority shared between multiple demographics. It should be noted that each interviewee fits into three of the six demographic categories, and the intersectionality of interviewees should be considered relative to the observed trends.

protect existing residents and to maintain socio-economic diversity within their neighborhoods. The types of policies residents want include preservation of existing affordable units, mandates for developers to create low and mixed-income housing, protections for renters including rent controls, and protections for elderly residents, among others. These priorities indicate that residents want to resist negatively perceived neighborhood changes, many of which have been attributed to the BeltLine. They want to achieve this by protecting and creating affordable housing, ensuring their voices and priorities are meaningfully integrated into the plans and policies that influence neighborhood change, and to protect neighborhood housing opportunities across the income spectrum thereby preventing existing residents from being displaced due to the pressures of gentrification.

Common resident priorities across demographic groups also include improved accessibility, namely, better connectivity via public transit opportunities and walkability. Eight residents want better transit connectivity in their neighborhoods and across the city, as many BeltLine neighborhoods have historically been underserved by public transportation. Yet, the motivations for this priority differed between interviewees. Some want better public transit connectivity to improve their day to day access to jobs, services, and errands, while others want better public transit in order to reduce traffic, allow for less reliance on cars, and to improve air quality. Improvements in neighborhood walkability was a priority for six residents, in order to increase ease of access to grocery stores, retail, services, and to other neighborhoods.

Though many residents report a need for affordable housing and improved public transportation connectivity, these issues are not being addressed at a sufficient rate to meet residents' needs. For instance, since the BeltLine has been implemented, the City of Atlanta permitted the construction of over 25,000 new luxury units (Blau, 2018), while more than 5,300

affordable rental units have been lost (Housing Justice League, 2017). Further, while several new bus lines have been added over the last decade, public transit in Atlanta continues to underserve resident needs, as usership remains at 3% (US Census, 2010). The topics of affordable housing and transit connectivity have broadly entered the public discourse as problems in Atlanta, which may influence residents' reports of these needs. However, it is notable that interviewees with this priority want affordable housing to be preserved and created within their neighborhoods. This finding stands in stark contrast to many previous studies that declare NIMBYism as one of the primary barriers to the creation of affordable housing (Scally and Tighe 2015; Crowley 2003; Nguyen et al, 2013). Essentially, the literature has widely reported that residents of city neighborhoods largely composed of single-family housing often oppose creation of affordable housing in their neighborhoods, fearing a loss in property values. BeltLine neighborhoods largely consist of single-family housing, yet, the majority of residents interviewed support preservation and creation of affordable housing within their neighborhoods in order to maintain socioeconomic diversity.

Priorities for long-term residents

More than other demographic groups, long-term residents were most likely to prioritize environmental issues including stormwater, and environmental justice issues such as brownfields and illegal dumping (N = 6/16). Long-term residents have seen these issues go largely unaddressed within their neighborhoods for many years. One resident, Craig (Interviewee 15) stated, "there is a history of bad environmental things happening in Peoplestown," noting that neighborhood residents have long been plagued by issues of stormwater, basements flooding with sewage, and proximity to brownfields. These issues may not be as visible to incoming residents, particularly if their street it unaffected or if they don't socialize with other neighbors

who do experience these issues. It reasons that because long-term residents have greater temporal exposure to these environmental issues, they may also have increased awareness of how these issues negatively affect them and their communities, which likely explains the higher prioritization of environmental issues by long-term residents over their newer neighbors.

Long-term residents were also more likely than other demographics to prioritize neighborhood protections and considerations for long-term residents. For instance, they were much more likely to want development projects and policies to prioritize the needs of existing residents rather than the needs of developers, corporations, or anticipated residents (N = 5/16). Notably, each long-term resident with this priority is also a homeowner, and most are minority residents. Discussing this priority, long-term resident William (Interviewee 1) stated that if city-wide policies and local developments are "supporting the people that's currently here, I think that would be a win for everybody". William is not against change but wants to ensure it happens in a way that benefits existing residents. Sharing a similar sentiment, long-term resident Amelia (Interviewee 16) asked:

> "How do we keep what's there and make it something new without trying to bulldoze things? How do we celebrate the history while moving forward into the future? Does the history matter to neighborhoods, or do we say forget it, wipe it out, and move on, because what we're bringing is better."

William, Amelia, and many other long-term residents feel that changes in their neighborhood aren't happening for them, but instead for who is *coming*. As tenured residents, they have seen that development projects and policies favoring the needs of developers, corporations, and anticipated residents often benefit gentrifiers, but have negative impacts on the well-being and stability of long-term residents. While not opposed to changes, they want development projects and policies to account for neighborhood history and protect and uplift that history and the existing residents who contributed to it.

Long-term residents feel a strong connection to their neighbors, the history of their neighborhoods, and therefore view incoming developers, corporations, and residents as potential threats to neighborhood stability and well-being. This is an important concern given the rapid pace of neighborhood change in Atlanta. For instance, the Old Fourth Ward has been a predominately African American, single family, neighborhood for decades. However, since the BeltLine was implemented, it has undergone rapid change, including construction of a barrage of luxury apartments, entertainment and retail, and a rapid influx of young, predominately white, and wealthy residents. Large-scale displacement of long-term, African-American residents has followed, and many feel that the neighborhood now caters to developers, incoming businesses, and incoming residents much more than those that have contributed to the history and legacy of the neighborhood. Many fear this trend will continue in other BeltLine neighborhoods unless the city, developers, and corporations are held accountable.

While problems still exist, environmental issues such as stormwater and brownfield contamination, are being addressed in some areas of the city. The BeltLine has created a regional scale stormwater retention pond in the Historic Fourth Ward Park, which prevents flooding in parts of the neighborhood, and the BeltLine is also remediating brownfields along the proposed trail, a legal requirement. Illegal dumping is also less prevalent in some gentrifying neighborhoods as more houses become occupied and fewer lots are unmonitored. Long-term residents also wanted developments and policies to prioritize the needs of existing residents over corporations, developers and incoming residents. However, developments largely continue to prioritize growth at any cost, often at the expense of stability for long-term residents. Further, despite the creation of a rather unsuccessful inclusionary zoning ordinance, policies have not been created to protect existing residents from fast-paced changes occurring in the city (Schenke

2018; Stokes, 2019). While some issues are slowly being addressed in particular areas, it appears that overall, these changes are intertwined with new concerns for long-term residents.

Differing priorities for residents of color and white residents

In contrast with other demographic groups, residents of color were more likely to prioritize the creation of job opportunities and job training for low-income and homeless populations in their neighborhoods (N= 5/12). Notably, most residents with this priority were also long-term residents. Expanding on this priority, Sandra (Interviewee 2), an African American resident stated that Atlanta is supposed to be "the land of milk and honey" for African Americans seeking job opportunities, economic mobility, and home and business ownership. While Atlanta has a strong black middle class, income disparity in the city remains high, and more programming is needed to promote economic mobility for homeless and low-income populations. It reasons that African American residents may be more sensitive to the disparity between the promise of Atlanta versus the reality. Long-term residents of color, in particular, have a temporal awareness of how opportunities for economic mobility for socio-economically vulnerable residents of color has remained stagnant, and may be more likely to recognize that further programming – such as jobs training – is necessary to make Atlanta a prosperous city for all.

Residents of color were also more likely to prioritize the preservation of cultural heritage than other demographic groups (N= 8/12). Explaining the importance of preserving the heritage of the Old Fourth Ward, a BeltLine neighborhood and the birthplace of Dr. Martin Luther King Jr., William (Interviewee 1) a long-term African American resident said "It means so much to some people, and everybody can appreciate the value that Dr. King brought to the table, but I think it means a little more to African Americans because it's somebody they can see who grew

up here and actually changed the world." Sweet Auburn, the section of the Old Fourth Ward where Dr. Martin Luther King Jr. was born can be seen in Figures 3.1 and 3.2. William goes on to note that preservation of cultural heritage is empowering for local, African American residents. Paulette (Interviewee 6), a lifelong, African American resident of the Old Fourth Ward discussed the disempowering sense of cultural erasure experienced as the historical footprint of the neighborhood is altered to match the housing preferences of incoming, mostly white, gentrifiers, stating:

> "We've got a lot of people that went on and did bigger and better things in our neighborhood, and you just come down and you just tear down their houses, just forget they ever existed, the whole footprint is gone… when you have new people coming in, they have no idea what we went through to make this neighborhood the way it is."

The changing footprint of the Old Fourth Ward neighborhood can be observed in Figure 3.3. William, Paulette, and other minority residents who prioritize the preservation of cultural heritage want to preserve the character and history of their neighborhood, as it uplifts and empowers African American residents. While these residents do want certain improvements in their neighborhoods, they don't want these at the expense or erasure of cultural heritage, especially as gentrification threatens to rebrand their neighborhoods and as new residents who lack understanding and appreciation of their neighborhood's history move in.

To date, cultural preservation mechanisms utilized by Atlanta and the BeltLine largely do not address the concerns of residents of color. For instance, the historic preservation mechanisms undertaken by the BeltLine include preservation of significant trees and artifacts, but do not substantively preserve neighborhood character. Jobs training programs for low income and homeless populations do exist, and the BeltLine has created its own jobs creation program, but the BeltLine has not provided data on the number of graduates from the program, which is likely to be a few dozen. This is a far cry from the claims of the Atlanta BeltLine Development plan,

Figure 3.1: The Martin Luther King Jr. National Historic Site – the birthplace of Dr. Martin Luther King Jr.

Figure 3.2: Shotgun houses in the Sweet Auburn district of the Old Fourth Ward Neighborhood.

Figure 3.3: New and traditional homes in the Old Fourth Ward Neighborhood.

which stated the project would provide 48,000 construction and 30,000 permanent jobs, and would prioritize hiring of low-income, local residents for these positions by creating jobs training programs (Equitable Development Plan, 2012).

Notably, white residents interviewed were more likely to prioritize the maintenance of neighborhood "diversity" than residents of color (N= 6/13). These interviewees reported that they do not like living in demographically homogenous spaces, and they do enjoy living in areas that feel tolerant and allow for broader social networks and exposure. Expressing his desire to live in a diverse neighborhood, white resident Liam (Interviewee 13) stated, "how can I move to this community, which I am actually attracted to the diversity of the community, and not be the fuel for that becoming no longer diverse?" Liam stated he was motivated to move to his current BeltLine neighborhood because he valued the diversity of the community. Simultaneously, he is aware that many of his white neighbors were attracted to the neighborhood for similar reasons, and the arrival of each additional white resident reduces the diversity which attracted them to the neighborhood in the first place.

Importantly, academic literature has demonstrated that white, middle class city residents often do value diversity, but in a different way than residents of color (Berrey, 2005). Sig Langegger describes that in gentrifying neighborhoods, white residents' valuation of diversity is often "ignorant of past and present social injustices and the lasting benefits of white privilege", and further, that white residents' "excitement over and tolerance of difference, rather than the amelioration of injustice… dislocates discussions of rights from the mechanics of gentrification" (Langegger 2016). Essentially, while white residents in gentrifying neighborhoods value diversity as a benefit to their own experience, this valuation often ignores white privilege and the ways in which gentrification proliferates racial inequality. As white residents in gentrifying

neighborhoods value diversity as a commodity, non-white residents from these neighborhoods wish to avoid cultural erasure as incoming white residents seeking diversity move in. While there is nothing formal in place to require diversity, many of the white people living in these neighborhoods feel that they live in diverse areas as, at this point, BeltLine neighborhoods have a racial mix. However, as the project and related gentrification advance, the neighborhoods are likely to become increasingly white. For instance, since the BeltLine has been implemented, the Old Fourth Ward has transitioned from 80% African American to less than 50% African American (Statistical Atlas 2018), and it seems this trend is likely to continue.

Differing priorities based on homeowner status

Homeowners exclusively represented the responses for three themes, including the aforementioned priorities of development projects, and policies to be for existing residents (N=7/20), and the maintenance of diversity (N=8/20). Additionally, homeowners exclusively made up the category of interviewees who want aging-in-place strategies (N=6/20). Many homeowners with this priority purchased their residences with the intention of staying in their neighborhoods for life. Accordingly, they would like to see developments and policies that facilitate their ability to remain in the neighborhoods in which they are socially and financially invested. The BeltLine has financially contributed to the construction of Reynoldstown Senior Housing, a 69-unit affordable housing complex for those aged 62 and up (Atlanta BeltLine 2019). The BeltLine has also hosted homeowner education workshops to discuss available resources that residents may seek out and apply for to stay in their homes. While these efforts are important, residents have to know about and successfully apply for these options in order to stay in place. Further, these efforts do not match the rate at which seniors on a fixed budget are being displaced from their homes and neighborhoods due to gentrification. More efforts are needed to

ensure that aging-in-place is attainable for all residents who wish to remain in their neighborhoods.

While renters make up only twenty percent of the interview sample, there were several priorities shared across all, or the majority of, the group. For instance, all renters wanted affordable housing policies to be prioritized in their neighborhoods (N=5/5), as renters in gentrifying neighborhoods are particularly vulnerable to displacement via rent increases. Most renters also wanted more robust housing policies, specifically regarding rent controls, and the creation and preservation of affordable rental units. For instance, renter Camila (Interviewee 19) wants to see rent controls implemented because her apartment's proximity to the BeltLine increases her risk of displacement. She stated, "the biggest factor I think that's controlling my rent at this point is the BeltLine." In contrast with the increase in property values that homeowners in the neighborhood may benefit from, she added, "I'm not, as a renter, getting any return on this." Camila and many other renters understand that they are among the most vulnerable group to displacement from gentrification. Living in gentrifying BeltLine neighborhoods undergoing rapid market changes, the implementation of affordable housing policies, including rent controls, is a pressing need for many renters.

Finally, most renters want to be more meaningfully included in community engagement and planning (N= 4/5). Many renters feel that in contrast to homeowners, their needs aren't taken into consideration in neighborhood meetings, planning initiatives, or other community engagement outlets. They reported that many homeowners, planners, and developers assume renters are less invested in the future of their neighborhoods, and therefore should have less of a say in public input sessions. In fact, it has been amply demonstrated that property owners often do have more power than renters in neighborhood meetings and planning initiatives, as renters

are often perceived as transient and uncommitted to the neighborhood (Goetz and Sidney, 1994). However, this sweeping assumption is harmful, as this exclusionary attitude prevents renters' needs and priorities from being included in decisions that affect their well-being as residents.

Despite being a common priority, rent controls are prohibited in the state of Georgia. However, an inclusionary zoning ordinance was passed for the city of Atlanta in 2018, largely in response to gentrification resulting from the BeltLine. The ordinance requires developers building more than 10 units within half a mile on either side of the BeltLine to ensure a portion of their units are affordable (Schenke 2018; Stokes, 2019). Since it has been passed, development has slowed across the city, and many developers have turned to constructing for-sale properties, such as townhouses, rather than properties for rent, in order to bypass the constraints of the ordinance. The BeltLine also encourages that renters consider homeownership and has done little to make space for renters' needs. Overall, the concerns of renters remain largely unaddressed in a housing climate that continues to cater towards high-income renters and homeowners.

BeltLine creates new problems for residents

This section explores new problems residents report resulting from the BeltLine, focusing on several prominent themes from interviews. Many residents stated that they receive few to no benefits from the BeltLine, yet experience considerable new problems attributed to the project. These issues were reported as including gentrification and displacement (well documented in the literature), but also, overcrowding of the trail, increases in local traffic and commute times, replacement of affordable mom and pop stores with luxury retail, stagnant school performance, increased stress for long-term, low to mid income, and minority residents, increased

neighborhood tension, co-option of neighborhood meetings by incoming residents, and disenchantment of residents who once supported the project.

First, many residents reported that the BeltLine does more to serve gentrifiers and individuals who visit the trail as a *tourist* destination, who are drawn to the BeltLine for its connectivity to green spaces, new upscale restaurants, breweries, and retail, which can be seen in Figures 3.4 and 3.5. This is contrasted with how the BeltLine serves existing residents. In fact, several interviewees reported that the East Side Trail is often so overcrowded with BeltLine "tourists" from the surrounding suburbs, that they do not rely on it as a way to get places (see Figure 3.6). Many also lamented that these tourists drive to the trail and park in BeltLine neighborhoods, increasing local traffic and commute times, and exacerbating air quality concerns in areas around the BeltLine. These outcomes directly confound the BeltLine's goals to improve transportation options that reduce local reliance on cars.

As gentrification permeates neighborhoods surrounding the BeltLine, several residents also reported that many of the more affordable, locally-owned businesses are being replaced by chains and luxury retail that target affluent visitors and gentrifiers. Many interviewees mentioned that the majority of incoming retail is out of their price point. Adair Park resident Drew (Interviewee 7) notes that in addition to increased property taxes attributed to the project, this shift in retail "will increase what it costs to survive" in BeltLine neighborhoods. Further, Drew and many other interviewees with children lament that despite paying higher property taxes, local schools have not improved. This is due to the Tax Allocation District, or TAD – a funding mechanism for the BeltLine. Under the TAD, the BeltLine captures increases in property tax revenue around the BeltLine in order to fund the *project*, not broader city and social services (Immergluck and Balan, 2018). In exchange for capturing a portion of property tax increases that

Figure 3.4: New Realm Brewery as seen from the BeltLine trail. Source: eventup.com.

Figure 3.5: Ponce City Market, a building marketed as having “live, work, play” amenities. In addition to luxury apartments and office spaces, the marketplace includes upscale shopping, dining, and entertainment options. This is one of the major BeltLine destinations on the East Side Trail.

Figure 3.6: East Side BeltLine trail crowded with tourists. Source: gpbnews.org.

would otherwise go to public schools, Atlanta BeltLine Inc. (ABI) has agreed to make fixed payments to schools within the TAD. However, ABI has missed multiple multi-million-dollar payments, making the argument that payments would compromise project development (Bloom, 2015). Between a higher cost of living, stagnant school performance, and moderately better access to unaffordable retail, many families with children are motivated to leave BeltLine neighborhoods as the benefits of staying do not outweigh the material costs. Other long-term residents expressed concern that as local families leave, often to be replaced by transient gentrifiers, they are not only losing valuable neighbors, but important voices in neighborhood meetings.

Discussing the mental health impact of urban greening, several residents stated that the BeltLine is a major source of stress particularly for many long-term, low-income, residents and residents of color. Discussing this affect, Pittsburgh neighborhood resident Amelia (Interviewee 16) mentioned that as soon as the BeltLine was announced:

> "It's already a mental thing… you're automatically thinking about things that you weren't thinking about before, you know? What's going to happen to my neighborhood? Am I going to be able to keep my house? Am I going to be able to afford my rent?"

This stress stems from histories of developments in Atlanta, including, among others, the construction of I-20, the razing of Buttermilk Bottom, redevelopments for the 1996 Olympics, and the construction of Turner Field, that prioritized the desires of white, wealthy residents, leading to eminent domain, displacement, or gentrification in majority-African American neighborhoods. Paulette (Interviewee 6), an African American, life-long resident of Atlanta, has seen the harm that each of these projects have had on African American communities. Paulette was born in Buttermilk Bottom, an African-American neighborhood that was entirely razed in 1968 to build a convention center in what is now the Old Fourth Ward, her current neighborhood. While Amelia was immediately stressed about the potential negative effects of the BeltLine when it was proposed, Paulette was drawn to its promise to create a more equitable Atlanta. However, as the East Side Trail was implemented, her view changed. She stated:

> "I started seeing… my friends that have been here, seniors that have been here for *years* and *years*, they started to wonder, what is this going to do to us? Because they started tearing down a lot of the low-income homes and forcing them to move out, and they were feeling threatened by all the new construction around them going on. A few passed away, possibly due to stress… they felt intimidated."

Viewing the inequitable outcomes resulting from the BeltLine, Paulette stated, "I've been through segregated Atlanta and integrated Atlanta, and I can see it coming back in a different way." Given the histories of inequitable development outcomes in Atlanta, and the displacements and demographic changes that have already resulted from the BeltLine, the project is a major, and legitimate, source of stress for many low-mid income residents, long-term residents, and residents of color.

As original residents are displaced and gentrifiers move in, neighborhood tensions can also increase. Interviewees reported that new residents often have very different priorities for BeltLine neighborhood than long-term residents. Peoplestown resident Craig (Interviewee 21) stated that these tensions result in neighborhoods that are "very fractioned and divided." Many also feel that the voice of their neighborhood is co-opted in neighborhood meetings and public input sessions by new residents who don't value the history of the neighborhood, nor understand the work long-term residents have done to make the neighborhood what it is. This co-option is especially concerning in majority African American neighborhoods that were largely disinvested prior to the arrival of the BeltLine. Adair Park resident Jaime (Interviewee 5) states that long-term disinvestment dissuades some of his long-term neighbors of color from participating in neighborhood meetings, despite their concerns regarding gentrification, saying:

> "You're dealing with a black neighborhood that has never had any power. And so definitely when you go to a neighborhood meeting, it's all the new white homeowners that are going to the meetings… and so now that *everything* is changing, we're like, 'hey y'all, you need to come to these meetings', and they're like, 'what's the point, nothing has ever changed."

The tension between gentrifiers and existing residents makes it even more difficult for the voices of established residents to be heard in neighborhoods that have historically been given very little consideration in major planning decisions.

Finally, many residents reported disenchantment from the project. The initial promise of the BeltLine to improve connectivity, provide affordable housing, and create opportunities for long-underserved communities was an attractive proposal in line with many resident priorities. However, as many of these promises have fallen short, and as residents have experienced rapid demographic change, cultural erasure, co-opted meetings, and other consequences since the BeltLine was implemented, many no longer support the project. Discussing this letdown,

resident Paulette (Interviewee 6) stated, “they sold us a dream. It hasn’t come to fruition.” This sentiment was echoed by many other residents who wished the project had stuck to the initial plan – especially the social equity and affordable housing goals – issues that have not only been insufficiently addressed by the project but have exacerbated since its implementation.

Discussion and conclusion

Initial plans for the BeltLine appear to reflect many resident priorities across demographic groups. However, several years into project implementation, many resident needs remain unmet while several significant new problems have emerged. While the BeltLine is indeed addressing some of its initial promises, with contributions to stormwater, walkability, and minor contributions to affordable housing, the project is only partially fulfilling the goals that were promised. The BeltLine is also changing dynamics across the city which include rapid gentrification, displacement, and replacement of affordable, locally owned stores with luxury retail. Further, the retail, breweries, and restaurants that have cropped up around the trail the trail make it a destination in itself for out-of-towners, who support the expensive restaurants, breweries, and retail surrounding the East Side Trail, dissuading use by locals, and increasing local traffic and air quality concerns. These tradeoffs were not mentioned anywhere in initial project plans, indicating that planners were either unaware of some of these outcomes, or were wont to conceal them in order to garner enthusiasm and support in the project’s initial stages. Despite great overlap between initial project plans and residents’ needs, the project is falling short of many of its promises, leading to disenchantment of many existing residents. This concluding discussion assesses what outcomes have been achieved.

First, walkability, which was identified as both a resident priority and a promised outcome, has ostensibly been addressed via the construction of 10.5 miles of trail (BeltLine

2019b). While the BeltLine advertises enhanced walkability, providing access to retail, services, green space, and other neighborhoods, residents living near the East Side Trail report that the trail doesn't connect them to many destinations they can afford. This is because the majority of incoming retail, targeting an upper-middle class demographic, is outside of the price point for many existing residents. Neighbors on the West Side Trail report that the trail doesn't connect them to much at all – as many still drive to the East side to access retail and services. These concerns are compounded by overcrowding of the trail with tourists, which discourages many existing residents from using it. While the BeltLine's walkability goals may be successfully met on paper, this assessment is flawed in comparison with many resident's lived experiences.

Like walkability, stormwater mitigation is both a resident priority and a targeted BeltLine goal. While the BeltLine has met its stormwater targets, including mitigating the impact of the trail and constructing a regional-scale retention pond in the Historic Fourth Ward Park, residents report that stormwater has improved in some areas of the neighborhood while worsening in others. This is because the BeltLine has attracted so many new developers and wealthy residents to the Old Fourth Ward, rapid construction, infill, and removal of trees is leading to more localized stormwater impacts in other sections of the neighborhood. Although the BeltLine has met its stormwater targets, these improvements are more or less negated by the negative impacts of private developments attributed to the project. While the BeltLine attracts this private construction and advertises its contributions to economic investment in the corridor, mitigating the negative social and environmental impacts of private development is not within the scope of the project's control.

The creation and preservation of affordable housing was found to be the most common resident priority, and also featured prominently in BeltLine planning documents. However, the

BeltLine's commitment to affordability has waned despite rampant gentrification resulting from the project. The Atlanta BeltLine Equitable Development Plan lists plans to preserve existing affordable housing, construct 5,600 new affordable units within BeltLine neighborhoods, and to ensure mixed-income housing will be created (Equitable Development Plan, 2012), but many of these goals have not been realized. The project remains the main driver of gentrification in the city (Powers, 2017), motivating several resident priorities. For instance, residents prioritized more robust housing policies, including rent controls, mandates for developers to create mixed-income housing, and other protections against displacement. Residents also prioritized more meaningful engagement, to ensure that developments are designed to benefit long term residents rather than gentrifiers. These resident priorities are also linked to new problems reported by residents – such as experiencing 1) few benefits despite increased cost of living, 2) increased stress of gentrification and displacement due to proximity to the BeltLine, 3) stagnant school performance, 4) feelings of cultural erasure, and 5) experiences of co-opted neighborhood meetings by gentrifying residents. Due to these negative experiences of gentrification resulting from the BeltLine, it is clear why residents want to prioritize affordability, housing policies, better community engagement, ensure developments benefit existing residents, and that cultural heritage is preserved.

Applications of this study can be useful for project planners and resident groups. Highlighting the potential tradeoffs of urban greening projects for residents is important, particularly as certain tradeoffs are likely to result from these projects, but many cannot be addressed by project planners. For instance, planners can create the trail and greenspace, but they can't control the negative social and environmental outcomes of private developments attracted to the trail. Planners should also be more open and honest about potential tradeoffs in early

planning stages. While planners may be wary that this could diminish initial support for the project, it would allow time for local governments to put protections and policies in place to resist potential tradeoffs before implementation begins.

CHAPTER 4

TO GREEN OR NOT TO GREEN? ASSESSING THE OUTCOMES OF URBAN GREENING, THEIR CAUSES, AND POTENTIAL SOLUTIONS

Abstract

By advertising their potential to simultaneously address social, ecological, and economic conditions, urban greening projects are increasingly being implemented in cities worldwide. Yet, the literature on the outcomes of urban greening frequently demonstrates that, rather than producing universally beneficial outcomes, these projects produce complex sets of tradeoffs for different actors and processes. Facets of these tradeoffs can be understood from different theoretical lenses and practices. This paper explores the tradeoffs of the Atlanta BeltLine, a large urban greening project in Atlanta, Georgia, using the lenses of environmental management and urban political ecology. Three of the BeltLine's major socio-ecological outcomes are assessed using these frameworks, including brownfields remediation, stormwater management, and neighborhood connectivity. The two different frameworks place importance on different goals for outcomes, with environmental management giving precedence to achieving environmental improvements at the scale of the project, and urban political ecology prioritizing the remediation of environmental injustice and the equitable distribution of benefits at broader scales. Benefits and losses are assessed both within and between each perspective, illustrating a nuanced understanding of the complex patchwork of positive and negative outcomes these types of projects produce across the urban landscape. Transparently determining outcomes and acknowledging their tradeoffs at each stage of the design process is critical. This paper concludes by presenting policies that could be used to help direct tradeoffs in more intentional ways.

Introduction

The BeltLine, an ambitious green redevelopment project in Atlanta Georgia, has received a considerable amount of attention from urban planners, decision-makers, and environmental managers alike. Once completed, the BeltLine will connect 45 neighborhoods through a 22-mile

alternative transportation loop. As trail sections are completed, brownfields are remediated, stormwater runoff is addressed, green space is created, and economic growth and reinvestment are stimulated. At the same time, however, real estate costs in nearby neighborhoods can drastically increase, leading to the displacement of many long-term and low-income residents. In the context of these positive and negative outcomes, some praise the project's multifaceted social and ecological goals for the city as a whole, while others critique its shortcomings and negative impacts for particular people or neighborhoods. This tension highlights the *tradeoffs* inherent to urban greening projects, which promise a wide range of social, ecological, and economic benefits, but deliver outcomes that are far more complex and uneven. This leaves scholars and practitioners of urban greening to ask: What are we to make of these varied outcomes, when many important problems are addressed, yet significant new problems are created?

It has been established in the literature that tradeoffs are an inevitable outcome of conservation, greening, and ecological restoration projects because the social, environmental, and economic goals they simultaneously pursue are often contradictory, rather than complimentary (Zheng, Wang, and Wu, 2019). Frequently, assessments of these outcomes remain in disciplinary or professional silos, either underscoring the social and/or ecological benefits these projects provide, or critiquing the new issues they create and inequalities in who experiences project benefits. Nevertheless, it is critical to understand and evaluate *both* the positive and negative outcomes, as focusing on only one can stifle progress towards socio-ecological justice.

This paper attempts to assess the tradeoffs of urban greening in new ways to understand the complexities of these outcomes across multiple perspectives. Two rather disparate frameworks — environmental management and urban political ecology —are applied here to

understand the outcomes of the Atlanta BeltLine. Several different lenses can be applied to understand the outcomes of urban greening, each of which place value on the achievement of different types of results. The lens of environmental management gives credence to the ability of urban greening projects to address long-standing environmental issues, improving measures of ecological health and environmental processes. Alternatively, the lens of urban political ecology pays attention to the ways that different populations are impacted by project outcomes, noting that the effects and benefits of urban greening are not experienced equally among all in the community. This paper starts from the viewpoint that positive and negative outcomes of urban greening are simultaneously coproduced, and further, that considering various project outcomes from multiple lenses will help highlight tensions central to the implementation of urban greening projects by providing a more comprehensive assessment of what is gained and what is lost in the pursuit of various project goals. The analysis provided here starts by acknowledging that any disciplinary or professional perspective on its own is partial, highlighting some aspects of a problem or situation, while obfuscating others. Considering the BeltLine from more than one perspective provides a more nuanced understanding of how tradeoffs are produced and experienced.

In what follows, this paper will provide an overview of literature on environmental management, urban political ecology, and tradeoffs, describing how each of these frameworks contribute to our understanding of urban greening. Then, the methods used for this research are outlined, including archival review, and semi-structured interviews. Interviews were conducted with environmental managers and residents of BeltLine neighborhood, who shared their perceptions on the tradeoffs associated with three of the BeltLine's major socio-ecological outcomes, including brownfields remediation, stormwater mitigation, and neighborhood

connectivity. The paper concludes with a discussion of tools that can be used to help direct the tradeoffs of the BeltLine in more intentional, equitable ways.

Environmental managers on green urban development

The practice of environmental management places significance on the health and wellbeing of species, habitats, and environmental processes. Accordingly, practitioners often monitor and assess conditions related to environmental health including biodiversity (Niemelä, 1999; Ahern, 2013; Wu, 2014; Ignatieva, Stewart and Meurk, year), flows of matter (Niemelä, 1999), air and water quality (Jim and Chen, 2008; Mallin et al., 2000), and ecological networks and connectivity (Ahern, 2013). These conditions are likely to be quantitatively measured at the scale at which management takes place, providing clear assessments of whether these conditions are improving or worsening over time, or in response to changes in management or development. Historically, environmental managers largely viewed urban development as a practice that served the narrow interests of people to the detriment of the environment, as development rarely considered the broader needs of species and environmental processes (Van der Ryn and Cowan, 1996). However, new construction options and management practices have been developed that better consider their impact on the urban environment. As such, environmental managers increasingly note that the *type* of development matters in regard to environmental outcomes (Penino, McDonald, Jaffe 2016), drawing on established best practice in areas such as landscape architecture, stormwater management, green infrastructure and building design (Chen et al., 2000; Bartone et al., 1994). Best practices in these fields call attention to technologies, materials, and management methods that lead to better outcomes for species, habitats, measures of environmental health, and the function of environmental processes.

Environmental managers also provide a nuanced view of urban development and urban greening projects, recognizing that both can be a potential cause of or solution to environmental concerns (Grimm et al., 2008). For example, when considering stormwater management strategies in urban environments, grey infrastructure solutions (such as pipes, pumps, storm drains, tunnels, and ditches) can convey runoff away from the built environment. This type of infrastructure addresses an environmental problem by reducing flooding to meet human needs. However, as grey infrastructure does not filter out pollutants and can also transfer large amounts of water downstream, it can contribute to urban stream syndrome (USS) (Penino, McDonald, Jaffe, 2016; Walsh et al., 2005). USS is characterized by the ecological degradation of streams caused by water transported across urban lands, including the transportation of water via grey infrastructure. This results in habitat degradation, flashier hydrographs, loss of biodiversity, elevated concentrations of contaminants, and altered channel morphology (Walsh et al., 2005). Essentially, grey infrastructure addresses an environmental problem to meet human needs but contributes to additional environmental concerns in urban streams. Alternatively, environmental managers have noted how green stormwater infrastructure (such as rain gardens, detention ponds, and bioswales) can address stormwater runoff to meet human needs, while creating additional social and ecological benefits. Green stormwater infrastructure can provide riparian habitat and green space, filter pollutants and reduce pollution transport to streams, lower the cost of water and wastewater treatment, and can store water on-site, preventing stream degradation while improving groundwater recharge. Compared to grey infrastructure, green infrastructure is less likely to contribute to USS and also provides incentives for economic investment. Accordingly, environmental managers consider green infrastructure to be a better development choice than grey infrastructure due to the more comprehensive environmental benefits provided.

Ultimately, environmental management provides an important lens to implement and assess urban greening projects. This framework values a project's contributions to improving environmental processes, habitat health, and biodiversity at the scale of the project (Niemelä, 1999; Penino, McDonald, Jaffe, 2016). Accordingly, this framework pays less attention to social and environmental consequences of urban greening at a broader scale. Preference is given to development types that cause the least amount of harm, while providing the most environmental benefits. Notably, as environmental managers prioritize the well-being of species, habitats, environmental processes, and other measures of environmental health at the site of management, broader socio-ecological considerations are often obscured. Though all forms of development, including green stormwater infrastructure, can cause tradeoffs, the work of environmental managers mitigates environmental hazards and improves measures of ecosystem and public health and urban environment.

Urban political ecology on green urban development

Urban political ecology is a broad category of scholarship that is concerned with inequality, oppression, and discrimination produced through various social, political, and economic processes. When applied to questions of the nature, urban political ecology assesses how the environment is broadly connected to and produced by social, political, and economic factors. In particular, urban political ecology often begins with an understanding that urban natures are largely shaped by capitalism (Castree, 2003; Harvey, 1989). Accordingly, this framework contextualizes the relationships between power, equity, and justice in the urban environment, and raises questions about whether the distribution of urban environmental amenities and hazards is equitable. Urban political ecologists also note that governing bodies may strategically engage in urban green development in order to promote economic growth.

These projects are viewed as opportunities for cities to rebrand themselves as 'green', which can be an effective marketing strategy to attract new capital investments (Huber and Currie, 2007; While, Jonas and Gibbs, 2004; Scholte and de Groot, 2010). As urban natures are mediated through capitalism, urban political ecologists call attention to the negative social and ecological outcomes that can result from this type of growth, often assessing how green redevelopment projects benefit wealthier residents while disadvantaging vulnerable groups (Heynen, Kaika, Swyngedouw, 2006; While, Jonas and Gibbs, 2004).

Urban political ecologists also call attention to the paradoxes of green development projects. For instance, many urban greening projects are advertised to provide universal social benefits, but, when amenities such as parks or green stormwater infrastructure (GSI) are sited in low to middle-income neighborhoods, the desirability and cost to live in these neighborhoods increase. This often results in the displacement of vulnerable residents who stood to gain the most from project benefits, which can include improvements in public health, walkability, and the remediation of environmental injustices (Wolch, Byrne, and Newell, 2014; Checker, 2011). Of further concern, displaced populations are often pushed to neighborhoods with similar or worse environmental conditions. Accordingly, urban political ecologists critique the promotion of social, environmental, and ecological "win-win-win" outcomes used to gain support for urban greening projects. This is because urban political ecology prioritizes socially just outcomes over profit, yet urban greening projects often produce the most ecological and economic gains for wealthy residents (While, Jonas and Gibbs, 2004). Accordingly, it has been argued that "many sustainability gains are simply a regressive redistribution of amenities across places" (Waschmuth et al., 2016 p. 329), as social and ecological gains may accrue at local scales for those who can afford to live near the project, but social and ecological losses may simultaneously

occur at regional or global scales. The tradeoffs of who benefits, and where socio-ecological gains and losses accrue, are central to this lens.

The framework provided by urban political ecology values the amelioration of socio-ecological problems, and critiques outcomes that exacerbate inequalities such as displacement caused by ecological gentrification (Checker, 2011; Wolch, Byrne, and Newell, 2014). By focusing on social inequalities, this framework frequently obscures the potential for urban greening projects to address environmental problems Finally, urban political ecologists emphasize that social and ecological issues in cities are intertwined, yet they are often addressed as separate issues (Braun, 2005). These scholars argue that unless we begin to conceptualize and address socio-ecological issues together, we will continue to have project outcomes that are neither sustainable nor just (Waschmuth, Cohen, and Angelo, 2016; Rice et al., 2019). Accordingly, these scholars advocate for a broader approach to sustainable development that considers equity at every stage from research to formulation to implementation.

Green urban development and tradeoffs

Ideally, the perspectives of both environmental management and urban political ecology could be integrated to assess and plan urban greening projects in a more comprehensive way. The concept of tradeoffs (McShane et al., 2011) can be a useful bridge and may produce more intentional outcomes for what is gained and what is lost in any particular project or policy. While urban greening projects often promote win-win-win outcomes for social, environmental, and economic goals to gain support, tradeoffs thinking highlights that many of these goals are competitive, rather than complimentary (Zheng, Wang, and Wu, 2019). This means outcomes that simultaneously achieve *all* the advertised benefits will be difficult to achieve. Rather, careful analysis and planning should take place to more accurately determine what is gained and what is

lost with any action or project (McShane et al., 2011). Accordingly, tradeoffs are an expected outcome of urban greening, rather than an exception. Further, scholars argue that while we understand that projects produce tradeoffs, refusal to acknowledge them "benefits neither nature nor people" (McShane et al., 2011, p. 967). Though the prospect is challenging, these scholars argue that urban greening projects must create space to acknowledge and discuss tradeoffs in order to be successful.

Several different approaches to achieve this have been outlined in the literature. For instance, some scholars pushing for tradeoffs thinking advocate for a hybridization of traditional ecological training with social-focused design to better integrate competing priorities into more complimentary outcomes (McShane et al., 2011). Others advocate for use of a social-ecological systems (SES) framework to establish priorities that will provide mutual benefits for ecosystems and human communities. This approach "helps to explicitly consider trade-offs between ecological and social components of a system, allowing compromises to be identified" (Ban et al., 2013, p. 194). Regardless of the approach, many scholars using this framework advocate for tradeoffs to be considered at every stage of planning in order to create more intentional outcomes.

Considering multiple perspectives such as environmental management and urban political ecology in the design of urban greening projects helps establish which social and environmental outcomes need to be prioritized, and which can be negotiated or compromised (Felson and Pickett, 2005). By establishing which social and ecological conditions must be targeted, steps can be taken to implement these outcomes through innovative planning, management, collaborations, and policy solutions. Simultaneously acknowledging the inevitability of tradeoffs provides further clarity of what is not negotiable to be traded off (McShane et al., 2011). Having

difficult conversations about non-negotiables and negotiables allows for the creation of more integrative projects with more intentional, resilient, and sustainable outcomes (McShane et al., 2011; Hirsch et al., 2010). Acknowledgement and negotiation of what is being gained and what is being lost also reduces the probability that residents and stakeholders will experience disenchantment with project outcomes (Hirsch et al., 2010).

This paper draws on the frameworks of environmental management and urban political ecology, together, to develop a more comprehensive understanding of the tradeoffs inherent to urban greening projects, and in particular, the Atlanta BeltLine. In what follows, tradeoffs between social and ecological outcomes are examined both between the two perspectives, but tradeoffs also become apparent within a single lens due to different priorities and framings. As the tensions and tradeoffs within and between these frameworks are largely unacknowledged in the literature, this paper mobilizes these frameworks to provide a better understanding of the complex positive and negative outcomes for socio-ecological BeltLine targets including brownfields remediation, stormwater mitigation, and neighborhood connectivity.

Methods

Research for this paper is based on information gathered about the outcomes of the BeltLine project from semi-structured interviews with environmental managers with extensive familiarity with the BeltLine's goals and outcomes[4], in addition to interviews with residents of BeltLine neighborhoods. Interviews were semi-structured and included questions regarding the outcomes of the BeltLine's major socio-ecological targets. Each interview was recorded, transcribed, and coded for themes related to the outcomes of brownfields remediation,

[4] The responses of environmental managers are not evaluated for accuracy and should be interpreted as the perceptions of environmental managers. Evaluating the environmental outcomes of the BeltLine are beyond the scope of this project.

stormwater mitigation via the implementation of green stormwater infrastructure within the Historic Fourth Ward Park, and the provision of neighborhood connectivity. In order for interviewees to remain anonymous, pseudonyms are used with interview quotes. Notably, tradeoffs reported from interviews with environmental managers are based on the *perceptions* of these environmental experts, as this study did not include primary assessments or monitoring of BeltLine outcomes. Archival materials related to the design, implementation, guiding policies, and assessments of these three socio-ecological goals were also examined. These included original designs, environmental mandates and policies, progress reports, and projects assessments. From these materials, information was coded relative to both the promises and outcomes of brownfields remediation, stormwater management, and neighborhood connectivity. Together, the data provide an overview of the complex outcomes of the Atlanta BeltLine for different actors and environmental processes, allowing for an assessment of the kinds of tradeoffs generated by the BeltLine.

Table 4.1 provides an overview of the findings from this analysis, as it outlines the major gains and losses attributed to these perspectives for the outcomes of brownfields remediation, stormwater mitigation via green stormwater infrastructure, and increased neighborhood connectivity. While this table was created with the specific outcomes of the BeltLine in mind, these gains and losses are also likely relevant for the outcomes of these targets with other urban greening projects. Together, these highlight the complex tradeoffs both within and across the perspectives of environmental management and urban political ecology.

Brownfields remediation

One of the BeltLine's major socio-ecological goals is brownfields remediation, which includes the clean-up of chemically contaminated parcels of land throughout the BeltLine

	Gains: Environmental Managers	Gains: Critical Social Theorists	Losses: Environmental Managers	Losses: Critical Social Theorists
Brownfields remediation	Removes contaminated soil (improves health of soil, vegetation, species, groundwater, etc.) Land can be repurposed for other uses (green space, development, etc.) Can reduce sprawl by allowing infill	Addresses an environmental justice issue Improves local public health and well-being	Brownfield redevelopment may add impervious surface and remove trees and vegetation (potential losses for soil stability, increase in stormwater runoff, etc.)	Central motivation is redevelopment rather than improved environmental and public health Redevelopment creates a new environmental justice issue, gentrification and displacement Public health gains not experienced by displacees
Stormwater mitigation (via green stormwater infrastructure)	Recreates a riparian ecosystem, providing habitat for species Prevents stream degradation Improves groundwater recharge Lowers cost of water and wastewater treatment Attracts private development, cheaper and more affordable than grey infrastructure	Can address multiple environmental justice issues: park poverty, stormwater runoff, CSOs Improves local public health and wellbeing Can address long-term disinvestment	Often spurs nearby development which may add impervious surface and remove trees and vegetation (potential losses for soil stability, and increases in stormwater runoff – compromising some environmental gains from GSI)	GSI is often implemented to attract capital investments, which have their own social and environmental consequences Can rebrand an area as "luxury and green", leading to a new environmental justice issue, gentrification and displacement
Increased neighborhood connectivity	Alternative transportation networks can reduce local reliance on cars, leading to improvements in air quality Trail-adjacent arboretum may encourage habitat connectivity between existing and new greenspaces	Can provide more walkability and access in neighborhoods underserved by public infrastructure and transit Can increase equity and safe access to jobs, school, services, retail, etc.	Out-of-towners may drive to access the trail and surrounding amenities, increasing local traffic and leading to worse local air quality	Most benefits may accrue to wealthy individuals that can afford to live near and shop at high-end destinations around the trail Does not improve access for locals if trail connects to high-end destinations outside of their price range

Table 4.1: Gains and losses from different perspectives.

corridor. Much of the former railroad corridor was historically zoned for industrial use, and, arsenic was frequently applied around the railroad to prevent vegetation from growing along the tracks (BeltLine 2012). Due to the contamination stemming from these historic activities, many parcels along the corridor were designated as brownfields prior to the BeltLine's implementation. Legally, these parcels cannot be repurposed until the soil is tested and remediated. So far, the BeltLine has remediated at least 369 acres of brownfields along the corridor with the goal to remediate at least 1100 acres by 2030 (BeltLine 2018). In addition to considerable remediation undertaken by the BeltLine, many contaminated parcels around the corridor have also been addressed to allow for private redevelopment, as many developers are eager to redevelop BeltLine-adjacent properties. Together, large swaths of brownfields are being addressed throughout the BeltLine corridor, creating a complex suite of ecological and social benefits and tradeoffs. Figures 4.1 and 4.2 depicts areas of the BeltLine corridor in the Old Fourth Ward and Virginia Highlands neighborhoods, before and after brownfield remediation.

The perspective of **environmental management** highlights environmental, social, and economic gains and losses resulting from the BeltLine's contribution to brownfields remediation. For instance, brownfields are known as a threat to ecosystem health and environmental processes, and environmental managers note that remediation is a key step in improving environmental outcomes for soil, groundwater, vegetation, and species. Contaminants from brownfields permeate through the soil and pollute groundwater (Murray and Rogers, 1999), while on-site vegetation accumulates contaminants, passing heavy metals and other toxic substances through the food chain (Hofer, Gallagher, and Holzapfel, 2010). This framework also highlights that remediation allows previously contaminated land to be repurposed for other uses, such as green space and development. Ensuing development can provide further environmental

Figure 4.1: Brownfield remediation in the Old Fourth Ward. Source: beltline.org.

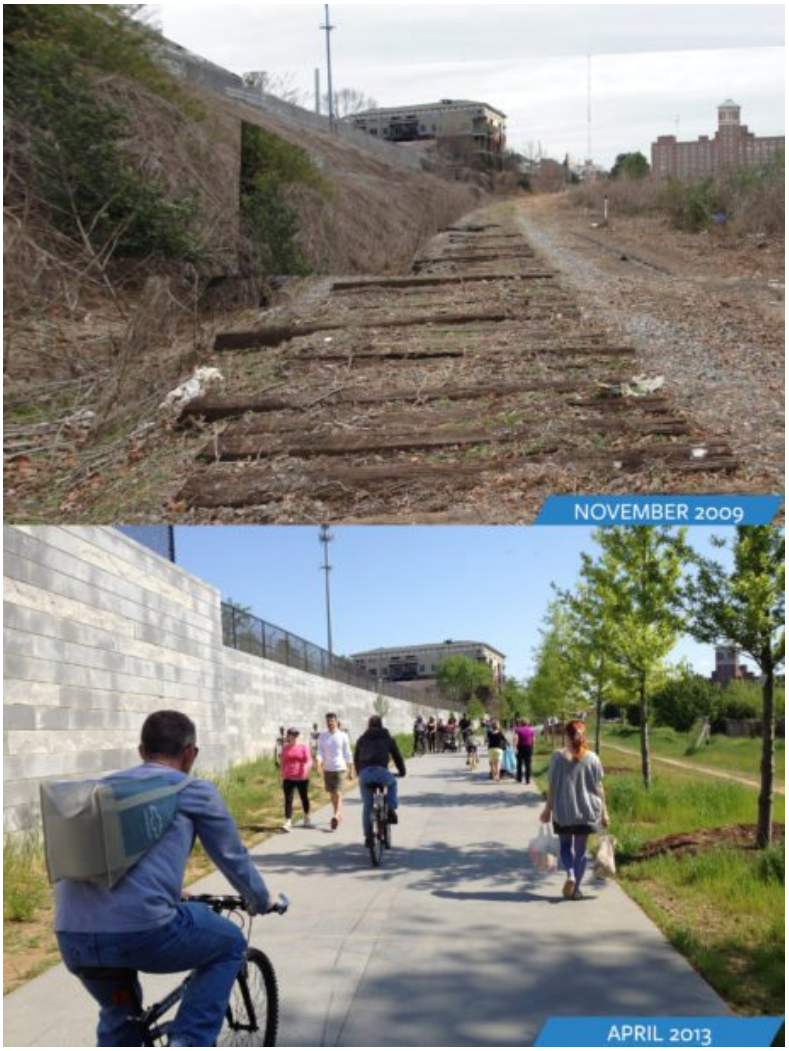

Figure 4.2: Before and after brownfield remediation in the Virginia Highland neighborhood, depicting a portion of the trail. Source: beltline.org.

benefits by allowing for infill in already developed areas, reducing sprawl and habitat destruction elsewhere (McCarthy, 2002).

Environmental managers revealed that these improvements in the BeltLine corridor were made possible due to the area's potential for redevelopment. Chris, an environmental manager working for the BeltLine stated that the project was "an incentive for redeveloping contaminated industrial land to revitalize neighborhoods," signifying that the economic incentive of revitalization was necessary to provide environmental improvement. Another environmental

manager with the project, Ben, supported this incentivization, noting that "within months of when this was all happening, you had developers coming in trying to buy property… which is a good thing, we're going to get some business." Sheila, an environmental manager with the City, applauded the fact that the BeltLine's contribution to brownfields remediation allowed many parcels of contaminated, abandoned land to be transformed into a "vibrant area." Ultimately, the environmental managers interviewed indicated that the economic incentive of redevelopment is often viewed as a necessary precursor to the provision of environmental improvements. This means that environmental managers are able to promote environmental *and* economic benefits in the pursuit of brownfields remediation, as contamination is addressed while land is repurposed for green space, public infrastructure, housing, retail, and other forms of development. Beyond reports of the number of acres of brownfields mitigated, the BeltLine does not provide more in-depth monitoring of associated environmental outcomes, as is the case with many other urban greening projects.

While not advertised by the project itself, environmental managers may encounter environmental tradeoffs resulting from these developments as well. Most importantly, environmental managers noted the significant amount of private redevelopment occurring within the corridor post remediation has resulted in the addition of impervious surfaces and the removal of trees and vegetation as new buildings and parking lots are constructed. These developments can have negative impacts for soil stability and stormwater runoff, complicating some measures of environmental progress.

The perspective of **urban political ecology** highlights additional gains and losses associated with the BeltLine's brownfields remediation, centered on the equity of social outcomes. It has been observed that nonwhite people in Atlanta are more likely to live within

500 feet of brownfields (Ross et al., 2012), making brownfield contamination an environmental justice issue. This inequitably distributed hazard is a public health risk, as contaminants can be absorbed through the skin or inhaled. Long term exposure can lead to increased risk for cancer, diabetes, stroke, pulmonary, and coronary illnesses (Leviton, Snell & McGinnis, 2000). Therefore, the remediation of contaminated brownfields is a necessary step to improve public health and to address environmental injustice.

It is important to note that urban political ecology gives precedence to addressing health hazards and injustices regardless of profit. While reinvestment in the corridor is considered a social and economic benefit of remediation from the perspective of environmental managers (Turvani & Tonin, 2008), a critical perspective renders these motivations as problematic. This is because the contaminated soil posed significant socio-ecological risks for decades, yet, the brownfields were *not* remediated for the sake of addressing environmental justice and improving environmental and public health. Rather, they were only addressed when an opportunity arose for investment and economic growth, as is the case with many brownfield redevelopments (Dale and Newman, 2009). This is particularly concerning from a critical perspective because brownfields remediation and the redevelopment that follow frequently contribute to environmental gentrification (Bryson, 2012). This form of gentrification becomes an environmental justice issue in its own right as low- and mid-income residents face the greatest risk of displacement, often to less expensive neighborhoods with similar or worse environmental conditions (Wolch, Byrne, and Newell, 2014). This means that the benefits associated with remediation are unlikely to accrue to the most vulnerable populations who have lived near these hazards, but instead to wealthier individuals who can afford to stay in or move to these neighborhoods after remediation and redevelopment. This process has been dubbed as

greenwashing, or the "greening of capitalism, which appears to neutrally pose win-win-win outcomes for the environment, the economy, and society," but "deepen[s] socio-environmental inequities" in practice (Bakker 2010 p. 715).

Stormwater mitigation

Another major BeltLine goal is the mitigation of stormwater runoff, which includes addressing runoff caused by the trail and the implementation of a stormwater detention basin in the Historic Fourth Ward Park. The BeltLine, like all development projects in the city, must meet the City of Atlanta Stormwater Management requirements, which stipulate that "stormwater runoff generated by the first 1.0" of rainfall shall be retained on site" (Ord. No. 2004-56, §§ 2—4, 9-15-04). As the BeltLine trail itself is impervious, best practices in environmental management are used to retain the first inch of rainfall on site to help mimic pre-development conditions, encourage groundwater recharge, and prevent degradation of water quality. The BeltLine also has stormwater management goals of its own. Specifically, the BeltLine intends to exceed legal stormwater requirements by 10% (Beltline, 2019).

On the first constructed segment of the trail, a regional-scale detention basin was implemented within a BeltLine-created greenspace in in the Old Fourth Ward neighborhood. For decades, the Old Fourth Ward experienced severe stormwater runoff that frequently inundated two major thoroughfares: — Ponce and North Avenues — and also caused the basement of the former City Hall East building to flood (Saporta, 2013). Initially, the city proposed a grey-infrastructure solution to address stormwater in the neighborhood, but local activists championed the idea for a green space and detention basin instead. This idea was then adopted and implemented by the BeltLine. Once completed, the park added 17 acres of greenspace to the neighborhood, saved the city $15 million more than the proposed grey infrastructure plan, and

significantly reduced flooding on North and Ponce Avenues and in the basement of City Hall East (Saporta, 2013). The park is shown in Figure 4.3.

From the perspective of **environmental managers** working for the project, the BeltLine's stormwater mitigation strategies are associated with many gains, and few losses. The green stormwater infrastructure (GSI) and retention pond in the Historic Fourth Ward Park provide considerably more environmental, social, and economic benefits than traditional grey stormwater infrastructure. For instance, in addition to meeting human needs of reducing stormwater runoff, environmental managers revealed that the GSI provided a riparian ecosystem within an urbanized area, providing habitat, shelter, food, and connectivity for many species. Andrew, an environmental manager working for the City, noted that the project transformed an impervious brownfield into a thriving ecosystem, stating, "you see blue herons down there, you see ducks nesting, you see a lot of wildlife… they've taken it as their home." Another environmental manager for the city, Chelsea, noted that the project also "protect[s] the water quality in the streams from being polluted from and eroded from stormwater runoff." In addition to these important ecological outcomes, Andrew also mentioned that the GSI created a great return on investment. The project increased neighborhood aesthetics and walkability and spurred $500 million in private development in the area immediately surrounding the park. These environmental management perspectives highlight the social, economic, and environmental gains attributed to the implementation of a green stormwater infrastructure solution. Similar to Brownfields, the BeltLine has not provided assessments which monitor the environmental outcomes of these goals.

Figure 4.3: Green Stormwater Infrastructure retention pond in the Historic Fourth Ward Park.

Environmental managers also identified some losses attributed the BeltLine's implementation of green stormwater infrastructure. Primarily, the footprint of the neighborhood has undergone significant changes post GSI implementation as many wealthier residents move in and redevelop their lots. Environmental manager Chelsea noted that "people are tearing down small houses and replacing them with giant houses and cutting down all the trees on their parcel," adding that the larger houses frequently add "three times as much impervious surface" compared to the traditional houses. Figure 4.4 depicts a new-build home that replaced a traditional home, adding more impervious surface.

Discussing these changes, she said that the overall impact of the GSI will only be beneficial "if people don't cut all their trees down while they're doing the redevelopment" and preserve the amount of pervious surface on the lot. This is because the addition of impervious

Figure 4.4: A new-build home in the Old Fourth Ward neighborhood with a large footprint.

surface coupled with the removal of trees can lead to new stormwater problems, compromising environmental gains from the GSI at a broader scale (Stovin, Jorgensen, & Clayden, 2008).

From the perspective of **urban political ecologists**, the green stormwater infrastructure implemented by the BeltLine can also be associated with positive outcomes including the remediation of environmental justice issues. In addition to health risks associated with the carriage of pollutants in stormwater runoff, stormwater can also contribute to combined sewer overflows (CSO's), which contain untreated sewage and pose significant public health risks (Pennino, McDonald, & Jaffe, 2016). These hazards are more likely to occur in communities of color and low-income neighborhoods and are a prominent environmental justice issue (Mandarano & Meenar, 2017). Prior to the implementation of the park, the Old Fourth Ward neighborhood was a majority African American neighborhood that had been largely disinvested. This community contained brownfields, experienced significant stormwater runoff, and lacked

public green space – each an environmental injustice. Implementation of the GSI and the park ostensibly addressed each of these environmental injustices simultaneously. By remediating the brownfields, addressing stormwater, and adding green space, considerable public health benefits were gained for nearby residents, addressing priorities central to urban political ecologists.

Despite the GSI's ability to remediate multiple environmental justice issues, the perspective of urban political ecology highlights tradeoffs resulting from the stormwater solution. Addressing these issues via the implementation of the GSI made the neighborhood attractive to developers and wealthy individuals (Rigolon & Németh, 2018). As new condos, townhouses, and shopping centers were built around the park, the neighborhood was rebranded as a luxury, green destination. As housing prices rose, many long-term, African American residents were displaced. A lifelong African American resident of the Old Fourth Ward stated that, "I thought [the BeltLine] was going to be a good thing for [us], until I started seeing them having to sell their homes because of course, their property taxes went up. So they just couldn't survive it." Since the BeltLine was implemented in the Old Fourth Ward, the neighborhood went from being a majority low-income black neighborhood to a majority white middle and upper-class neighborhood – indicating a significant shift in who the neighborhood was serving. While green infrastructure clearly has more social, economic, and ecological benefits than traditional grey infrastructure projects, the perspectives of environmental managers and urban political ecologists reveal that they also produce a more complex suite of tradeoffs.

Neighborhood connectivity

Finally, one of the BeltLine's ultimate goals is to provide increased neighborhood connectivity throughout the corridor. The BeltLine's main 22-mile loop will directly connect 45 central neighborhoods, and 11 miles of spur trails are planned to connect additional

neighborhoods to the central loop. The BeltLine also connects to the existing Freedom Park and Stone Mountain Trails, and will eventually connect to PATH400, providing connectivity as far North as Buckhead (Buckhead CID, 2019). To date, 11 miles of trail have been opened for public use. According to BeltLine documents, this connectivity is intended to provide residents access to employment centers, regional transit networks, green space, and retail (BeltLine, 2005). The trail itself is also meant to provide recreation opportunities (such as walking, jogging, cycling), and spur economic development and infill around the trail. This connectivity is ultimately intended to provide "economically and socially vibrant hubs of mixed-use activity" (BeltLine, 2005) throughout the corridor.

The perspective of **environmental management** illustrates considerable benefits linked with the BeltLine's provision of connectivity. The trail provides a mode of convenient and safe alternative transportation for walking and cycling, connects residents to transit hubs, and reduces local reliance on cars. This can lead to improvements in local air quality and better public health outcomes (Ross et al., 2012). The development encouraged throughout the corridor allows for infill and new residential opportunities, protecting habitat elsewhere by reducing sprawl. The completed design will also connect residents to 40 parks (BeltLine, 2005), and the trail provides a continuous loop of green space which according to the BeltLine redevelopment plan, that effectively "fills the gaps between Atlanta's individual greenspaces" (BeltLine, 2005, p. 36). This connectivity can also encourage habitat connectivity between existing and new green spaces in the city, providing important linkages for species (Kong et al., 2010). An ecologist interviewed discussed the ecological significance of the connectivity provided by the BeltLine, noting "this little corridor… a hawk really likes that, to have that corridor instead of a sea of concrete," indicating the benefits provided to species within the area.

While environmental benefits may result from connectivity, new environmental concerns are also being observed. As numerous new retail and entertainment destinations have cropped up around the trail, the BeltLine has become a destination in itself for out of towners. Individuals from the surrounding area frequently drive to access the BeltLine in order to recreate, shop, dine, and access amenities along the trail. Residents interviewed report that these visitors have actually *increased* local traffic. This means that while the BeltLine was intended to reduce *local* reliance on cars, which it may well do, the project has become a *regional* attraction, increasing long-distance car trips to the area by non-locals. The air quality benefits resulting from a reduction in car trips by locals may be compromised or negated by an increase in long-distance trips.

The perspective of **urban political ecology** highlights social benefits attributed to the connectivity provided by the trail. Mainly, the trail connects transit-underserved communities to job opportunities, retail, services, and the larger regional public transit network (Gravel, 1999). As these neighborhoods have been underserved by public transit for decades, implementation of the trail helps to address long-standing transportation inequality in low-income and neighborhoods of color, mitigating a long-standing injustice.

This framework also highlights several losses attributed to the BeltLine's improvements to local connectivity. While the BeltLine's connectivity is advertised as providing many benefits to locals, urban political ecology elucidates that visitors and incoming residents may be the main beneficiaries. This is because these demographics can afford to be patrons of the luxury shopping and dining destinations along the trail. Before the infrastructure of the BeltLine was constructed, the majority of the neighborhoods around the BeltLine were considered affordable and were largely occupied by low- and middle-income residents. While there were fewer retail and dining locations in these neighborhoods prior to the BeltLine's arrival, the majority of them were

affordable. As trail sections are implemented, neighborhoods become increasingly expensive, commercial gentrification occurs, and connectivity provided by the trail delivers access to destinations with high price points (Solomon, 2017). Kelly, a long-term resident of the Old Fourth Ward mentioned that the incoming stores along the trail "are expensive, I don't shop there… I'll [drive] to Target to buy things." Several other long-term residents interviewed also mentioned that the trail does not connect them to much they afford. So while connectivity has improved, the trail does not improve access to retail and services for locals if it only connects them to luxury destinations outside of their price range.

Tools for better directing and negotiating tradeoffs

Considering the outcomes of the Beltline using both the perspectives of environmental management and urban political ecology help us see that, while the benefits advertised by the project do occur, they are complicated by a complex suite of tradeoffs. It is important to note that tradeoffs are the norm, rather than win-win-win outcomes, and this research indicates the BeltLine is no exception. As such, the champions of the BeltLine are either ignoring, or failing to mention, the trades offs – both social and environmental – that accompany various improvements. While environmental, economic, and social benefits do occur, the gains often accrue for those who can afford to live in the corridor, which are usually not the existing residents who were exposed to various environmental hazards and injustices before the construction of the BeltLine. Continuing to advertise project outcomes as positive for all, when substantial tradeoffs do occur for lower income residents and the environment, is not a sustainable strategy for urban green redevelopment. Continuing to promote win-win-win arguments does not reflect the hard choices involved in urban greening regarding who benefits and in what ways. Accordingly, it is recommended that professionals working on the BeltLine

and elected officials in Atlanta be more open and honest about the tradeoffs that result from the project. Though tradeoffs are inevitable, it is possible to direct tradeoffs in more intentional ways. This can be done by having more transparent and robust conversations with diverse stakeholders, assessing divergent priorities and perspectives on gains and losses to understand what outcomes can and cannot be negotiated. Once "non-negotiables" are established, specific policies can be implemented in order to achieve and protect those conditions. There are feasible and aspirational policies that could be used to direct the outcomes of the BeltLine. Specific policies can be enacted to mitigate these tradeoffs, and direct project outcomes in more intentional ways.

For example, policy interventions can be implemented to address the reduction of trees and increase of impervious surfaces attributed to the private development the BeltLine has spurred in the corridor, which compromise the project's environmental benefits. These can include the implementation of an Environmental Critical Areas Code (ECA) in targeted areas throughout the corridor. Recognizing that trees play an important role in protecting water quality, preventing erosion, providing shade, and mitigating the urban heat island, among other benefits, ECA's make it more difficult to remove trees for redevelopment. This measure prioritizes environmental benefits over economic growth and would require developers to find creative solutions to work around existing trees, rather than remove them. Currently, any hardwood tree in Atlanta with a diameter of six inches or larger requires a permit to be cut down. While this measure is important, it could be bolstered by a more comprehensive Tree ordinance protection. Except for special circumstances, any tree over 6 inches in diameter, or otherwise considered exceptional, is required to be retained during development in single family, low-rise, mid-rise, and commercial zones. The city could also offer financial incentives to install green roofs on

buildings being constructed or redeveloped within the corridor to help mitigate the stormwater impacts of development. These measures would prioritize environmental and public health over the ease of development and require developers and homeowners to use more innovative strategies to work around existing trees.

To help combat the number of car trips non-locals make to the BeltLine, which compromises local air quality and public health, the city could implement a Residential Parking Permit (RPP) system in neighborhoods around the corridor. This would mean that visitors without a permit would be unable to park in many areas in BeltLine neighborhoods. This would reduce the increased congestion experienced by local residents and encourage visitors to use alternative modes of transportation to access the corridor, such as biking and public transit. This measure would improve environmental and public health by improving local air quality, as well as improving quality of life for local residents by reducing increased traffic and congestion attributed to the BeltLine.

So far, the City of Atlanta has been encouraging of economic growth and investment in BeltLine neighborhoods and has avoided policies that would make it more difficult to redevelop these areas. Implementing more robust development stormwater ordinances would require developers to spend more money on stormwater mitigation strategies, helping to mitigate stormwater runoff exacerbated by these developments. The current stormwater ordinance could be updated to require commercial developers to use permeable paving – such as porous concrete and aggregate pavers, in order to reduce stormwater runoff attributed to development. This policy would require more environmentally responsible redevelopment practices, producing benefits for public and environmental health.

For decades, Atlanta's public transportation system, MARTA, has underserved the city's residents. While many in-town residents wish for increased lines and service times, residents closer to the perimeter have consistently voted against MARTA expansion (Green, 2019). This results in an underfunded and underdeveloped public transit system for a city of Atlanta's size, requiring many residents to depend on a personal vehicle to get around. If MARTA received more funding, residents voted to expand lines, and steps were taken to advertise encourage use of public transportation to access the BeltLine and BeltLine neighborhoods (especially for individuals living outside of the corridor), fewer middle and long-distance car trips to the BeltLine would be made – allowing for further improvements in air quality in the region.

While many BeltLine neighborhoods have been considered affordable for many decades, they have rapidly gentrified and become unaffordable to many long-term and potential residents. One of the most effective strategies to protect affordable housing is rent control. Rent controls ensure a city maintains a particular amount of affordable rental options for low- and middle-income individuals. A policy enforcing rent control would make great strides in retaining the stock of affordable rental properties in Atlanta neighborhoods, combatting the displacement attributed to green gentrification. This measure would prioritize the stability of low-income and vulnerable residents, rather than the potential to inundate BeltLine neighborhoods with luxury properties. Immense benefits for social equity aside, this measure is unlikely as rent controls are not currently allowed in the state of Georgia and are unlikely to be as long as it remains a red state.

There are several more feasible policy strategies that can be used to combat displacement resulting from the BeltLine. Since the BeltLine was implemented, the city passed an inclusionary zoning ordinance, however the ordinance only applies to rental properties, and many developers

circumvent the ordinance by developing for-sale properties. Further, the ordinance only stands for 20-years and does not provide long-term protections (Schenke, 2018). If the inclusionary zoning policy was expanded to include for-sale properties, and extended for additional decades, it would have a much greater impact on protecting affordability in BeltLine neighborhoods. Deed restrictions could be put in place, meaning that affordable homes can only be sold to buyers who meet income requirements. This would retain affordability for single family, for-sale properties.

Finally, community land trusts could be implemented in historic communities throughout the BeltLine corridor. Currently, one community land trust exists in the Sweet Auburn District of the Old Fourth Ward neighborhood, preserving affordability on several blocks surrounding the birthplace of Dr. Martin Luther King Jr. over a 99-year lease. Given that other historic neighborhoods exist throughout the corridor, community land trusts could be implemented to similarly preserve housing affordability in these neighborhoods as well. While these policies are not amenable to economic-growth at whatever cost, they prioritize the needs of low-income and vulnerable residents to remain or move into BeltLine neighborhoods, ensuring that the benefits of the project accrue to more than wealthy residents. Examples of where each of these policy recommendations was implemented, and what resulted, can be seen in Table 4.2.

Together, these policy measures could be implemented to help project outcomes match more closely to project promises concerning social and environmental outcomes. Using the disparate frameworks of environmental management and urban political ecology helps illustrate the complex gains and losses that result from urban greening. While tradeoffs are inevitable, a better understanding of gains and losses, coupled with actionable solutions to direct tradeoffs, can result in the production of more intentional project outcomes.

Table 4.2: Examples of successful policy implementations.

Policy	Example where used	Result
Incentives for green roofs	Toronto, Canada	Reduces stormwater flow, CSO occurrences. Improves air quality Reduces energy use, mitigates urban heat island. (Eco-Roof Incentive Program, 2019)
Environmental Critical Areas (ECA) codes	Seattle, Washington	Prevents trees and vegetation from being removed, reducing light and noise pollution retaining habitat, protecting species from disturbances. Protects water quality, reduces stormwater. Prevents buildings from being constructed in areas at risk for flooding/erosion (and from incurring related costs) (Torgelson, 2019)
Permeable pavement	Alcoa City Center, Alcoa, Tennessee	Stores stormwater onsite, improving infiltration and reducing flooding Removes stormwater pollutants Allows developers to incorporate stormwater management with infrastructure design (EPA, 2017)
Inclusionary Zoning	Montgomery County, Maryland	Required developers of for-sale and rental properties to set aside 15% of units as affordable to preserve affordability (Brown, 2001)
Community Land Trusts	Northern Communities Land Trust, Duluth, Minnesota	232 low-and-moderate income families were able to purchase homes Promotes wealth creation without undue risk of losing homes (The Urban Institute, 2010)
Rent controls	New York, New York	Rent controls provide the greatest source of affordable housing for low-and-middle income households As landlords cannot drastically raise rental prices, displacement is prevented

CHAPTER 5

CONCLUSION

The BeltLine, the ambitious urban greening project located in Atlanta, Georgia, was posed as an attractive solution to address many of the city's complex problems simultaneously. Through strategic design, collaboration, and resident input, early drafts of the project included multifaceted goals to address many social and environmental issues. These included targets to remediate brownfields, mitigate stormwater runoff, and also increase connectivity and walkability in the city. Targets also included the creation of new green spaces, jobs training programs, and affordable housing.

Fourteen years into the project, several of the initial goals have materialized. Many brownfields have been redeveloped, some stormwater hot spots have been addressed, connectivity and walkability between BeltLine neighborhoods has improved, and several new green spaces have been created. These improvements have stimulated billions in private reinvestment throughout the corridor. At the same time, the achievement of other targets lags behind, such as jobs creation and affordable housing, efforts that were intended to create socially equitable outcomes. New problems have also been observed in response to these changes, including accelerated gentrification and displacement in BeltLine neighborhoods, feelings of cultural erasure, increases in local traffic due to the project popularity, and losses of trees, increases in impervious surfaces, and new stormwater hotspots attributed to private development spurred by the BeltLine. **Considering the mixed outcomes of the project, this dissertation**

explored the gains and losses for diverse actors and processes throughout the city resulting from the BeltLine, as well as how they are produced, and how they are experienced.

Three papers in this dissertation examined different aspects of this process, including: 1) the role of project professionals, or "technocrats," in the process of urban greening, 2) how diverse residents perceive and experience the outcomes of urban greening with respect to different socio-economic factors, and 3) the gains and losses the BeltLine produces from multiple disciplinary perspectives, including urban political ecology and environmental management. Together, this research draws on the strength of pluralism — or the use of multiple perspectives to better understand the tradeoffs inherent to the mutual pursuit of social, environmental, and economic goals via urban greening — to provide a more comprehensive assessment of how complex arrangements of positive and negative socio-natural outcomes are produced, experiences, and contested.

This dissertation utilized a mixed-methods approach, including semi-structured **interviews** with residents of BeltLine neighborhoods, professionals working for the BeltLine or BeltLine Partner organizations, and local experts in environmental management and social equity issues. **Observation** was employed at BeltLine meetings and events, neighborhood meetings within the corridor, activist-led meetings addressing the BeltLine, and meetings held by BeltLine partner organizations. Finally, **archival review** was used with policy and planning documents guiding the implementation of the BeltLine, and for BeltLine progress reports.

Scholarly implications of the research

The results of this research have several implications for academics and theory, particularly concerning how we understand and assess urban greening. First, results from this research point to the need for more multi-scalar analysis of urban greening projects and

outcomes. For instance, while the technocrats working on the BeltLine have the ability to implement certain changes in the BeltLine corridor, such as building the trail and implementing affordable housing, they do not have the jurisdiction to extend their efforts beyond the corridor. At the same time, the socio-ecological and economic impacts of the BeltLine *do* extend beyond the corridor. These include the stimulation of private development, which can lead to increases in impervious surface and the loss of trees and vegetation, that may compromise some of the environmental gains attributed to the BeltLine. Impacts can also include the construction of luxury apartment complexes, and retail, dining, and entertainment destinations that accelerate gentrification and displacement and increase local traffic, which may compromise BeltLine goals to reduce local reliance on cars, improve air quality, and enhance social equity throughout the city. Furthermore, since urban greening projects have scalar implications *beyond* the scale at which technocrats have some control, it is important to consider the scales at which preventative policies can be implemented. That is, policies that can be applied to mitigate some of the negative environmental effects of private development, and to combat displacement, both established as consequences of urban greening.

Second, much of the existing literature on urban greening focuses on the outcomes of these projects, yet, less is known about the *process* of how these projects take shape. With most attention on the outcomes, vague claims are often made about how and why the process produces particular results. For example, many critical accounts of project outcomes critique technocrats for creating inequitable outcomes and render gentrification and displacement as an oft-inevitable outcome of environmental improvements (Gould and Lewis, 2012; Kitchen, 2013; Wolch et a., 2014). The research in this dissertation demonstrates that the process of urban greening is more nuanced than much of the critical literature describes, as are the complex outcomes. Result from

the research in this dissertation could be used to help better direct the process of green development, in addition to assessments of outcomes. For instance, it would be valuable to assess how well projects create space to solicit and integrate diverse resident input. As residents are likely to have different needs and priorities based on their experiences, excluding the needs of certain demographics will reify existing inequalities – particularly as many projects pander to the goals of wealthier, whiter residents. As participation platforms to solicit resident input for urban greening are increasingly commonplace, the literature can benefit from more robust assessments about how well these processes translate into more equitable outcomes and targets that serve the needs of different groups of people. It would also be beneficial to assess how well projects make room for technocrats to draw on their own experiences and expertise to direct project outcomes. Do projects put pressure on technocrats to cater their work towards economic or fund-raising goals? Or, do they have the capacity to influence targets and outcomes based on their subjective knowledge?

Furthermore, this research demonstrates that many technocrats do have good intentions for project outcomes, but face barriers in achieving them due to project constraints. More robust assessments of how technocrats are or are not afforded the ability to influence project outcomes will advance our understanding of challenges and opportunities in the technocratic *process*, informing suggestions for tailoring that process towards more equitable outcomes. and for technocrats to draw on their own experiences and expertise.

Practice implications of the research

The results of this research also have several important implications that are relevant to the practice of urban greening and professionals working on these projects. This dissertation demonstrates that the Atlanta BeltLine, like many other urban greening projects, produces gains

and losses for different groups of people and processes. Better acknowledgment and discussion the near-inevitability of losses would help practitioners of urban greening to direct these losses in more intentional ways. This can be achieved by putting preventative policies in place *before* urban greening projects are implemented. For example, mitigating policies could help protect against the ecological gentrification that frequently results from urban greening, and to protect against negative environmental impacts that can be spurred by redevelopment. These can include comprehensive inclusionary zoning, community land trust in historic communities or communities of color, and deed restrictions to ensure that affordable properties are only exchanged between families and individuals in lower income brackets, preventing houses from being "flipped". Additionally, more robust development policies can be implemented, requiring new developments to use permeable pavement or develop around large trees, or providing tax credits for green roofs, to mitigate against some of the negative environmental impacts of new development. For projects like the BeltLine, which has already had a major impact on social, economic, and environmental conditions in the city despite only being partially completed, policies could be enacted before more project development takes place. To protect against gentrification and displacement, specific policies could be enacted at the scale of the city.

This research also shows that urban greening projects may benefit from being implemented over a longer time frame. The BeltLine, like many other urban greening projects, is being constructed at a rather aggressive pace, leading to drastic transformations in the nearby neighborhoods in just a few years. With a goal to complete the project by 2030, little room is left to modify the *process* of how project implementation is being pursued, even as several major consequences, losses, and unexpected outcomes have become apparent. This also leaves little room to integrate the needs and concerns of local residents as they face new and potentially

unwanted outcomes as a result of the project. Having a more flexible, less aggressive time frame to implement these projects would allow technocrats the opportunity to modify project plans and address concerns within the planning process that may be contributing to problematic outcomes, and would also allow community organizations and residents more time to adjust to, prepare for, or influence project outcomes. Further, creating these projects over a longer time frame could allow for more creative funding options to be used. Many technocrats interviewed for this research stated that the use of a Tax Allocation District (TAD) and philanthropic giving are the only feasible ways to fund a project of this scale. However, these funding mechanisms lead to new problems. Under the TAD, redevelopment is necessary to generate funds for the project, but also leads to gentrification and stagnant school performance. Tailoring events and outcomes to gain support from potential donors also makes the project cater to the needs of elite residents, rather than focusing on serving the needs of Atlanta's diverse population. Implementing projects over a longer time frame would also help to prevent rapid changes resulting from the project, many of which overwhelm existing residents.

Limitations of this research

There are several limitations to the research that are important to acknowledge. First, interviews with residents and technocrats did not include specific questions about income. Studies have demonstrated that income and financial security can impact perspective and experiences in relation to urban greening (Backstrom, 2018). In the case of this research, this information would be useful to form a better understanding of how the impacts of the BeltLine are experienced based on differences in socio-economic status. However, I felt such questions would be too intrusive and left them out interviews. I would also have liked to interview more technocrats to have a greater sample size and to have done more extensive analysis, similar to

that of paper 2. That is, to explore the subjectivities of technocrats with more attention to race, length of time as a resident, homeowner status, and income. However, upon requesting for interviews at ABI (where the majority of technocrats working for the BeltLine work), I was told I could only interview up to two individuals from ABI, as they did not want to dedicate more staff time to a single project. Finally, I would have liked to have interviewed residents living in future BeltLine neighborhoods. I interviewed residents living adjacent to the Eastside Trail, which was complete at the time of field work, and residents living adjacent to the Southside Trail, which was underway but not officially open to the public at the time. Extending the study to also interview residents of a planned BeltLine neighborhood would have allowed for further comparison between resident perspectives and experiences at three different stages in the implementation process, rather than two.

Future research

The results of this dissertation offer several opportunities for future research. First, I would like to conduct follow-up interviews with the technocrats and residents that were a part of this study at selected intervals. Interview questions would be structured to gauge how their perspectives, priorities, and experiences have changed over time. This would involve asking several of the same questions included in the initial interviews, such as residents favorite things about their neighborhoods, problems they feel need to be addressed, changes they have observed attributed to the BeltLine, and ideally, what they would want the BeltLine to address. Follow-up interviews could also include questions regarding how their perspective of the project has changed over time, and what gains and losses they have experienced in their neighborhoods since the initial interview. This can be useful to ascertain whether the BeltLine sufficiently addressed any of the residents' initial concerns, whether policies that have been implemented

since the BeltLine came online (such as the inclusionary zoning ordinance) have had any effects on resident's experiences and concerns. Ultimately, follow-up interviews would be useful to understand the *long-term* outcomes of urban greening projects, and how gains and losses are perceived and experienced by residents over time.

In this research, information about environmental change attributed to the BeltLine were primarily gained through interviews and archival review of progress reports. To expand on this, future research can include a more in-depth analysis of environmental outcomes across scales. Data collection could include a temporal analysis of stormwater hotspots around the BeltLine corridor before, during, and after project implementation. Assessing pre- and post-BeltLine stormwater hotspots would contribute to our understanding of the BeltLine's influence on reducing stormwater concerns at various points, and the impact of private development surrounding the BeltLine contributing to new stormwater concerns. This assessment would further be useful to understand if the BeltLine seems to have had a net positive or negative impact on stormwater conditions throughout the corridor overall. An additional temporal analysis of tree and vegetation cover would be useful for similar purposes. Using satellite imagery and remote sensing, I could measure changes in vegetative cover and tree canopy before, during, and after the implementation of the BeltLine. This would demonstrate the impact the BeltLine has had on increasing tree canopy and green space around the corridor but would also show losses attributed to private development in the same area. As urban greening projects convey their ability to 'green' an area, this type of analysis would also demonstrate whether net gains or losses in green space or tree canopy have resulted. Together, the collection and analysis of these data would allow for a more robust understanding of the specific ecological gains and losses at different scales (both at and beyond the site of the project) that have followed the

implementation of urban greening. Given that large scale urban greening projects are likely to continue to be implemented in cities around the world, this and related research is necessary to help better understand their effects and determine ways to improve their socio-ecological outcomes.

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APPENDIX A

INTERVIEW PROTOCOL FOR RESIDENTS LIVING IN NEIGHBORHOODS TANGENT TO THE WESTSIDE TRAIL

A. Topic 1: Background

1) Tell me a bit about yourself:

1b. How long have you lived in Atlanta?

1c. How long have you lived in the Old Fourth Ward / Peoplestown neighborhood?

1d. (If not a lifelong resident) What drew you to Atlanta, and specifically to the Old Fourth Ward / Peoplestown neighborhood?

1e. Are you involved in any community groups or social organizing in your neighborhood?
*If so, tell me more about these groups and your involvement

1f. What is your relationship like to your neighbors, and to your community within the _____ neighborhood?

2) Do you use the BeltLine, and if so, for what activities?

***2b.** (if no, why not?)

3) Have you been to any of the BeltLine meetings, and if so, what was your experience like?

3b. How do your views of the project fit into what the project planners were presenting?
OR, Were your goals for and views of the project similar to or different from the planners' discussion of the project?

***3c.** Do you plan on going to any BeltLine meetings in the future? Why or why not?

B. Topic 2: Resident goals and priorities. Will be useful to answer objective **2a:** *Determine the various types of socio-ecological priorities that technocrats and residents have for the goals and outcomes of the BeltLine.*

4) What do you value most about your neighborhood? (i.e. neighbors, community networks, location or proximity to services or amenities, safety, walkability, affordability, green space, etc.)

5) What are some of the most important issues or problems in your neighborhood that you feel need to be addressed?
OR, What do you view as some of the most problematic issues facing the residents of _____.

(if not captured in the above question, ask)

5b. Specifically, what do you view as some of the most important social, or economic issues in your neighborhood? (i.e. safety, availability of public transportation, walkability, access to services or businesses – such as healthcare or grocery stores, housing availability, gentrification / displacement, etc.)

5c. Specifically, what do you view as some of the most important environmental issues in your neighborhood? (i.e. pollution or environmental justice concerns, proximity to hazards, environmental quality, access to green space, etc.)

6) Ideally, what changes (if any) do (or did) you want the BeltLine to make in your neighborhood?

C. Topic 3: How residents view what is happening. Will be useful to answer objective **3b:** *Examine resident's perception of (existing or expected) project outcomes as positive or negative (perhaps relative to variables such as race, socio-economic status, community networks, and length of neighborhood occupancy, etc. – which is established in the background section)*

7) What changes do you anticipate for your neighborhood once BeltLine construction begins? (i.e. social, environmental, cultural, economic, etc.)

7b. Do you feel that you, your community, or Peoplestown neighborhood organizations have the opportunity to influence (*or resist) how the BeltLine will be implemented in your neighborhood? Why or why not?

8) How do you anticipate the BeltLine project will affect you, and your neighborhood, for the better or worse?

(If not captured in the above question, ask:)
8b. Specifically, are there any (expected) outcomes that you anticipate might enhance your neighborhood, or your experience living in the neighborhood?

8c. Are there any (expected) outcomes that you anticipate might be problematic for you or other residents of the neighborhood?

8d.** Do you feel that the BeltLine design for your neighborhood **(include examples from BeltLine documents?*) captures the goals and priorities of the residents of Peoplestown? Why or why not?

***9)** If you could change anything about the BeltLine, what would it be?

APPENDIX B

INTERVIEW PROTOCOL FOR RESIDENTS LIVING IN NEIGHBORHOODS TANGENT TO THE EAST SIDE TRAIL

A. Topic 1: Background

1) Tell me a bit about yourself:

1b. How long have you lived in Atlanta?

1c. How long have you lived in the Old Fourth Ward / Peoplestown neighborhood?

1d. (If not a lifelong resident) What drew you to Atlanta, and specifically to the Old Fourth Ward / Peoplestown neighborhood?

1e. Are you involved in any community groups or social organizing in your neighborhood?
*If so, tell me more about these groups and your involvement

1f. What is your relationship like to your neighbors, and to your community within the _____ neighborhood?

2) Do you use the BeltLine, and if so, for what activities?

***2b.** (if no, why not?)

3) Have you been to any of the BeltLine meetings, and if so, what was your experience like?

3b. How do your views of the project fit into what the project planners were presenting?
OR, Were your goals for and views of the project similar to or different from the planners' discussion of the project?

***3c.** Do you plan on going to any BeltLine meetings in the future? Why or why not?

6) Ideally, what changes (if any) do (or did) you want the BeltLine to make in your neighborhood?

C. Topic 3: How residents view what is happening. Will be useful to answer objective **3b:** *Examine resident's perception of (existing or expected) project outcomes as positive or negative (perhaps relative to variables such as race, socio-economic status, community networks, and length of neighborhood occupancy, etc. – which is established in the background section)*

7) What changes (if any) have you experienced in your neighborhood since BeltLine construction began?

8) Which of these changes have been positive or negative for you, and for your neighborhood as a whole, and why?

(If not captured in the above question, ask:)
8b. Specifically, have any outcomes of the BeltLine implementation in the Old Fourth Ward enhanced your (or your neighbors) experience living in the neighborhood?

8c. Have any outcomes of the BeltLine implementation in the Old Fourth Ward been problematic for you or for other residents of the neighborhood?

***8d.** Do you feel that the BeltLine implementation in the Old Fourth Ward (i.e. the Old Fourth Ward Park, Ponce City Market, etc.) captured the goals and priorities of the residents of Old Fourth Ward? Why or why not?

9) Do you feel that you, your community, or Old Fourth Ward neighborhood organizations had (or continue to have) the opportunity to influence (*or resist) how the BeltLine was implemented in your neighborhood? Why or why not?

***10)** If you could change anything about the BeltLine, what would it be?

APPENDIX C

INTERVIEW PROTOCOL FOR ENVIRONMENTAL MANAGERS

A. Factors related to the decision-making process for watershed management targets (within green redevelopment design process)

1) Watershed management is featured prominently in BeltLine materials as a core ecological goal for the project. Can you tell me about why water efficiency and quality are one of the project's main areas of focus?

2) Who weighs in on these water quality and efficiency targets? (Such as planners, BeltLine partners, stakeholders, City of Atlanta workers, neighborhood representatives or residents?)

2b. Have different individuals had conflicting targets or goals? How were these negotiated?

3) How are best practices for implementing and measuring water quality and efficiency targets selected?

3a. What science or expertise is brought into the decision-making process?

4) Who is responsible for measuring and reporting the progress of these water quality and efficiency targets and their outcomes?

5) How do you decide <u>where</u> to implement these water quality and efficiency targets?

B. What ecological targets are being implemented and where, and what results/expected results are we seeing/do we anticipate to see?

6) So far, where has the project targeted improvements to water quality and efficiency?

6b. Specifically, where has the project targeted improvements to local stormwater management issues?

6c. Why were these areas targeted for water quality and efficiency improvements?

7) What ecological changes are you seeing in these locations?

7b. Have these ecological results met expectations?

7c. Based on the ecological results we have seen so far, will this influence how future water quality and efficiency goals are implemented and measured?

8) What future sections of the BeltLine will target water quality and efficiency improvements, and what changes do we anticipate to see?

C. How water quality and efficiency targets are linked to the broader contexts of urban space/urban nature, and other BeltLine goals

9) How will the BeltLine's targets to improve water quality and efficiency benefit the city?

10) How do these water quality and efficiency goals relate to other (social, ecological, or economic) BeltLine goals?

APPENDIX D

INTERVIEW PROTOCOL FOR TECHNOCRATS

(3-5 questions per topic – move on after ~20 minutes)

A. Topic 1 – 'Technocratic Subjectivity': How project professionals' and planners' backgrounds influence what they care about related to the BeltLine project. (Useful to answer objective **1a**: *How professionals' goals for the BeltLine are influenced by their training and experience living in Atlanta*)

1) Tell me about your background and how you got to this profession?

> **1b**. How has your training (as a planner/ _____) shaped your goals for the BeltLine?

2) How long have you lived and worked in Atlanta?

> **2b.** What drew you to Atlanta, and what do you value most about the city?
>
> **2c.** How has living in Atlanta shaped your goals for the BeltLine?

3) What do you view as some of the most pressing <u>social issues</u> (*like gentrification, economic disparity, public health, etc.*) and <u>ecological/environmental issues</u> (*like stormwater overflows, water quality, air pollution, environmental justice issues, presence of brownfields, etc.*) in Atlanta? And in the Old Fourth Ward / Peoplestown neighborhoods more specifically?

> **3b**. For my research, I am specifically looking at the Old Fourth Ward and Peoplestown neighborhoods. I'm happy to hear your thoughts about the social and ecological issues in these neighborhoods specifically, but your thoughts on these social and ecological issues in Atlanta more generally.
>
> **3c**. How do your views on _____ (whatever was stated as the most significant social/environmental issues in Atlanta, Old Fourth Ward, Peoplestown) relate to your experiences living in Atlanta and your training as a _____?

B. Topic 2 – How does the technocratic process work, how can planners and project professionals influence the project. (Useful to answer objective **1b**: *Examine how technocrats navigate their ideas for the BeltLine relative to job constraints or opportunities to guide project development*).

4) In what ways have you (been able to) contribute(d) to the design or implementation of the BeltLine project?

5) If you were given the freedom, what improvements or changes to the BeltLine project would you like to see? // Ideally, what improvements or changes to the BeltLine project would you like to see?

6) Does the planning process offer you opportunities to make these changes?

7) Many different individuals are involved in the BeltLine project (from individuals working for Atlanta BeltLine Inc., the Atlanta Beltline Partnership, Board members, beltline partners, stakeholders, individuals working for the City of Atlanta, and local residents).

> **7a.** What are the different types of project priorities held by these groups?
>
> **7b.** How do you navigate these different priorities, or, what do you do when priorities (between various stakeholders) come into conflict?
>
> **7c**. (Of these various individuals and stakeholders contributing to the project, is there any group or individual(s) that has a final say?)

C. Topic 3 – (How to technocrats perceive) the diversity of resident goals, what happens when different needs arise, and what can technocrats do about it: Useful to answer objective **2a**: *Determine the various types of socio-ecological priorities that technocrats and residents have for the goals and outcomes for the BeltLine*, and objective **2b**: *Examine which goals are (and are not) integrated into project design in O4W and Peoplestown*).

8) How do you determine what (social, environmental, economic) outcomes will be prioritized for the BeltLine?

9) What do you view as some of the social and environmental tradeoffs inherent to the project?

9b. How do you prioritize targets when faced with tradeoffs?

10) Resident participation features prominently on the BeltLine website and in BeltLine materials. So far, what are some of the common resident goals for the project you have heard of?

10b. Where or from whom did you hear about these goals? (At BeltLine meetings or engagement sessions, through solicitation of resident ideas on the BeltLine's social media platforms, from interacting with residents in day-to-day interactions (in or outside of work), from other planners or project professionals who have been involved in the public engagement sessions?)

10c. Specifically, what resident goals are you aware of in the Old Fourth Ward and Peoplestown neighborhoods?

***10d.** What resident goals have been integrated into project design, and what was the process of soliciting and integrating these goals into the BeltLine design like?

11) What do you do when the priorities of different residents come into conflict? Or, what do you do when implementing the goals for some residents will cause tradeoffs for (the goals of) other residents?

11b. What tradeoffs were made in the design and implementation of the BeltLine in the Old Fourth Ward neighborhood, and what tradeoffs do you anticipate will be made in the Peoplestown neighborhood?

12) How do you navigate differences between your own ideas and priorities for the BeltLine with residents' priorities, and with project constraints?

12b. How are resident goals for the project similar to or different from your own goals for the project?

12c. How are resident goals, and your goals, for the project similar to or different from

the overall BeltLine plan (perhaps specifically, the strategic implementation plan).