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INCREASING SOCIAL EQUITY IN TRANSPORT PLANNING  
A CASE STUDY IN FORTALEZA, BRAZIL

BY

GURDEEP KAUR

THESIS

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Advisers:

Associate Professor Bumsoo Lee

Assistant Professor Marc Doussard

Associate Professor Clarissa Freitas, Universidade Federal do Ceará, Brasil

## **Abstract**

State-led land takings have been at the forefront of the battle ignited by a light rail development project in Fortaleza, Brazil. The project was planned to repurpose an old railroad upon which informal settlements have become established over the past fifty years due to a multitude of reasons including urbanization, lack of governmental resources to create serviced land, and inflated land values due to speculation. In order to clarify the land expropriation, the justification of the light rail development, and the planning process in general, this work includes a literature review, a spatial analysis, participant observations, and interviews with formal state planners and informal residents affected by the development. This work attempts to understand how the planning process must be improved if planners and government officials truly want to mitigate social inequities created by the planning process and progress towards more socially just planning, with a focus on public transportation investments. The findings include discrepancies in the planning process in terms of participatory strategies and engagement of civil society. In order to reconcile these gaps, a clear planning process including information sharing, public educating, and participation benchmarks needs to be established. Furthermore, pro-poor and social justice goals need to be explicitly supported by being tied to municipal budgets for projects, the planning field itself needs to establish diversity goals and accountability measures in order to increase representation of underrepresented groups among professional planners, and emphasis needs to be placed on research in general, especially qualitative research that produces more insightful and holistic planning resolutions. In Fortaleza, Brazil, these principles can be tangibly achieved as the government organizes itself to establish protocols and planning systems as civil society is able to insert itself in these initial stages of development.

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Punjabi translation of last paragraph:

ਅੰਤ ਵਿੱਚ, ਮੈਂ ਆਪਣੇ ਮਾਤਾ-ਪਿਤਾ, ਮੇਰੇ ਪਰਿਵਾਰ ਅਤੇ ਮੇਰੇ ਦੋਸਤਾਂ ਦਾ ਧੰਨਵਾਦ ਕਰਨਾ ਚਾਹਾਂਗੀ। ਤੁਹਾਡਾ ਪ੍ਰਭਾਵ ਤੁਹਾਡੀ ਸੋਚ ਨਾਲੋਂ ਕਿਤੇ ਵੱਧ ਹੈ, ਮੈਂ ਆਪਣੇ ਮਾਪਿਆਂ ਦਾ ਸ਼ੁਕਰਗੁਜ਼ਾਰ ਕਰਨਾ ਚਾਹਾਂਗੀ ਜਿਨ੍ਹਾਂ ਦੇ ਸਾਹਸ ਅਤੇ ਬਹਾਦਰੀ ਮੇਰੇ ਵਿੱਚ ਵੱਖੋ-ਵੱਖਰੇ ਸਭਿਆਚਾਰਾਂ ਦੀ ਯਾਤਰਾ ਕਰਨ, ਸਿੱਖਣ ਅਤੇ ਉਨ੍ਹਾਂ ਦੀ ਪ੍ਰਸ਼ੰਸਾ ਕਰਨ ਅਤੇ ਨਵੀਆਂ ਭਾਸ਼ਾਵਾਂ ਸਿੱਖਣ ਦੀ ਚਾਹਤ ਪੈਦਾ ਕੀਤੀ ਹੈ। ਕੋਈ ਵੀ ਉਪਲਬਧੀ ਜਿਸ ਨੂੰ ਮੈਂ ਪੂਰਾ ਕਰਦੀ ਹਾਂ, ਇਹ ਉਹਨਾਂ ਦੇ ਹੌਸਲੇ ਅਤੇ ਕੁਰਬਾਨੀਆਂ ਸਦਕਾ ਹੁੰਦਾ ਹੈ। ਜੇ ਕੁਝ ਮੇਰੇ ਵਿੱਚ ਚੰਗਾ ਹੈ ਉਨ੍ਹਾਂ ਤੋਂ ਸਿੱਖਣ ਤੋਂ ਹੈ ਅਤੇ ਜੇ ਵੀ ਮੇਰੇ ਵਿੱਚ ਕਮੀਆਂ ਹਨ ਉਨ੍ਹਾਂ ਦੀਆਂ ਸਿੱਖਿਆਵਾਂ ਵੱਲ ਧਿਆਨ ਨਾ ਦੇਣ ਕਰਕੇ ਹਨ।

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## Chapter 1: Introduction/Question

Figure 1<sup>1</sup>



The city of Fortaleza, Brazil is the capital of the state of Ceará, located in the northeast region. Historically, the region has been defined by long periods of severe drought that caused waves of migration into the city. The Northeast region of Brazil is known to be less developed, poorer, historically a region with high population of slaves and today with a high population of Afro-Brazilians, and less politically powerful than other parts of the country. In 1810, Fortaleza had a population of about 2,000 inhabitants. In 1877, a three-year drought caused a population increase from approximately 75,000 to 189,000. In subsequent droughts of 1915, 1932, and 1942, this enormous population migration overwhelmed the city designed by Adolfo Herbster, modeled after Baron Haussmann's Paris. During these waves of epic growth, the migrants were confined to quasi- "concentration camps" (Gondim 2004). However, the population did not remain at such high levels as it did in other Brazilian cities. In Fortaleza, due largely to epidemic outbreaks of yellow fever, cholera, and small pox, and partially to out-migration, the population of the city had a population of approximately 78,000 in 1920 (ibid). It is probable that the confined conditions of the migrant population played a role in high death rate.

<sup>1</sup> Menegaz, Felipe. "Regions of Brazil." July 31, 2011. Retrieved from: [https://upload.wikimedia.org/wikipedia/commons/thumb/4/41/Brazil\\_regions.png/682px-Brazil\\_regions.png](https://upload.wikimedia.org/wikipedia/commons/thumb/4/41/Brazil_regions.png/682px-Brazil_regions.png)

Today, Fortaleza is a city composed of approximately 2,452,185<sup>2</sup> inhabitants expanding 314,930 square kilometers. Of this population, 910,187 inhabitants are reported to be employed, a number that must be contextualized with a 12% unemployment rate and 36% informal sector employment rate<sup>3</sup> in order to gain a better understanding of the complete picture. The city has a Gross Domestic Product of BRL 56,728,828, with the service sector composing more than half of that and employing 450,000 people. Overall growth in Fortaleza has been consistent with the state and the nation, although the city does lag behind the national average in the basic educational development. Between 2003 and 2009, the middle class grew up over 50% in Latin America, with Brazil's growth contributing to 40% of the total<sup>4</sup>. This growth has contributed to changing conditions and a changing image for the country. The implications of this growth, however, are documented through some of the anecdotal insight collected through this research study.

The research begins with a focus on the development of a light rail transit system currently under construction in Fortaleza, Brazil. The project was in conflict with local residents because it would result and has resulted in the displacement of residents who resided along the route. The residents in these twenty-two<sup>5</sup> affected communities reside in informal settlements that have existed for approximately fifty years. The informal communities are located along an old railroad track (See Figure 2). However, this light rail project is planned along those same tracks. The light rail requires additional space surrounding the original tracks for improvements and stations. The land from which the residents are being removed is publicly-owned land that informal residents have come to occupy. However, due to Brazil's progressive land policies, e.g. and the urban

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<sup>2</sup> "Cidades." Instituto Brasileiro de Geografia e Estatística. Retrieved from: [http://cidades.ibge.gov.br/xtras/perfil.php?lang=\\_EN&codmun=230440&search=ceara|fortaleza](http://cidades.ibge.gov.br/xtras/perfil.php?lang=_EN&codmun=230440&search=ceara|fortaleza). Last Census Report 2010 calculated the population at 2,609,716.

<sup>3</sup> Gondim, Linda MP, and Laurence Hallewell. "Creating the Image of a Modern Fortaleza: Social Inequalities, Political Changes, and the Impact of Urban Design." *Latin American Perspectives* (2004): 62-79.

<sup>4</sup> Ceratti, Mariana. "In Brazil, an Emergent Middle Class Takes Off." *The World Bank*. November 13, 2012.

<sup>5</sup> This number has also been reported to be 17



upgrading and land tenure, initiatives of the 1990s, these residents have gained some recognized land rights. The project has drawn wide criticism as it beckons back to earlier slum clearance policies. This research hopes to expand upon the existing literature regarding urban planning projects and the processes behind their designs, approvals, and implementations. Once the research began, the focus expanded to include an understanding of the wider landscape of public and active transportation in Fortaleza. The research aims to add to the body of literature regarding the practicable ways in which the planning process and field can be improved in terms of social equity and justice. How does the state make its planning decisions, who do public investments serve, and how does civil society, primarily the urban poor, assert its rights in a country with rapid wealth and socioeconomic changes? Studying the project implementation as it is being constructed provide greater insight as to how these public works are ultimately carried out with specific attention to the politics of the eviction, demolition, and construction processes.

This research aims to understand largely urban complexities such as affordable housing and spatial justice in the context of Fortaleza, Brazil's transportation planning processes and projects. In order to do this, the research begins with a literature review divided into four parts. The four parts cover the influence of capitalism, global and Brazilian land policy in development, the struggle for social justice through activism, and public transportation in South America. After a comprehensive literature review, GIS data was used to conduct a spatial analysis of the urban phenomena, some of which was introduced in the literature. The most in-depth part of this research is field research in the form of analytical observations, immersive participation in public meetings and forums, and site visits conducted in Fortaleza, and in its informal communities in specific between February and March 2017. These were complemented by interviews and conversations with residents of informal communities at risk of displacement, formal professional planners for

different governmental departments and agencies, and organizations. The final parts of this work discuss and analyze the results and offer a conclusion with recommendations drawn from the findings to help expand planning practice and theory. How can planners tangibly increase social equity in the planning field and thereby, in society? What qualities in transportation planning need to be improved in order to amend the social inequalities that planners and their decision-makers create through their own work? This case study in Fortaleza, Brazil explores public transportation investments, specifically the development of a light rail line, to explore whether this project utilizes tools such as public participation and engagement to promote greater democracy and citizen control.

*Figure 2*



Google Street View: Railroad tracks through Lagamar

## **Chapter 2: Literature Review**

### *2.1 Introduction*

As cities attempt to reinvent themselves by diverging from automobile-oriented planning practices and recreating urban spaces through public investments, planners must ask ourselves how this new paradigm shift aligns with the social fabric. As with all public investments, land developments, and public policies, larger trends and long-term goals and consequences need to be examined to understand what this paradigm shift accomplishes or aims to accomplish. With these new investments, planning decisions are made as to the allocation of public funds, the concessions made to the private sector, and the physical geographical impacts of these projects. And while a transit-oriented approach is being championed by local planners and different national and international agencies alike, questions about the fair distribution of the costs and benefits of these projects must be asked. This literature review surveys work focusing on the planning process and the role of capitalist forces therein, the public policies on land and development that have produced current urban phenomena such as informal housing and sprawl, the critiques of equity and social justice championed by social movements of activism focused around land, transportation, and inclusion, and how the contemporary framework of public transportation planning today in South America. This section aims to provide a general perspective to frame the current transportation and land use planning practices in Fortaleza, Brazil in 2017.

### *2.2 Capitalism and the Planning Process*

Scholars have written on the relationship between the planning process and market forces. Geographers and planners such as David Harvey and Saskia Sassen have discussed the way these two forces influence one another, with a trend over the past few decades reflecting an increase in

the power of free market capitalism-led development. One of the most fundamental questions to ask at the starting point of planning and public investments ventures is planning for whom or as Sassen presents it, “Whose City is It?” (Sassen 1996) in which she argues that capital and corporations dominate city politics at the expense of low-income residents, with one’s right to the city being directly linked to one’s financial contributions to it. However, an important point that is that these perceived financial contributions must be deconstructed and analyzed in order to evaluate the true costs versus benefits of these larger capital and corporate interests. With the defunding of municipalities, capital drives political decisions as cities are more dependent upon private companies to fund public goods and services. And as cities must attract private businesses, and compete with each other as they do, to locate to them with direct and indirect incentives, these public investments continue to be accepted as beneficial to urban society without deeper and quantitative critiques of long-term effects. Furthermore, as capital has become increasingly mobile, so has the labor it depends upon. However, where capital has gained platforms such as the legal protections, on which to defend its rights, individual bodies have not and the unsurprising results are urban political violence (i.e. through property damage) (Sassen 1996). While economic impact studies can be performed on any project proposal, a more critical analysis must be taken to evaluate social inclusion and mobility connected to these proposals, evaluating decisions and policies in terms of their contributions beyond economic development. As Fortaleza grows and needs to increasingly compete with its larger more financially robust counterparts, it cannot ignore its susceptibility to missteps in public investment decisions.

As Sassen warns against the incredible, but selective, mobility of private capital and its destabilizing potential, David Harvey (2010) explores how the spatial distribution of social processes not only represents the socio-economic inequality of a place but also reflects the

mechanisms that generate it through the locational placement of certain goods and services, thus affecting “real income,” measured not only in earned income but the financial benefits accrued vis-à-vis external improvements that translate into increased private property values (Harvey 2010). Again, although project proposals are often evaluated monetarily, social processes have greater dimensions that cannot be directly accounted for and a more interdisciplinary approach is needed to tackle this for future planning if the field is to refocus from a market-based perspective. Furthermore, as the literature on transportation planning included in this review will demonstrate, this approach needs to particularly be dissected in the context of transportation studies. As forecasting and traffic modeling are often a primary tool for transportation investments, the problems inherent in these tools can have influential consequences. Forecasting induces the effects inherent in the system that the user, or society, has deemed permissible (Harvey 2010). Therefore, certain negative externalities that hegemonic planning practices allow that reproduce the status quo of inequality are not as negligible or forgivable to some communities as they may be to others as weaker groups may not be as resilient to these externalities (Harvey 2010). Therefore, Harvey argues that a small group of decision-makers override actions that might benefit the general masses as the democratic system currently does not treat all players equally.

Using international examples, the argument explains how capital surplus and power distribution in the hands of a government that favors corporate interests translates into the reality that while a country might be doing very well on a national scale, as in the case of Brazil’s recent economic achievements, it does not mean that the citizenry is doing well (Harvey 2008). Capital surplus, rather than resolving social issues, can actually cause greater political unrest, and the historic governmental response has been to absorb the surplus in order to suppress the workforce (ibid). This raises questions of how this surplus is produced and justified against the backdrop of

deep and growing economic inequality and poverty. Capital surplus has resulted in grand public infrastructure projects that raise the state's wealth, which in turn supports the country's rich, instead of projects aimed to serve the general non-corporate public. Thus, Harvey calls for the evaluation of public investments from a social capital perspective employed through a set of new standards to justify them that departs from the current economic development lens. And one approach to the development of another set of standards would be, for instance, an organized unified front established across land resistance movements worldwide that work in the same globalized way as the corporations attacking them (ibid).

Therefore, to explore avenues for globalizing resistance, the instrumental role of international agencies such as the World Bank and the Inter-American Development Bank, must be explored. As national governments are subject to political pressures, international agencies can contribute to the construction of cities as machines of capital, with a declining dedication to democracy (Arantes 2012) or shift the ways in which they work in order to use their independence from nationalist loyalties to establish the better management of cities (Harris 2015). However, urban reform and financial restructuring policy recommendations and practices from, for example, the World Bank, do not work in a vacuum: "Although multilateral, the World Bank speaks with an American accent" (Harris 2015). The role of international agencies in the context of both housing and transportation development must therefore be understood in the context of their financing agents and ulterior obligations. As the power of these agencies grows in the urban formation and planning process at the local level, their effects on global wealth redistribution and restructuring must be viewed with a critical lens. The economic policies of the IDB and World Bank with the support of local elites and outsourced technocracy in the Global South resulted in the 1980s debt crisis accompanied by defunded and weakened institutions of local government

(Arantes 2012). This inclination towards technocratic practices, supposedly free from social and political interests in the name of rationalism needs to further be explored against the background of cultural valorization of the hard sciences that transcends national boundaries. Furthermore, as these loans are tied to projects of development, whether economic or human capital, they do place pressure on decision-makers in local government in shaping policies and initiatives. The role of international agencies and institutions will be explored in the context of Fortaleza, Brazil in the later parts of this work as much of the transportation planning in the city is initiated and funded by these organizations.

One important factor that must be addressed as we explore economic inequality is the fact of the existence of crime, particularly in the Brazilian context. Crime not only characterizes Brazilian social experiences, it shapes them and the physical landscape in which they occur. Crime even shapes the planning process itself (de Souza 2005). With the international spotlight on Brazil with the country hosting the World Cup in 2014 and the World Olympic Games in 2016, many social problems have gained international attention, including the levels of violent crime. Brazilian authorities deployed various methods to combat this stigma in order to meet the events deadlines, including pacification and over-policing in the poorer areas of their cities. Literature, most famously Caldeira's *City of Walls*, examines how growing inequality manifests itself in urban segregation through walled fortresses in Brazilian cities (Caldeira 2000). Globally, cities divided in wealth tend to be more segregated as the wealthy chose to self-segregate into privatized enclaves and neighborhoods, as public safety is increasingly a commodity purchased through privatization (Murray 2004). Wealthier residents and businesses opt for privatized armed security guards, high perimeter walls –or *muros*, and electric fences (ibid). In the Fortaleza context, this would also extend to crime as a motivator to own a private vehicle and have its windows tinted. With growing

income inequality, spaces are becoming increasingly privatized as cities sell into private-public partnerships, thereby selling away the rights of poor people to exist in those spaces (ibid). Without physical space to practice democracy, democracy itself becomes limited. As cities attempt to fund themselves through cost-recovery strategies and committing to greater alliances with private capital, for example through public parks built and maintained by private developers with adjacent properties, the city itself becomes privatized. However, without those agreements, the space may not exist to begin with. These relationships and power balances are classic examples of the wicked problems that that Webber and Rittel discussed in 1973 (Rittel 1973). The exploration of the causes and effects of private capital, international agencies, and local planning will be continued in the context of land policy and development. Therefore, as planners pursue social equity, they cannot disregard the sociopolitical context of an increasingly segregated and “apathized” civil society whom they must win over to support pro-poor planning.

### *2.3 Land Policy and Development*

Planning is the intentional spatial processes that manipulate land and space, resulting and reflecting the social contexts thereof. Part of land policy and development, especially in the Global South context is the existence, persistence, and growth of the informal sector. A body of research (Harvey 2007, Miraftab 2009, Mukhija 2014, AlSayyad 2004, Roy 2005, Roy 2009, Holston 1999, Sandercock 1998, Portes 1989) on informality undeniably links it to the liberalization of the private market, since the 1970s, that has caused extraordinary wealth inequality. Informality is therefore, not sporadic or spontaneous but part and parcel of the formal planning process and inequality and uneven wealth distribution must be addressed if informality is to be reduced or if informal residents are to gain full citizenship (Roy 2005). Deregulation of the market is matched by the extreme



prolific increases of informality. Informality is complex and while it is intricately correlated with poverty, they are not one and the same. It is part of planning, not the absence of it and it is the formal state planning system that makes informality possible and, arguably, necessary (Roy 2009). However, Roy argues against this almost fetishized notion of informality as an extralegal solution, it is rather a state of crisis, a structure of deregulation, not a grassroots movement parallel to the formal system (Roy 2009). Therefore, land tenure and urbanization and in situ upgrading policies will not resolve the social exclusion that the residents face (ibid). And while it is the deregulation policies that produce informality that must first be confronted as the causes of social exclusion, not viewed as solutions or independent of the crisis, the global trajectory of planning policies in cities trend towards further deregulation (ibid).

This deregulation-based approach is visible even in progressive housing policies that attempt to help disadvantaged populations, as is the case with the public-private delivery of public housing in Fortaleza, Brazil. As state-led planning departs from modernist practices of slum removal, it has turned to support and praise grassroots-led efforts that fought for in-situ and bottom-up approaches (Van Ballegooijen 2013) such as the PRIMED program in Medellin, Colombia (Echeverri 2012). On one hand, research calls for the standardization of these focused, comprehensive, and participatory interventions in order to compile “best practices” for retrofitting existing informal communities in order to serve the residents (Echeverri 2012), while on the other hand, arguments are being made that this approach does not help bridge the gap to full social inclusion and participation in democracy because effective sustainable housing policies are directly attached to the acquisition of rights, democratic participation, and the strengthening of civil society, all which make it a political endeavor (Van Ballegooijen 2013). As these two almost opposing viewpoints confront each other, one possible solution offered is to make government

planning more effective with stronger institutions, reforming it as a force of antagonism to the poor, but one that is more representative of civil society (ibid). In the Brazilian context, there seems to be a return to developmentalist sprawled housing policy where self-management are viewed as effective (Pasternak 2014), but this is juxtaposed with the fact that the informal sector has continued to grow. In Fortaleza, this growth has occurred primarily on “leftover land” and the peripheries following private and public investments-led development (Pequeno 2010) despite progressive public policies such as the codified Right to the City in the 1988 Constitution which was reaffirmed by the passage of the City Statute in 2001. The City Statute’s key guiding principles are the social function of property, the fair distribution of the costs and benefits of urbanization, and the democratic management of the city (Rodrigues 2010).

Scholarship on the City Statute (Fernandes 2010, Freitas 2015, Pequeno 2010, Reali 2010) agrees that it is a powerful and instrumental framework on which civil society can base their demands in the urban arena, but more tools need to be developed in order to adapt and apply its potential at the local level. Some scholars may be more optimistic about its potential, claiming that while urban development through public infrastructure upgrades has historically led to land appreciation and displacement and working closely with the City Statute can help mitigate the negative externalities if not completely reverse them (Reali 2010). While the City Statute was a vaguely-worded policy at the federal level, it produced tangible effects by giving civil society the support to demand more rights and participation in the decision making process, as well as the development of land rights legitimization tools such as AEIS (also referred to as ZEIS)- Area of Special Social Interest (Reali 2010). The City Statute has established the grounds for greater transparency, innovative tools, creative legal solutions, judicial reform, and reformative policies about private property rights, but greater collaboration is needed between the three levels of

government in order to face the continuing trends in the urban development landscape (Fernandes 2010). And with this interplay between levels and branches of government, decisions about property rights are deferred to the judicial branch and the interpretation of law, which can vary by taking the traditional perspectives on private property disregarding the social function obligation imposed by the City Statute, or more progressive ones on a case-by-case basis (Fernandes 2010). This role of the judicial branch is not new nor unique to Brazil. Other scholars have tracked the channels by which land expropriations have taken place globally. Eminent domain is taking a different shape due to forces of changes in public opinion, social resistance, changing land tenure rights, changes in the international context, and a growing independence of judiciaries (Azuela 2009). Land expropriation for public infrastructure projects is not necessarily declining, but is facing new challenges, meaning while eminent domain still remains powerful, its use is shaped by the context of the discussion, i.e. economic development versus human rights (ibid). One of the biggest challenges in this field of research is the lack of regular systematic record-keeping on land expropriations. Currently, no database exists to track uses of eminent domain and the need for greater data in terms of empirical analysis, participant observations, and case studies. Azuela identifies the need for municipalities to construct such a database in order to organize responses to social movements and produce more efficient methods of resolutions instead of high cost displacement and compensation processes resulting after judicial proceedings (Azuela 2009). Furthermore, it would be a useful tool for community organizers to develop in order to provide empirical data for their own resistance against regulatory land takings. The research further recommends that planners need to establish a set of standards to justify regulatory land takings, and through record-keeping, they can produce better analyses to create more efficient mechanisms to satisfy public needs.

This data collection is necessary more than ever as Brazil enters the world stage as an economic leader and target for economic investment, between 2003 and 2014 incomes of the poorest 40% of the population grew an average of 7.1%, the Gini coefficient fell 6.6 percentage points<sup>6</sup>. As news coverage (Schwartz 2014) of the recent World Cup 2014 and Olympics 2016 highlighted, Brazil's growing presence in the spotlight threatens its most vulnerable residents i.e. favela residents. In addition to displacement through direct regulatory means, processes of gentrification threatened the prized locations of Rio's favelas. This problem is reflected in Fortaleza in normative research conclusions that suggest a trickle-down approach where investments that promote the "fantasy island" of the city's place as a top tourist destination is ultimately beneficial to all (Gondim 2004). While the authors argue that the government is not the only urban shaping force in the city and that private capital is its own city-shaping force, they acknowledge that social movements also play a role in shaping the city as well as add cultural value to all of the city's residents (ibid). However, this appears to be almost just a step away from the commodification of activism that cities across the world have seen such as the gentrification of Harlem, once ground zero for racial justice movements, in San Francisco, a city that possesses a rich history of gay rights' movements, and East Los Angeles, a neighborhood historically rich in Chicano history, art, and culture. These once hotbeds for resistant counterculture and social defiance are being rearranged to fit new market demands, therein displacing the residents and their social labor.

Now after more than 10 years since the unanimous passage of the City Statute, a growing body of research (Pequeno 2010, Garmany 2011, Freitas 2015) is able to evaluate its effects, successes, and shortcomings. One of the basis of critique is the continued lack of public participation in governmental planning processes. Researchers argue that public participation in

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<sup>6</sup> "Overview." Brazil. *The World Bank*. Retrieved from: <http://www.worldbank.org/en/country/brazil/overview>

the planning process and social inclusion remain lacking. Although activism is sought to garner greater public participation in the planning process, Fortaleza needs stronger political will focusing on social issues in order to make the planning process more participatory. In order to support these two initiatives, the municipality also needs to hire more professional planners (Pequeno 2010), a suggestion that echoes the need for stronger institutions (Van Ballegooijen 2013). One strong critique of both policies and practices employed by planners has been whether these initiatives and projects actually achieve greater social inclusion for the intended population (Freitas 2015, Roy 2009, Berney 2008, Perlman 2007, Perlman 2006). And researchers (Preston 2007, Cordoba 2014, Kenyon 2002) have attempted to create metrics and tools in order to identify and measure social inclusion in its various forms. One recurring theme is the need to curb neoliberal policies and practices, primarily of long-term corporatized land speculation, if true social inclusion is to be achieved. Attempting to address informal housing without implementing and utilizing tools to curb land speculation produces the same center-periphery spatial segregation of the rich-poor that the market has already produced in Brazilian cities with wealthy residences established at central locations (Freitas 2015). Through the Minha Casa Minha Vida- My House My Life (MCMV) housing program in response to the City Statute, the federal government funds housing for the poor and requires it to be on serviced land, an important development, but still leaves the location up to the market. This means that the only place profitably attractive to developers to produce housing that meets the maximum income thresholds for the lower income groups is at the urban peripheries (ibid). As urban policy fails to meet demands due to land speculative practices, the middle class has come to occupy housing meant for the poor, who thus must again rely on informal housing. Policies and master plans failed to set aside serviced land to meet the demands of middle class housing. The government does not intervene in the formation of urban land pricing, this is left it

to the market, thus recreating the periphery expulsion model, or what the Global North would dub as the suburbanization of poverty. Furthermore, the government funding for Minha Casa Minha Vida created a demand for serviced land which led to a price increase for that land. As a result, the social housing is being located further away on land that is not serviced. This increase in demand increased the price of vacant lots. This demand, generated by the public investment towards building social housing transfers the surplus value to private owners. Rendering social housing to locate to less desirable locations.

Pequeno and Freitas' work indicated that the vacant housing units in Fortaleza urban area are approximately 77,000 in the last census, not including undeveloped lots that do not fall into IBGE census methodology. Therefore, unlike the overarching narrative of "overcrowding" cities in the Global South, it is a matter of lack of provisions as to where certain segments of the population are allowed to reside. Serviced land is scarce and expensive, the public sector does not have enough funds allocated to create adequately serviced housing for its population, and "rogue planning" creates more problems of unsustainability, sprawl, and inequality. This is reminiscent of the large public housing developments in the south and west directions of Fortaleza, which drove the conurbation process in the 1970s led by the National Housing Bank, thus resulting in the extension of public investments in services such as the road network in that direction (Freitas 2015). Property owners along these routes were thus able to gain immense "real income" (Harvey 2010). Therefore, while the ZEIS tool was employed and social movements achieved the inclusion of demarcated Special Interest Zones in the Fortaleza Master Plan 2009, the lack of political will means that no Minha Casa Minha Vida housing exists in those zones today (Freitas 2015). Instead, MCMV housing continues to be developed at the periphery accompanied and aided by lowered environmental regulations. These similar processes where the causes generating the problem are

untouchable by local and federal governments and the absolute defense of private property rights is unquestioned is a global problem. To this end, researchers call on more localized analyses and resolutions, including a focus on how place-specific geography and socio-spatial characteristics shape local urban development, instead of extrapolating conclusions from the larger cities that have been the focus of lots of research such as Rio de Janeiro and São Paulo in order to prevent incorrectly mapping theoretical frameworks on second and third tier cities (Garmany 2011). The informal urban development in Fortaleza reflects a trend in mobilization and economic development policies centered around land rights and the tourism industry that have shaped Fortaleza's planning goals (ibid). Fortaleza's physical geography and history also differentiate it from those other cities in that it is centered around the beach, which is a very important factor in its economy, it experienced rapid population growth resulting from severe droughts in the region that generated hundreds of thousands of environmental migrants, and it has not yet grown to the size of those other cities. However, one significant misconception is that size is a factor in informality, which scholars (Garmany 2011) refute. Finally, research on "second and third tier" cities like Fortaleza is essential because as people are outpriced from more expensive cities, they will likely migrate to these relatively smaller ones, as is the case globally. Therefore, efforts need to be focused on how to produce equitable mid-sized cities, rather than creating the next big megacity.

#### *2.4 Social Justice and Activism*

As we evaluate these different governmental policies and the role of planners, we must do so through the lens of social justice if planners hope to achieve meaningful change in how society is constructed and functions today. Therefore, long-term goals must go beyond aspiring to

accessibility and inclusion, but involve greater participation in democratic processes and stronger civil society. While scholars agree that Brazil has set the stage by putting forth the progressive language in policy, the struggle for true participatory planning and full citizenship needs to be continuous (Budny 2007, de Souza 2006, Maricato 2010, Miraftab 2012, Miraftab 2014, Rodrigues 2010). Most important in this struggle is the role of social movements and activism that exist outside the realm of formal state-led planning. The power of state-led planning is in fact, limited. And despite progressive policies and planning interventions such as favela upgrading and social welfare programs, research from Rio de Janeiro suggests that informal residents are more isolated, more marginalized, and more disenfranchised compared to their urban counterparts in the “legitimate” city neighborhoods (Perlman 2006). Income inequality has deepened as the informal resident population has grown and education and social programming are not healing the social fabric because despite having access to better services and infrastructure than their parents and grandparents, people feel less safe, less upwardly mobile, and less politically important (ibid). Part of this political disenfranchisement can be attributed to the actual legal status of informal settlements that creates insecurity (Magalhaes 2015), but despite struggles for land regularization and tenure rights, contradictory research suggests that informal residents do not want formal property rights in order to avoid the burden of property taxes (Perlman 2006). Furthermore, to continue this contradiction of inclusion and exclusion, we must ask the form that the inclusion takes. For Perlman, the informal residents in Rio de Janeiro were very much integrated into the society of the city through political and economic processes, but to their own detriment and exploited for their labor, both as producers and as consumers; they have established social networks but are marginalized in terms of lack of opportunities to jobs and education (Perlman 1979). The urban area uses these residents, but not in their best interests. And measures of quality



of life continue to be evasive as income, purchasing power, material possessions fluctuate and vary across times, geographies, international trade relations, and so on. For example, despite more material possessions, informal residents feel more excluded and feel they have less power and agency than the previous generations, accompanied by the rise in violence, corruption, clientelism, and cronyism (Perlman 2007). One disappointing but key finding achievable only through ethnographic studies is that ideas such as community bonding (internal-internal relationships) do not translate into upward social mobility benefits as those procured through community bridging (external-internal relationships) (Perlman 2007). This finding is further underscored in that the research suggested that despite higher education rates, incomes still remained low for informal resident but, those who exited the informal settlements tended to have better jobs and higher incomes (ibid). In addition to these indicators of social inclusion, we must keep in mind that the physical world is now complemented by the advent and advancement of the Information and Communications Technology as a channel of participation; whether ICT developments will replace, supplement, or expand the need for greater physical accessibility and mobility remains to be explored in the context of democratic participation (Kenyon 2002). Therefore, in a consistently evolving world, planners must also take innovative approaches to reinvent and improve housing policies and practices. Until planners can house truly diverse populations in coexistence, segregation and inequality will continue.

In order to challenge and push state-led planning agents to explore and re-evaluate the effects of their policies, social movements in the form of grassroots bottom-up activism are essential. Insurgent planning challenges normative top-down planning because participatory planning continues to serve the existing power structures (Miraftab 2012). For marginalized and oppressed populations, this does not serve their interests; to them, representative democracy only

pays lip service to participatory planning without truly disrupting any existing power structures or hierarchies. Grassroots organization make and claim cities by working outside of the state system as a direct tool of citizenship building (Miraftab 2014). This is exemplified in the City Statute where no definition nor guidelines were created for participatory planning, and many master plans were prepared by technocratic consultants, which contributed to the fact that many were later challenged in the courts (Rodrigues 2010). Although evictions due to investments in developments were dictated by market-based profitability of the land in question, community activism played an active role in cases where residents were able to maintain their homes and in the formation of campaigns constructed by the Ministry of Cities and National Cities Council organized around territorial inclusion, democratic management, and social justice (ibid). Although tenure regularization instruments, such as providing free property registration (Fernandes 2010), cannot alone affect a paradigmatic change, especially in the lack of services in poorer neighborhoods, they can open up the pathway toward security of land tenure and greater public participation in a system where evictions remain commonplace with the connivance, agreement, or participation of the state (Rodrigues 2010). The election of populist presidential candidate Luiz Inácio Lula de Silva- commonly referred to as simply Lula- could be viewed as the successful mobilization of social movements to pressurize political actors to the social demands of citizens and the written law already reflects this shift as it holds municipalities responsible for regulating urban spaces and mitigating idle land for speculation (Maricato 2010). These social movements are essential to igniting shifts in the paradigm of civil society and modern democracy today. They are the external forces that uphold democracy in practices that might otherwise only achieve tokenist participation. And with changing issues, governmental stances, and new projects, the power of social movements lies in that the mobilization they set forth continues in different forms imprinting their cultural

revolution upon civil society and the state (Castells 2014). Furthermore, while civil society's independence from the state allows it freedom to achieve more radical planning goals aimed at social justice, free from political and economic obligatory ties, it must develop and to an extent, implement concrete resolutions to urban challenges, and eventually work with the state in order to be effective (de souze 2006). This alternative plan approach is not new. In order to provide valid, reputable, and viable alternative solutions to the market, it falls upon civil society to produce those options. In fact, informality itself is viewed as an alternative to the state and market approaches that failed to provide adequate housing and services to the city. Favela upgrading is a prime example of how civil society set in motion the notion of the favela as a legitimate space and the protest against slum-removal policies, in cooperation with international agencies, helped shift the governmental stances on informality. Therefore, researchers agree that while Brazil has been a primary example of civil society grassroots organizing and planning in the land tenure and urbanization movement, organizers need to remain critical and continue efforts both with, against, and in spite of the state in order to maintain social justice as priority in urban reform (de Souza 2006). In the Fortaleza context, this research focuses on how community members organize to build and use power.

### *2.5 Public Transportation*

The focus of this research is public investments in public transportation and their intersection with informal residents of the city of Fortaleza through the lens of social justice. In order to frame this research, the goal is not to simply critique the projects, but to understand them in the wider perspective of transportation planning. To this end, we begin with an overview of recent transportation and urban development projects in South American cities, particularly

Medellin, Bogota, Rio de Janeiro, and Curitiba. Beginning with a review of literature (Bocarejo 2014, “The BRT Standard” 2014, Bradshaw 2014, Cervero 2013, Cervero 2006, Cinquinha 2008, Goodman 2005, Levinson 2003, Lindau 2010, Munoz-Raskin 2010, Rodriguez 2004, Rodriguez 2008) based around the Bus Rapid Transit (BRT) projects in Curitiba and Bogota and the aerial cable car- or metrocable- in Medellin and Rio de Janeiro, provides the context of how transportation planning is shaped and evaluated by its goals and effects. Transportation projects are usually evaluated in terms of costs, ridership, vehicle miles traveled, trips taken, passengers carried, and environmental benefits in air pollution reduced. The metrocable and BRT are evaluated by these same measures. The BRT, popularized as the urban development policy of Curitiba, Brazil upon which the city based its Transit Oriented Development, has been highly acclaimed for its high transit ridership rates, low costs of construction, and speed of implementation (Cervero 2006, Cervero 2013). Its effectivity is accredited for reducing traffic and thereby, air pollution (Goodman 2005). Experts have determined that BRT is a good choice for cities that have met a 1 million population threshold and when the system is built and executed with characteristics similar to that of a metro rail system; it boasts a lower barrier to entry than similar mass transit options as well as lower operating costs while producing similar benefits as metro rail including effects on land use (Levinson 2003). Agencies such as the Institute for Transportation and Development Policy have worked to define, identify “Best Practices”, and set standards from surveys around the world (The BRT Standard 2014), and experts recommend that it is a plausible option for many cities if they follow the Curitiba example, and should be considered for cities in the Global North who may have the economic and political means for more expensive options (Lindau 2010). Furthermore, by integrating BRT with TOD policies, cities can reap even greater benefits from their investments (Levinson 2003). Research from these cities has shown

that this combination of “software”- congestion charges, restrictions on parking, license rotation of vehicles allowed on the road on certain days- and “hardware”- the physical infrastructural and technological upgrades to buses such as off-board fare collection, single-fare tickets, smart technology integration- have more successful transit systems in terms of ridership, vehicle miles traveled, balanced bi-directional flows (Cervero 2006). The body of research also recommends taking examples from Asia in terms of land use integration paired with an emphasis on discouraging private automobile usage (Cervero 2006), in order to make the system in Curitiba more economically, environmentally, and politically sustainable Cinquinha 2008). Based on traditional measurements of success, transit oriented development, implemented in this case through bus rapid transit, produces positive results.

Furthermore, the effects of BRT were also measured in terms of property values. Research and planning practices trend to justify their practices on economical bases. Research (Rodriguez 2004, Munoz-Raskin 2010, Rodriguez 2008, Duarte 2011) supports that access to the bus rapid transit system has a positive effect on property values in relation to distance from the stations, feeder lines, and trunk lines. Although flexibility in route change is a positive characteristic of BRT versus traditional metro rail, it also presents a notion of non-commitment that prevents it from having the concrete effects as those more permanent mass transit forms. Although BRT is perceived to be too flexible to produce direct higher property values, the data portrays that better physical accessibility to BRT stations is associated with higher asking rents for multifamily units indicating that accessibility and proximity to BRT stations is an added value to residential property values as properties gain values with proximity, translating into increased “real income” to the owners (Rodriguez 2004). A significant finding of a later study expanded that while results are mixed, it appears that land that was already more expensive around the existing BRT infrastructure

experienced an appreciation in value through gained local and network access, but the timing is questionable and the results are not consistent; land appreciations might be attributed either to speculative practices rather than at what rate the consumer market actually values the land or to current residents who chose to locate closer to begin with to a BRT station now valued its expanded services even more and are willing to pay more for it (Rodriguez 2008). A more recent study suggests that BRT affects property values depending on both the incomes of residents and the consequential housing markets to which they belong and the distance to BRT stations and routes (Munoz-Raskin 2010). It suggested that lower property values located in the ten-minute catchment areas do not support a theory of causality, but are the result of the political decision to locate BRT in low to middle class areas. To that effect, properties around trunk lines have higher values than those around feeder lines, which are in primarily in low income areas. Properties within five-minutes to feeder lines are more highly valued than those within 10 minutes. Property was 8% cheaper within a ten-minute walk to a BRT trunk station for the low-income housing market, indicating that for this income group, cost savings are worth the longer and/or inconvenient travel. However, low-income properties were valued 7.6% higher in proximity to feeder lines, possibly due to less traffic, pollution, noise, etc. On average, low and middle-income property values were higher in immediate proximity (less than 5 minutes) to the stations while high income housing was 14.9% cheaper in immediate vicinity to trunk lines versus a five to ten-minute walk away. High income properties had a 5% premium for immediate vicinity of feeder lines, probably attributable to the negative externalities aforementioned (Munoz-Raskin 2010). The implementation of Bus Rapid Transit in Bogota, called TransMilenio, affects the values of properties within walking distance to it, tending to middle-class needs, but not completely meeting the needs of the low-income group (Munoz-Raskin 2010). Finally, to complement investments in public transportation,

research has shown that promoting active transportation such as pedestrian infrastructure and programs like Ciclovía, where roadways are temporarily closed off to motorized vehicles to allow only pedestrians and cyclists, not only has positive impacts on the economic, environmental and public health of the surrounding areas, it has positively impacted property values and employment as well (Wright 2004). Countries in the Global South, especially rapidly-growing economies like Brazil, can build on these findings as they decide where and how to invest in public infrastructure and countries in the Global North can use the findings to inform planning decisions in reshaping land-use, real estate, and transit investments as they expand their public transportation networks. As Fortaleza builds upon in its public and active transportation, there is a need to evaluate the social implications of those investments.

Similarly, studies (Bocarejo 2014, Bradshaw 2014, Brand 2011) were undertaken to understand the effects of the metrocable implementation in Medellín and Rio de Janeiro. Three aerial cable car lines were implemented in conjunction with Integrated Urban Projects- (PUI) in the form of attractive stations, libraries, and small business advisement centers to form a drastic visual change in the social and physical landscape of the poorest neighborhood in the city (Brand 2011). Like the BRT, the metrocable was relatively low-cost, implemented with efficiency- again reducing costs, and championed by political will from the mayor's office (Brand 2011). This rapid "urban acupuncture" approach is especially appealing to political figures, like mayors, who have the power to push a very visibly impactful project forward in a short amount of time that allows them to reap the awards in the following elections, a trend later discussed in Fortaleza's political context. It is of little wonder then that, mayors like Jaime Lerner of Curitiba, champion such physical infrastructure improvements (Lerner 2007). In fact, both Bogotá's BRT, Curitiba's BRT system, and Medellín's metrocable system were both implemented incrementally on very short

timelines. However, this does make analyzing impacts more difficult and efficiency can sometimes sacrifice effectivity. For example, in Medellin, Colombia, the studies found that while a reduction in the percentage of income spent on public utilities and transportation and an increase in terms of rents and housing transactions did occur co-incident with the implementation of the aerial cable car and appurtenant improvements, this correlation cannot be determined to be causation due to the multi-faceted “urban acupuncture” package approach taken to reshape the social fabric (Bocarejo 2014). Furthermore, the aerial cable car does not drastically improve mobility for the target informal resident population as it does not accommodate many of their trips, but it does connect people to the metro which caters to the needs of people employed in the formal sector at the central business district (Brand 2011). Similarly, the cable car implemented in Rio de Janeiro’s informal neighborhood of 70,000 residents Complexo do Alemão, the cable car serves only 17% of the population, a number that is less than half of the projected ridership, but has been steadily growing since it first opened (Bradshaw 2014). Two important characteristics of the aerial cable car are that its implementation required minimal land acquisition, and therefore minimal displacements, antagonizing fewer community members and it was a unique resolution catered to the local topographies, almost in an in-situ fashion, of Medellin and Rio de Janeiro. An overview of this literature detailing different transportation investments, their quantitative results, and implementation strategies is necessary as we analyze them in the context of their roles in social changes in terms of equity and justice.

Here, the goals of the two systems portray two different perspectives of the goals of transportation planning- mobility and social change. We begin with an analysis of the metrocable because its implementation had a clear social reform policy that helps establish an understanding of the relationship between the state and informal residents. Research (Urry 2007, Ohnmacht 2009,



Kenyon 2002) has supported that mobility is linked to social inclusion. The metro cable project was specifically oriented with the idea that increasing trip rates would be one way to lower the risks of social exclusion and enhance personal well-being of the informal residents of Medellín's informal neighborhoods or *Comunas* 1 and 2 (Cordoba 2014). Therefore, while ridership remains low, local informal residents in the *comunas* compose 70% of weekday ridership and local residents feel that it improved their lives in the form of easier and shorter commutes, even if it meant taking away from other public investments (Bradshaw 2014). The cable car follows the social urbanism model, the idea drawn from the Barcelona model that through urban interventions and urban acupuncture in the form of highly-visible architectural projects, cities can restructure their urban fabric and identity (Brand 2013). And in fact, although the cable car only serves the informal residents employed in the formal sector, a minority, it has been linked to minor changes in the form of higher incomes as people were able to gain the increased access to opportunities created by the growing national economy, increased economic activity within the communities, and marginal increases in the quality of life (Brand 2013). However, the larger concern is that although it established a sense of inclusion, pride, and belonging as the state "repay the city's historical debt" to the impoverished and disenfranchised areas it had long ignored, the failure to produce material effects has inspired backlash (Brand 2011). These projects were led by capitalist interests, e.g. CitiGroup, and serve as a gateway for the official state to have more access to formerly closed off "no-go" areas of the city, all against the backdrop of neoliberal policies that have tied Latin American cities to globalizing economics, likely to their disadvantage (ibid). Therefore, greater attention must be focused on "material results" in terms of quality of life rather than visual aesthetics; social urbanism and urban acupuncture cannot be standalone projects, but must be part of a larger package of social and economic policies geared to decrease wealth

inequality (ibid). Finally, although housing transactions and rising rents can be a measure of economic activity and development, they are also an indicator of displacement through gentrification and other means, therefore, there is an evident need for a longer-term vision beyond project implementation to control impacts such as rising rent prices in order to mitigate additional inequalities needs to be integrated with these specific targeted interventions (Bocarejo 2014). Here is where planners need to think more critically and decide more discriminately when guiding development in their own respective cities in the footsteps of these “model” places. As these ideas and transportation methods spread to places like Fortaleza, their negative externalities cannot and should not be dismissed.

The spatial allocation of public funds has been increasingly challenged as the effects of uneven distribution become clear through the manifestation of crime, deteriorating public health, and low upward social mobility. Research in Bogota and Medellin supports that investments in physical upgrades such as parks, schools, cycling infrastructure, and other architecture were instrumental in changing the social fabric of these cities. And again, political figures are eager to champion these larger visionary goals, or as Rio de Janeiro’s mayor dubbed them, the “Four Commandments of Cities”: environment, mobility and integration, social integration, and technology (Paes 2012). In the case of rising property values in relation to these investments, experts advise that while capitalization of BRT extensions might take a long time to occur, a follow-up study or a broader accumulation of studies from cities around the world such as Chicago would help clarify certain trends (Rodriguez 2008). The transformation of public spaces in Bogota did change the culture and use of spaces in an attempt to democratize those spaces, but certain segments of the population were clearly disadvantaged, including houseless people and vendors (Berney 2008). One way to work towards expanding spatial democracy, is to control for land

appreciation in order to avoid simply relocating poverty to other parts of the city. By locating existing public transit users closer to BRT improvements while implementing value capture instruments can help municipalities more effectively gain the rewards created by the investments (ibid). Bus Rapid Transit needs to be implemented as an urban formation policy and practice through Transit Oriented Development and affordable housing zones located adjacent to the improvements, as Bogota attempted with its MetroVivienda tool (Cervero 2011, Cervero 2014). One of the main critiques of Curitiba's urban development has been that while BRT and TOD shaped the city's growth along an identified set of axes, it actually resulted in locating the public transit users far from them because the adjacent land values appreciated so much. However, while this would suggest that density is high along the corridors, as it is zoned to be, the reality tells another story. The Bus Rapid Transit runs at capacity, but density along the corridor has not been achieved due to land speculation (Duarte 2011). In fact, Curitiba has one of the highest car ownership rates in Brazil (Cinquinha 2008) and those who live along the BRT corridors with greatest access to the system are among the highest income group with the highest car ownership rates in the city (Duarte 2011). On the other hand, the urban poor who rely on public transportation reside at the periphery with the least accessibility to it. BRT can and should be used as a land development tool (Deng 2011) and as inequality grows in cities like Fortaleza, experts suggest that all public investments in the Global South, and arguably worldwide, must pass the litmus test of being pro-poor and help to alleviate poverty, possible only through better cohesion between governmental departments and stronger political will (Cervero 2014). Centering transportation planning as a key to greater social change requires a more in-depth look into the planning process itself. Transportation planning cannot remain in a privileged and removed state from its social obligations when it plays the instrumental role of choosing to bring people together or drive them

apart. Specializations in planning cannot dominate the field as it drives the burden of social equity planning onto an isolated segment of the planning field, specifically those who work for nonprofits. Social equity needs to be prioritized across all fields.

## *2.6 The Planning Process*

In order to evaluate the urban transportation planning projects ongoing in Fortaleza, background information from other similar successful projects in South America provides context for comparison to derive best practices. Beginning with the tools planners use to understand urban issues and how to overcome them, research (Bocarejo 2012, Cervero 2007, Cervero 2011, Heinrichs 2014) focused on successful methods is invaluable. Beyond measuring quantitative traditional data, more emphasis and value needs to be placed on in-depth qualitative data gathering techniques. For instance, where most transportation data collection focuses on the system itself in terms of ridership, time, costs, and accessibility, researchers call for the development of tools to measure equity, i.e. measure accessibility in terms of time and percentage of income spent upon commuting (Bocarejo 2012). Likewise, new goals and evaluation metrics are needed in order to make social investment decisions more equity-oriented in order to decipher whether mobility investments result in increased opportunities for employment and wages (Cervero 2011). A shift is needed away from prioritizing congestion reduction and economic development towards, for instance, serving the needs of the mobility-impaired; planners need to clearly answer who will the system serve, what is the overarching goal for social change, and who will pay for these investments (ibid). Furthermore, resources dedicated to qualitative data collection, although more time and labor intensive, can reveal subjective experiences to understand user constraints and perceptions to capture the social context of individual behavior that quantitative data would not be

able to, as research from the metro cable in Medellin revealed (Heinrichs 2014). Similarly, the role of external factors such as paratransit, and today Uber, may not be understood without interviews and experiential data collection, misleading planners to perhaps address symptoms of it rather than the causes, e.g. costs, time, travel routes, multi-destination trips (Cervero 2007). Another example details the difficulties of planners, architects, and landscape architects to gain entry to informal communities due to the drug trade (de Souza 2005). More integrated immersive studies can help planners make better holistic decisions rather than quantitative studies that deeply divide the field between transportation and land use; the world is not experienced through a division between these planning concepts and planning needs to match that. This need for greater cohesive “bundled” interventions is echoed throughout both the primary and secondary research findings (Cervero 2011, Urry 2008, Rehan 2011, Rabinovitch 1992, Rabinovitch 1996, Hidalgo 2008). Based on research in Curitiba, social programs to improve health, environmental quality, and social services in combination with the integrated hierarchical bus system allowed Curitiba to raise its living standards (Rabinovitch 1996). Using a multi-faceted approach allowed planners to address problems such as the inability for trash collection trucks to enter the tight road systems of informal neighborhoods and the city’s own lack of funds by “buying trash” that residents collected themselves. This approach also manifested in projects such as using floodplains as parks, transferring building rights to other parts of the city to protect the urban core, and creating mobile classrooms (Rabinovitch 1992, Rabinovitch 1996). By altering their perspective, cities can diverge from monolithic divided planning practices that are costlier and bureaucratic, a problem echoed in Fortaleza. This innovation translated in Curitiba to cohesion between economic development and environmental goals as well because the city leveraged its power to focus on public amenities to support its citizens through social capital investments that provided businesses a stable work force

to rely upon (Rehan 2011). Planners cannot work in a vacuum, but need to rather work comprehensively with a shared set of values towards integrative approaches to economic, environmental, and social components at all levels from the individual to the international by taking action and changing policy and practice. Major cultural shifts do not happen when separate departments attack problems in components, but rather through integrated systematic shifts (Urry 2008). Therefore, as cities attempt to “rebrand” themselves, they cannot ignore or push aside their social problems into certain spaces and hope that their excellence in another planning initiative will overshadow the coexisting insecurities. While the literature addresses these fragmented systems of government and the need for new tools and approaches, more emphasis needs to be given to the causes that continue to produce these divisions and technocracy, an aspect upon which the research in Fortaleza attempts to shed light.

As emphasis on public participation and “bottom-up” community-engagement increases, it is important to understand how political situations influence the roles of planners and civil society. While the Curitiba model is widely acclaimed, especially for the city’s ability to follow the plan through completion, it is important to point out that it was undertaken during a time that Brazil was under military dictatorship, making the top-down process very autocratic and unified (Scruggs 2013). The negative consequences of this approach is that the lack of equity-based goals resulted in a city that only serves the upper classes (ibid). In a democratic system that does not equally represent everyone, but favors private interests, politicians and planners have gained power and, some would argue, even fill that autocratic role. Elected officials play a major role in the success or failure of these projects and planners are left to support their visions through technocratic practices (Hidalgo 2008). A survey on BRT systems in Latin America derived a set of factors conducive to the successful implementation and longevity of transportation innovations

to be leadership and political support, low costs, organized centralized control, and the reputation of the new system (Mejia-Dugand 2013). In order for innovative transportation projects to be successful in cities, they needed to be catered to the local culture and provide high social return, indicating that project implementation needs to go beyond replicating technology and meeting quantitative standards. The transportation innovation cannot be the change in and of itself, but the vehicle to drive the change planners wish to see (ibid). The presentation and language around the public transportation projects in Fortaleza will be evaluated on these grounds as well, whether it is a mobility project or a social change initiative. Projects can be evaluated between two axes-ability to align with the current systems and their impacts on the existing regimes, producing four varying results, the best of which are either the project aligns with the current system and has a high positive impact, or that it is highly incompatible but has a high positive impact, especially with positive externalities due to its innovative character (ibid). This tool will be used to evaluate the public transportation developments currently underway in Fortaleza. Finally, in other cities such as Bogota, key structural changes were implemented to improve the planning process, among them: the mayor's office executed greater independence and enforcements of their vision through multiple levels such as tax reforms with a focus on public transportation and public spaces (Montezuma 2005). This concern is also echoed in the case study of Fortaleza: urban planning initiatives need to be free of part politics and focus on issues to produce tangible results. In this moment of Brazil's shifting status in terms of economic power, research emphasizes that Brazilian cities should take advantage of this spotlight and criticism to institutionalize high levels of community participation in planning as well as take advantage of the technological fetishism to implement advanced technologies (Krassner 2014). Likewise, Fortaleza' growing popularity as a

tourist destination positions it in a strategic place to launch efforts for environmental protection and land rights reform.

## *2.7 Conclusion*

As we explore the planning initiatives and process in Fortaleza, the research will attempt to address the concerns raised here on how to address social inequity in and through transportation planning. The literature leaves much to be examined, including: why does planning tend to be a technocratic process when research and social movements repeatedly demand greater public participation? Are social-justice minded planners discouraged and disempowered and by what means? What is the development process surrounding public transportation projects in Fortaleza, who do they serve and what is their goal? What are the qualitative factors and the effects thereof that quantitative data fails to cover in the Fortaleza context? Fortaleza is a growing city that is at an opportune moment to use its urban infrastructure investments as tools for social change.



## **Chapter 3: Methods**

### *3.1 Introduction*

The primary methods for conducting this research were loosely-structured interviews with residents, community activists, and planners, observations, literature review, spatial analysis through GIS data, and site visits. Through these methods, the aim was to understand the reality of the planning process in Fortaleza. In the context of Brazil's highly praised progressive social policies of land tenure, the research explores the effects of the City Statute upon the planning process in Fortaleza, particularly the public engagement process. The interviews with state planners aimed to understand the formal sector's goals and visions for projects, and the research with activists aimed to comprehend how organizers mobilized to achieve their goals. The participant observations provided an insightful perspective on the influences surrounding social and cultural life in the city, all which contribute to defining planning problems, goals, and actions. The informal conversations and formal interviews help define what the citizens' concerns and needs were and how they defined residents' priorities. Formal in-person interviews were conducted with approximately four professional planners and four affected community members. Participant observations helped identify issues and the severity of certain problems, the degree of which quantitative data fails to emphasize. The immersive experience in group meetings and public forums also helped collect data on the language and framework of community activism that shaped the contemporary social movements. The literature review informed the current project at hand in terms of the overarching themes and direction of the planning field in terms of what issues have been addressed and what needs further examination. The spatial analysis provides local context which may produce unique circumstances that contribute to specific problems and possible

resolutions. These research methods help ground theory in a tangible local context through specific examples and observations.

Other less contemporary research methods were also utilized. One important information source are news articles for the establishment of local context. Current events and activities surrounding the light rail development and other state-led initiatives were tracked through the media, primarily online news sources. Reviewing websites for government agencies also provided information on the projects and information distribution techniques. Informal conversations and immersive experiences in the affected neighborhood provided invaluable and non-substitutable insight.

The interviews with residents and professional planners were conducted in-person. These interviewees were usually connected to the Federal University of Ceará and the professors and researchers there helped connect the researcher to the planners working in Fortaleza. They were usually alumni of the university and agreed to provide insight and be interviewed upon request. The interviews lasted approximately 1.5 to two hours and took place at the agency offices where they worked. The researcher met the affected residents through community forums and public meetings regarding the light rail development project. After the researcher attended many of these meetings, established a familiarity with the residents, and explained the research project, they agreed to be interviewed. The resident interviewees were likely some of the most active members in their respective communities through these meetings. These interviews lasted approximately one hour and were conducted primarily after the preceding community meeting had concluded. The details about community meetings was shared primarily through students and professors from the university or through social media pages, such as Facebook, regarding meetings times, locations, etc. Social media was an essential, and perhaps the most primary tool, for sharing

information. One obstacle identified here was that some residents did not have internet access at home or on their phones and some did not have email addresses either. Here, residents relayed information by phone calls or in-person communication. Therefore, interviews through online tools such as email and Skype are not feasible, again emphasizing the need for planners to conduct first-hand immersive observations of the communities in which they work.

### *3.2 Challenges*

One of the primary challenges was the language. Through the equivalent of two years of Portuguese study, the researcher was able to conduct the research in Portuguese. However, the language barrier did delay initial connections and relationships. The research was conducted through seven total weeks in Fortaleza, Brazil, placing significant time and distance constraints that technology and communications technology cannot overcome as the researcher is located in the United States. In some cases, the research plans were modified due to holidays- the researcher visited during Carnival where many people and agencies take vacation time throughout the month, the weather, and new information received in respect to public safety. Many interviews and general public meetings were delayed, postponed, and canceled. A number of times government representatives were late to scheduled meetings and one scheduled site visit to the informal neighborhood by a liaison between the public sector and the informal residents was canceled because the representative did not show up although community members awaited them. While the lack of punctuality could be attributed to cultural differences, it is important to note that the community members were always punctual, even if the meeting began an hour after the set time. This difference in respect to punctuality and set meetings can be a clear indicator of the value that the respective stakeholders placed on the meetings.

Furthermore, serious safety concerns due to spikes in violent crime related to the drug cartels in the informal communities caused community members to both cancel community meetings and explicitly advise the researcher against visiting the neighborhoods for a number of days. In reflection, tension may have been mounting previously that prevented or deterred community members from engaging the researcher. The researcher was notified of at least one horrific crime that occurred the morning of a scheduled community meeting. This information was not revealed through the local newspaper<sup>7</sup> until later. The community connection let the researcher know the vague details after the canceled meeting, which provided some information into the informal information sharing networks used by the residents. In the absence of direct access to the internet and reliable data network service, word of mouth via phone calls and key nodes in the social network who do have greater technological connections is key to not only information distribution, but essential to public safety. In reflection of the research (Kenyon et al. 2002) on the relationship between technology and mobility, low-cost technology and communications need to be considered in the context of their relationship to public and personal safety as well. Where public information outlets and safety measures may not be adequate and in a world increasingly reliant on capitalist private interests, the need for accessible resources and products for personal purchase and private use must be made available for all markets. Furthermore, even time became a greater limiting factor as some people were not available until the afternoon, but with the sun setting at 6pm, the streets would basically clear out. Potential for being a target to crime became a heightened concern at night. Furthermore, the drug cartels even imposed a curfew in some of the communities in the midst of their territorial turf war. Local

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<sup>7</sup> "Mulher é encontrada morta seminua, queimada e com perfurações no corpo na Aerolândia." *TVDiario*. March 15, 2017. Retrieved from: <http://tvdiario.verdesmares.com.br/noticias/policia/mulher-e-encontrada-morta-seminua-queimada-e-com-perfuracoes-no-corpo-na-aerolandia-1.1720866>

students and residents also advised against bringing valuables when visiting the informal communities. This included laptops, cameras, and phones. Therefore, taking pictures of the subject sites was also an obstacle. Safety played a very strong role in shaping this work.

### *3.3 Scope*

The scope of the project shifted from focusing on Lagamar to including all affected communities. This was changed in order to gain knowledge from beyond the community of Lagamar, which became a more difficult community to gain access to due to heightened crime at the time of the field work. Lagamar was also the site of the tensions between the gangs and violent conflicts, which significantly reduced the number of interviews and visits planned. Interviews were conducted at the location and setting chosen by the participants, almost all of which were outside the community either at the interviewees office or other public space. Some interviews with informal residents was conducted at a site designated as ZEIS but not affected by the light rail development. This was the location of a large meeting for community organizations for coalition building and knowledge sharing. The meeting place was a large church within the ZEIS zone, adjacent to other homes. This underlined the importance for the need for such spaces where academics, organizers, residents, and even formal government representatives could meet. Other possible locations such as public universities are inherently government funded and do carry a cultural value with them that could be exclusionary and uncomfortable to certain populations, namely undereducated, uneducated, or the lower-income groups. This was a direct example of the value that these Special Zones for Social Interest play in the direct practice of democracy.

### *3.4 Interview Structure*

Residents were familiar with and knew each other and wanted to have the interviews together. Therefore, while the interviews were focused on one interviewee at a time, the interviews were not absolutely private. The group met together and sometimes a member would add comments when another individual was being interviewed. While this might have influenced some of the answers given, together with the open-ended and semi-structured format, it deepened the conversation to shed light on the more qualitative lived experiences of the residents. The residents were from various neighborhoods and it took the duration of the researcher's time in Brazil attending all community meetings she was invited to in order to gain the trust of the interviewees. One essential factor to establishing confidence and trust was the reaffirmation of support from professors from the Federal University of Ceará who have continuously worked for the struggles of the residents. Community bonds and interpersonal relationships were very important in this endeavor, an indication of the value that the community residents place on meaningful communications and engagement. Interviews with government representatives were usually held in their own offices, some of which were a bit difficult to reach via public transportation. Again, often other students or coworkers were present. Some questions were not emphasized out of respect to the interviewee as the researcher felt that certain questions made the participants uncomfortable. The government representatives were open with their information, most of it was general factual information about how a department or program was established or executed. A lot of the information shared by all interviewees had already been publicly shared by the participant openly in forums and community meetings. One interesting point was that more often than not, at public meetings, such as community outreach meetings, multiple attendees would record the conversations without objection from any members. This cultural norm of documenting

everything via audio or visual recordings is also reflected in the level of closed circuit security cameras installed on every property. This uncontested practice could be an indicator of a general culture of distrust, both with the establishment and within civil society itself. Finally, another shortcoming of the research is the lack of interviews directly with planners working on the VLT line. This will be later expanded upon as we seek to understand the roles of different planning institutions in Fortaleza and Ceará.

## **Chapter 4: Results**

### *4.1 Introduction*

Research findings attained the various methods will be presented in this section. An introduction to the demographic composition of Fortaleza provide social context. Once established, the next section will attempt to combine the findings from the interviews and observations in order to build upon the body of literature on these extensive topics. Fortaleza's current developments highlight the role of capitalist interests and their roles contributing to and competing with social equity. Interviews regarding current public transportation projects and agencies provide a contextual analytical basis in order to evaluate them in the context of transportation planning in South America as established in the literature review. And finally, the interviews and observations provide insight into the planning process in a city influenced by rapidly changing international and national dynamics.

### *4.2 Spatial Analysis*

The GIS data reaffirms what the literature review established. Wealth is concentrated in the form of income and property values in one area, particularly the Aldeota and Meireles neighborhoods adjacent to the beach and the central business district of Fortaleza. Population however, is much greater in the peripheral areas at highly disproportionate levels. The rest of the city is largely low density, indicating land speculative forces. Furthermore, the informal settlements, form a concentric pattern around the periphery. It would appear that as these informal communities have existed for decades, the city grew past them as land speculation and appreciation induced sprawl. The transportation improvements appear to be concentrated in these areas of relatively high wealth, particularly the westbound metro line. As the wealthier residents are more



likely to own cars and drive, this appears to be an attempt to encourage alternative modes of transportation. However, at the same time, this takes away from public funds that could be invested in public transportation infrastructure or other services that would benefit those in need, and those dependent upon public transportation. Furthermore, the stations planned for the eastbound route are also concerning as they appear to cut off and near a large settlements of informality. The land appreciation and gentrification, in addition to forthcoming direct land expropriation actions need to be addressed. The maps depict income values and land values in Brazilian Reais (\$1 USD is equal to approximately \$3.15 BRL) distributed by neighborhood boundaries.

Direct observations of the formal and informal neighborhoods also showed a difference between auto-oriented and pedestrian-oriented public infrastructure. Where the formal parts of the city included wide streets that prioritized automobiles, the informal settlements were characterized by much narrower streets where only one car could pass at a time. However, setbacks were largely observed and respected as the houses along streets were all built along a uniform boundary. While no sidewalks were available, people used the entire streetway for walking and biking, moving to the side when a car would pass through. This signals a clear confidence and ownership of the road by non-motorized vehicles. In formally planned parts of the city, pedestrians are sequestered off to sidewalks and cars do not slow down for non-motorized traffic without being signaled to. Here, the norm is that people will be walking along the streets and cars must honk for them to move (See Figure 3). Furthermore, in the informal communities, there have been planned public spaces as well in the form of churches, playgrounds, and areas for public assembly. Where “illegal” land occupation may imply that informal residents participate in “land-grabbing” to take all open land available, there is clear planning and respect for these common good entities that serve larger

communal purposes. These communities are not wheels in a capitalist profiteering machine, but spaces where people build their lives and live their lives.

*Figure 3*



Google Street View of a street in Lagamar

Figure 4

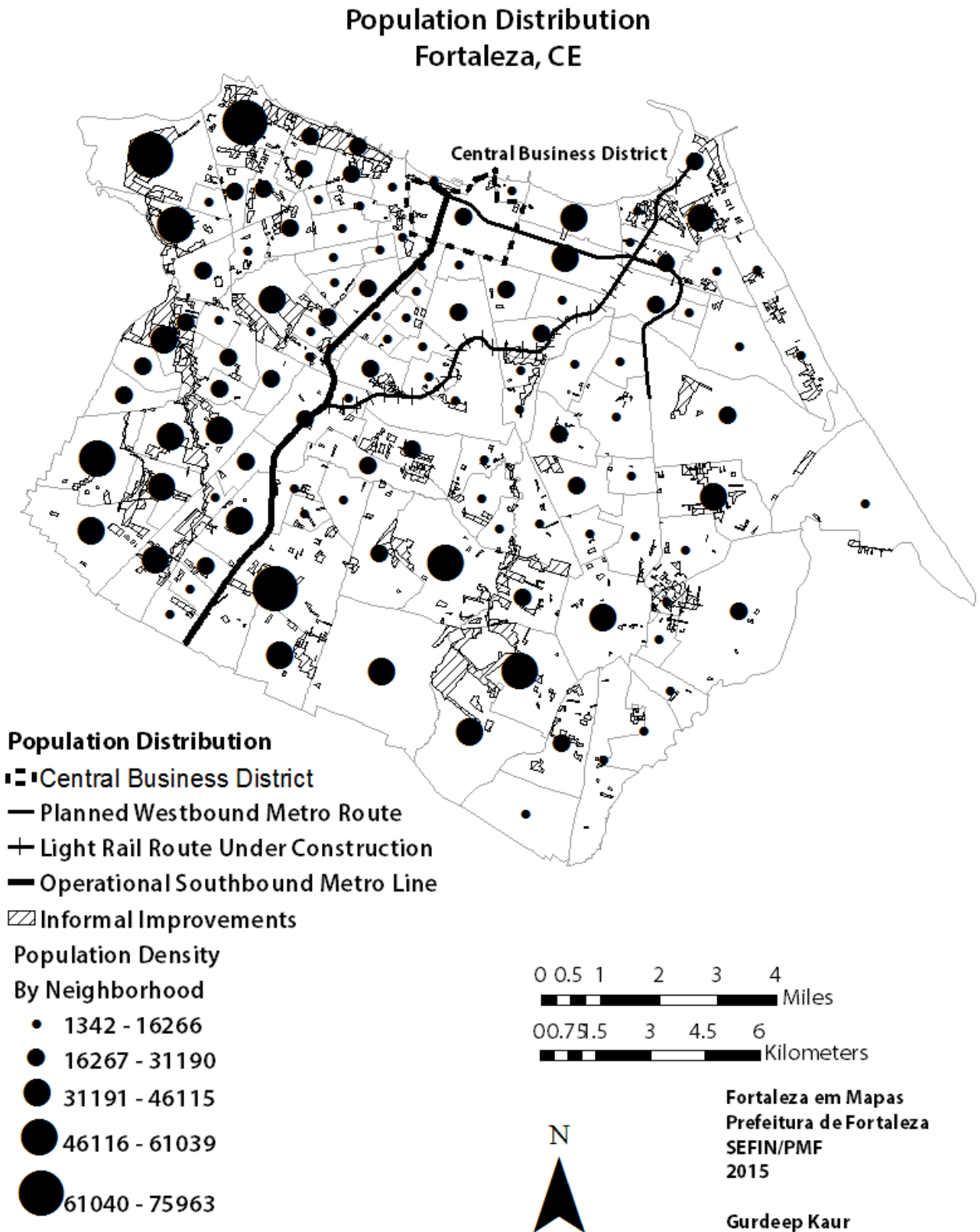


Figure 5

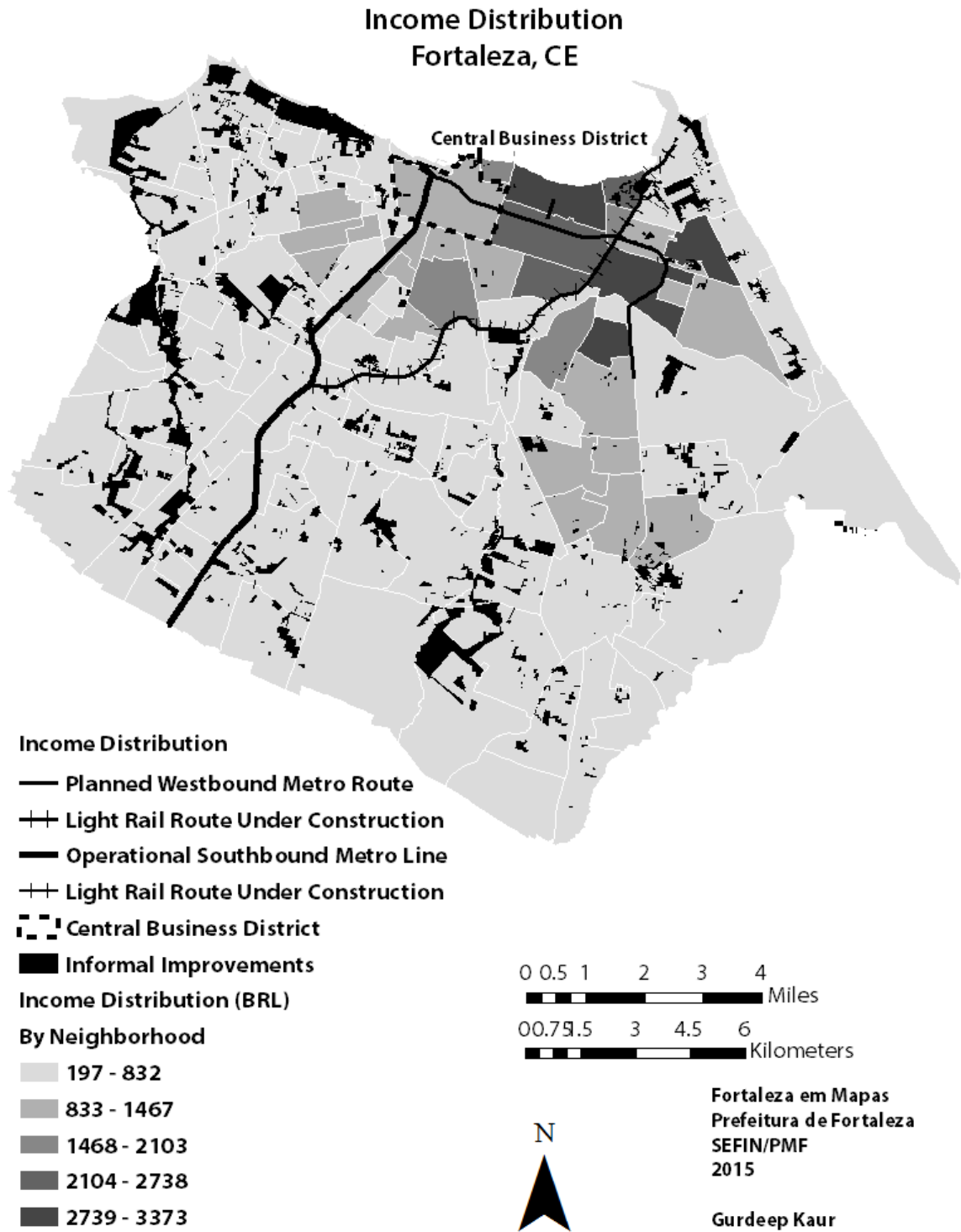


Figure 6

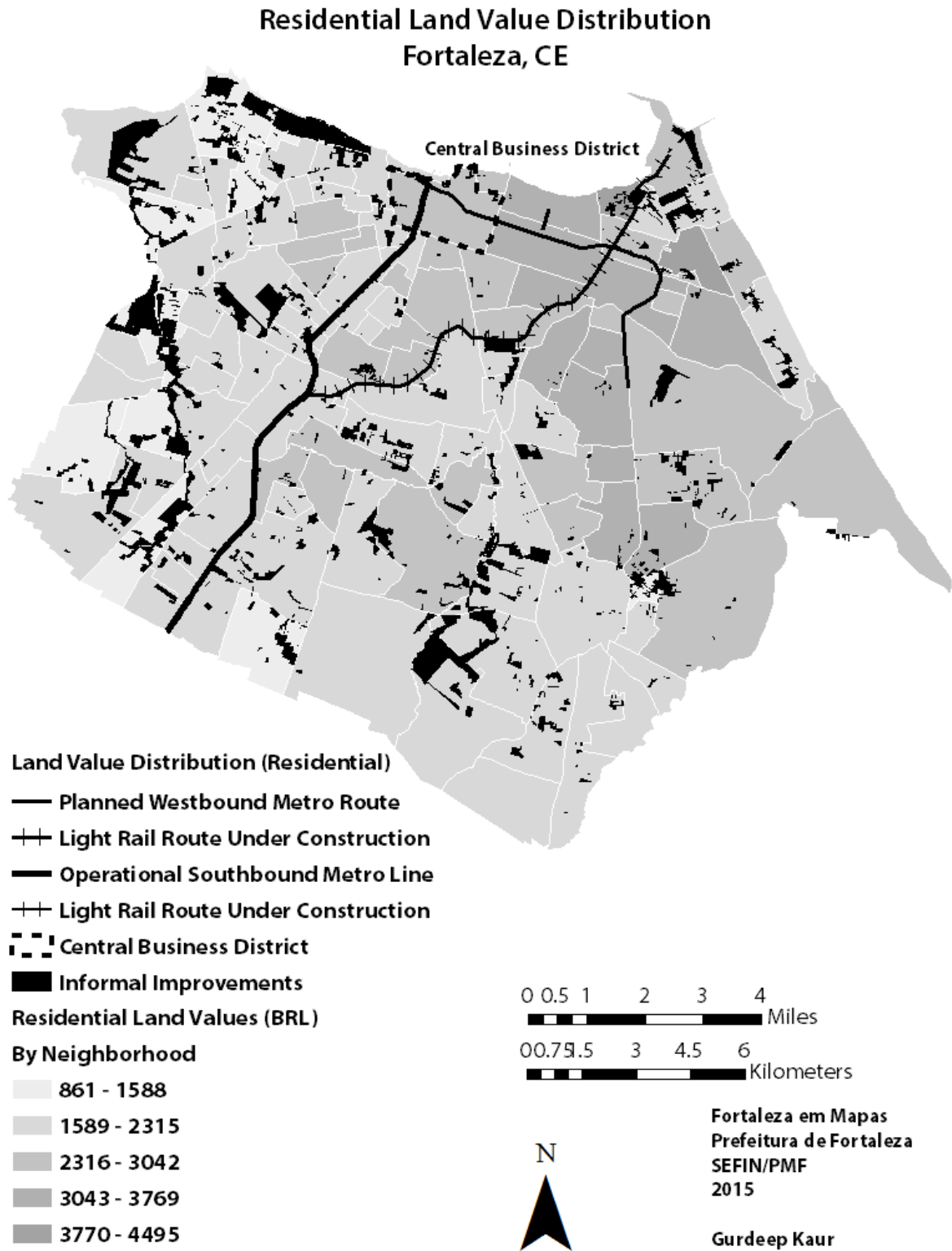
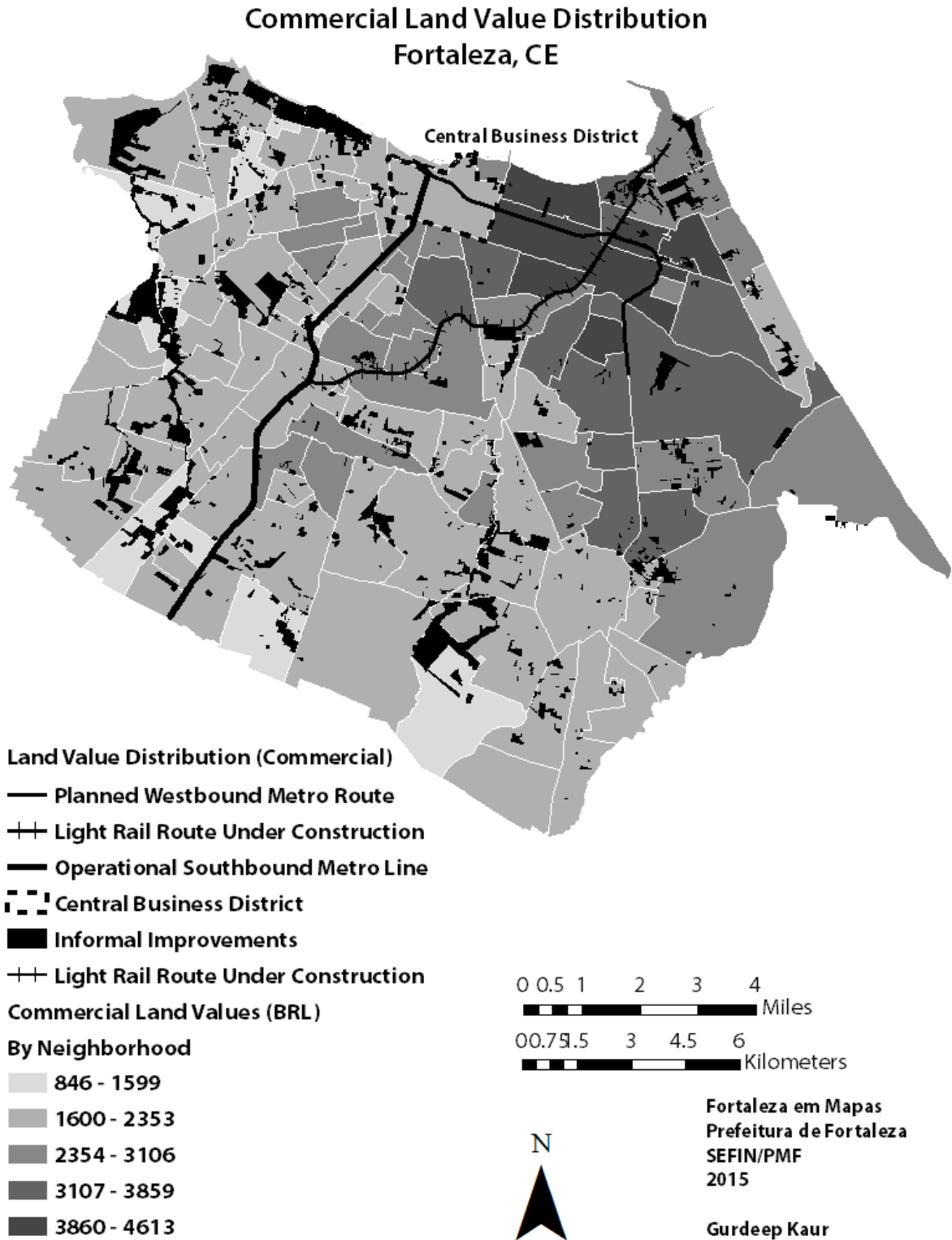


Figure 7



### *4.3 Observations*

Family and housing structure was also a point to note in the informal communities. The interviewees explained that their households included their adult children, their spouses, and their grandchildren. In terms of displacement, this signifies not just the number of people being displaced, but all the social ties and lives that are being disturbed. A site visit to Lagamar reaffirmed that parks, churches, convenience stores, and community organizations providing services such as after-school programs are located within informal communities in spite of the lack of the formal planning regime. Housing types were varied, but most of the houses were no higher than three stories. The rubble from destroyed houses remained. Where it had been cleared out, adjacent properties had repaired their homes to accommodate the new urban design, again maintaining their dignity through the cleanliness and upkeep of their properties. The formal parts of the city are characterized by more high rises, high perimeter walls, and tiled walls. Between formal structures and informal ones, one key difference was building material. The informal housing did not have the tiled walls, which actually provided better ventilation in the hot equatorial region. The housing in the informal settlements was sturdy and permanent, roads were narrow, but paved, and there were no sidewalks. Compared to the formal city, it appeared that sidewalks were seen as an extension of their adjoining private properties as many property owners extended the use of the same materials used in their driveways out to the sidewalk. This resulted in many mismatched materials and uneven paths. Almost all sidewalks were covered in impermeable tiles as well, which appeared to be a status symbol. However, the tile-covered buildings prevented adequate ventilation. It could be argued that the informal houses might be better environmentally suited to the climate if they were planned with more ventilation and building safety measures.

One other notable, and arguably underrated, challenge to planning in Fortaleza is the rainy season. When it rained, the tiled sidewalks became dangerously slippery to walk across. The rainwater that fell was not absorbed, causing massive flooding during the rainy season. In some cases, entire blocks became untraversable and pedestrians needed to reroute and extend their trips. Many people expressed that motorists had no respect for pedestrians, which was clear in that cars zipped through large puddles, often drenching pedestrians. One of the main reasons for the flooding was the lack of an adequate drainage system. However, people did not seem deeply concerned with the flooding, although it causes flooding and traffic congestion due to damaged traffic signals<sup>8</sup>. When interviewing a formal state planner, they did express that sewerage upgrades were planned for the routes along the bus systems. Upgrading drainage and sewerage is a challenge in terms of garnering political will because political figures prefer infrastructure investments with a high visual appeal and value. Underground drainage obstructs traffic and the effects are not experienced until another heavy flooding season. Furthermore, as people felt that the rainy season was very short, characterized by short periods of downpour that “turned the streets into rivers,” but was ultimately only a seasonal issue in Fortaleza, drainage system upgrades are probably not a priority. This is especially concerning as Fortaleza and the greater northeast region of Brazil is characterized by periods of long drought, a condition that is actually directly linked to the urbanization of Fortaleza. It seems wasteful that water conservation instruments are not utilized to take advantage of the rainy season. Furthermore, it is important to note that the lack of adequate drainage does affect the quality of life in the city. It not only causes severe flooding, it produces an overwhelming stench that takes over the city, and causes traffic problems as some

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<sup>8</sup> "Fortaleza registra maior chuva do ano; choveu 110 mm, diz Funceme." *Globo Notícias*. March 9, 2017. Retrieved from: <http://g1.globo.com/ceara/noticia/2017/03/chuva-intensa-causa-alagamentos-e-transtornos-em-bairros-de-fortaleza.html>.



traffic lights have also been damaged in the past. Perhaps most importantly in terms of economics, the lack of drainage and rainwater contaminates the beach waters as the water flow carries all the debris down to the ocean, raising contamination to levels that make it unsafe for bathing. As the beaches are the major attraction in Fortaleza year-round due to its hot climate, it would be economically sensible to invest in drainage in order to protect these assets.

Furthermore, transportation infrastructure in general is auto-oriented, even in a city with a relatively low car ownership rates in Brazil (.21 automobiles per inhabitant). In terms of infrastructure for non-motorized modes of transportation, especially pedestrians, this has clear implications. One of the most notable is the lack of traffic signals for pedestrians. Traffic signals are usually only available for cars, and on one-ways- of which there are many in Fortaleza- the pedestrian sometimes does not even have the signal for cars as an indicator if they are traveling against the flow of traffic. Furthermore, cars turning left or right do not give pedestrians the right of way, forcing pedestrians into dangerous situations. This is especially worrisome for elderly pedestrians who cannot move or react as quickly to dodge traffic. Bicycles also face unpredictable motorized traffic behavior. Automobile drivers tend to drive in the middle of both lanes when available and the lanes designated solely for buses have some allowances for turning vehicles to enter a certain distance ahead of their turn. However, this seems to be abused, and private automobiles hinder the flow of buses in the designated lanes. On top of this, motorcycle and scooter traffic weaves in and out of traffic. As Fortaleza's population grows, the lack of enforcement of safe driving techniques and the lack of infrastructure to organize multimodal traffic will create tremendous traffic congestion problems. Finally, in a city with average annual temperatures ranging between 81 degrees Fahrenheit and 84 degrees Fahrenheit and mostly very sunny days, the city has very few shade-providing trees. While the very tall perimeter wall can

provide some relief, there is little protection from direct sunlight. Interviews with planners working on these specific issues revealed that plans have been developed and certain parts of the city have already received some infrastructure interventions to improve pedestrian walkability.

The bus system in Fortaleza is a reliable and very useful method of transportation in the city. On average, it carries 286,777 passengers a day along approximately 100km of bus-priority routes and beyond. As a user, the buses are convenient and service is frequent. They are the main method of transportation in the city, but their popularity is declining as private automobile ownership is expected to triple by 2040<sup>9</sup>. As expressed in interviews with residents and planners, the main complaints about the bus system was the discomfort inside the buses themselves, not the system as a whole. They were reported to be crowded, unsafe, and uncomfortable. Street vendors selling items like candy and gum and religious advocates are aboard almost every bus. From experience, the bus drivers drive to meet speed and efficiency requirements, often seemingly erratically. Furthermore, crimes often occur at bus stops and even on the buses themselves. During peak hours, they are at capacity. All buses are boarded from the back, with a fare collector who takes payment and allows people through to the front to sit and eventually exit out the front. Buses have a “waiting area” in the back of the bus if the front is too crowded. In this case, passengers simply wait until there is more seating or their stop is near before paying and moving towards the front. This onboard fare collection and waiting area means the bus stops only for a few seconds at each stop until everyone has boarded or exited. On-board fare collection where the bus driver is not also the fare collector and the bus does not need to wait until everyone has paid significantly increases the efficiency of the bus service. Furthermore, buses do not stop at every designated stop. Riders waiting for the bus at a stop must “hail” the bus like a taxi to signal it to stop, if no

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<sup>9</sup> “Frota de veículos em Fortaleza deve triplicar até 2040.” *Diario do Nordeste*. May 9, 2013.

one on the bus has requested a stop. However, if the bus is already stopped at a traffic light and a passenger would like to exit, drivers readily accommodate the request. One major necessity is signage both at the bus stops and on the buses themselves. Only few bus stops have boards that display which buses will be traveling where and stopping at which locations. On board the bus, there is no signage, usually in the form of LED lit-board at the front of the bus that indicates what stop is next in order to inform passengers when to request a stop for exiting. This may not seem necessary for veteran users, but if Fortaleza hopes to convert users, these tools are necessary to help familiarize them with routes and build comfort and confidence to depend primarily on the bus system.

The most telling indicator of the state of the metro system is in the lack of general public knowledge about it. While the metro and the metro stations are well maintained, air conditioned, and overall a much more comfortable ride than the bus, it does not remain a popular mode of transportation. This is likely due to the fact that only one route- southbound- has been fully completed and is in operation. It takes approximately thirty minutes from the first station to the last, and it is a convenient option for residents living at the periphery to commute to the center. However, population density at the periphery is very low. What this could offer is a trajectory for urban growth to follow. The metro has potential to be an urban shaping tool (Cervero 2014).

The rise in private automobile ownership can be attributed to a number of driving factors. Fortaleza is defined by many different measurements as the most violent city in Brazil<sup>10</sup>. People do not hold their cellular phones in their hands as they walk down the street as they do in the US, they do not work on their laptops in pseudo-public spaces like coffee shops, and they do not carry their laptops or valuables with them if they are traveling by public transportation. Students at the

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<sup>10</sup> Calderwood, Imogen. "The 50 most violent cities in the world are revealed, with 21 of them in Brazil... but Venezuela's capital Caracas is named the most deadly." *Daily Mail*. January 27, 2016.

Federal University of Ceará relied mostly on private automobiles to get to and from school, making sure to arrange private transportation especially when they carried valuables with them. Almost every single vehicle had completely tinted windows to where one cannot see inside the vehicle. And in some cases, students relied on Uber, although it is not a legally allowed entity in the city. Fear of petty and armed crime was a daily concern for the city's residents. This was verified by the anecdotal evidence<sup>11</sup> of residents regarding their encounters as victims of robberies and attempted robberies. Therefore, as Brazil's economy grew in the past years, this itself being a driver in private automobile ownership, the wealth gap also grew. And as people bought expensive materials, and especially portable, possessions, their need to secure them became eminent. In order to secure them, the private automobile provides the promise of safety that the public realm cannot provide. As described by residents, in a private car, one can drive to their secured private building, where an automated gate or a gatekeeper will let them in, and then immediately shut the door behind them. This security feature is to prevent any entry by possible robbers during this breach of protection. Crimes during this moment of entry into one's home through the gates in the perimeter walls by suspects on motorcycles seemed to be a popular strategy. The mechanism for protection is to remain in private spaces. The crime and fear appear to indirectly support the private auto industry.

A component of the local context that again no one complained about was the graffiti that covered practically every single wall and surface in the city from university campus to hospitals to shopping malls. This was juxtaposed by a strong effort by the municipality, not to remove the graffiti, but its own branding. The city shield and name could be found everywhere from buses, to traffic signs, parks, construction sites, and private establishments that the city partnered with.

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<sup>11</sup> "Onde Fui Roubado." <http://www.ondefuiroubado.com.br/fortaleza/CE>

These two competing forces appear to reflect the fragmented discourse between state planners and civil society, both strong presences, but working on different platforms, independent of one another.

Another major component of this research was attending various community meetings: discussions between residents and the attorney general, public forums for community organizers led by local university affiliates, and workshops for knowledge and information building and sharing and coalition building among different community members and players. These meetings were time intensive as they lasted anywhere between 3 hours to nine hours and ranged from 10 people to over 80. The university-led community meetings were a great example of expanding the audience for information and concepts through discussions that are usually limited to academic circles. At one meeting regarding historic preservation, scholars highlighted the hegemony inherent in the concept of “inevitability” and reasserted residents’ rights to question and challenge projects deemed as such. The conversations also emphasized language surrounding the right to the city and human dignity. Many of the meetings were focused on issues about land, but attendees represented interests varying from women’s rights to bicycle organizations to artists and musicians. The attendees spoke about their resistance in terms of self-efficacy and activism through various diverse channels. These meetings were essential to understanding the culture of mobilization and grassroots organizing in action in Fortaleza. These meetings did not necessarily revolve around one particular site, project, or issue, but framed these activities in the larger perspectives of capitalism, human rights, and conflict. This established a connection between theoretical concepts, larger phenomena, and real world events and people.

#### 4.4 Interviews with Formal Public Sector Planners

The results of this data reveal many expected and many unexpected findings. First, to clarify, while many different interests- various government levels, nonprofit organizations, international agencies, may collaborate and fund the work of these professional planners, the nature of their work is public-sector. Interviews with the public sector employees provided insight into the data-driven world of planning. The interviews revolved around the plans at hand and their quantitative and qualitative attributes. Interviewees included those that worked directly with active transportation, public transportation, and the relocation services through the Minha Casa Minha Vida program.

The active infrastructure is managed by PAITT (*Plano de Ações Imediatas em Transporte e Trânsito*). Here, it is important to note the development of PAITT as a governmental agency. It began in 2014 as a short-term 1-year project between twelve engineers and architects with the goal of implementing short-term actions to change mobility in Fortaleza. The project's success led to its adoption as a permanent agency, with the support of the Bloomberg Initiative for Global Road Safety<sup>12</sup>, which provide senior-level full time staff for up to five years, technical assistance from global experts, training for police officers, and media campaigns. This is further supported by international agencies including the World Bank- led Global Road Safety Facility, the World Health Organization, EMBARQ, the Global New Car Assessment Program, the Global Road Safety Partnership, the John Hopkins Bloomberg School of Public Health, the National Association of City Transportation Officials, and the Union North America. This is one example of international influences shaping policy and planning in Fortaleza context. And while scholars

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<sup>12</sup> "Bloomberg Philanthropies Selects Ten Cities and Five Countries to Participate in New Phase of the Global Road Safety Initiative." Bloomberg Philanthropies. February 12, 2015. <https://www.bloomberg.org/press/releases/bloomberg-philanthropies-selects-ten-cities-five-countries-participate-new-phase-global-road-safety-initiative/>

(Azuela 2009) prioritize the national contexts and claim that countries like China, Brazil and the US are not as easily influenced in their legal and judiciary realms by international influences, the presence of these global agencies and the values they prioritize, and then support through direct funding, has an undeniable effect on the local culture in terms of its own values and priorities.

PAITT takes a tactical approach in order to have meaningful impact; great emphasis is placed on the initiatives undertaken in the form of concentrated layered improvements such as scramble crosswalks, traffic calming measures paired with pedestrian signals, and bicycle integration, concentrating initial interventions around schools, like the Federal University of Ceará and hospitals. PAITT has conducted data collection and implemented resolutions with an average two and a half months between conceptualization and implementation. The planning agency attributes its success to the dedicated support of the current mayor. This reflects a characteristic found in other successful planning projects in South American cities (Berney 2008, Brand 2011, Montezuma 2005, Wright 2004) of the powerful influence of mayoral support. While the current mayor, Roberto Claudio, seemed to be viewed favorably by formal state planners, informal residents expressed disapproval at his grandiose public works-led initiatives, one form of which were multiple overpasses- or *viaducts*- that disrupted the grid system, dislocated residents, and contributed to auto-oriented culture contradictory to the city's public transportation goals. However, the city is on track to installing 500 kilometers of bicycle infrastructure on a 15-year timeline. In addition to bike lanes and physical road improvements, the city also runs a bike share program and a bike rental program. The bike share program is fully integrated into the bus system in that the same single fare ticket allows you to use the bike share for 2 hours and the bike rentals are completely free and allow rentals for 15 hours. Both are again publicly managed services delivered via private companies. The agency has conducted public hearing for all of their proposed

projects, although they are not required to do so by any state institution, but they are able to due to the funding through the international agencies. According to interviews with planning agencies, the structure of these public forums at which plans are presented are such that community members are notified primarily through social media and the time for public comments is at the same meeting where the project is introduced. One significant finding here was the concern regarding the security of a department or a project. If there is a political shift in the mayor's office, it is probable that current projects might be canceled and entire departments and personnel changed. As many people are contracted employees, these contracts are easily canceled. When asked if certain types of work and departments tended to retain greater permanence, the answer was that the more technocratic-oriented departments have greater security, but others such as the secretariat of culture or tourism do not. This is very important in understanding the culture within the planning departments and the planning process itself. This effect might also translate over into how individual planners prepare themselves for the job market, how they present themselves in the interview process, and the qualities they emphasize throughout their careers, in a word-technocracy. A planner also cited that one major concern was the lack of a comprehensive transportation plan for Fortaleza. The city has a bike plan and the new municipal plan has a transportation component, but they still lack a mobility plan, potentially preventing infrastructure upgrades and policies from delivering the maximum impacts possible.

In terms of public transportation, the city is on track to upgrade technology and infrastructure for its extensive bus system. The buses are operated by private companies managed by the municipality. They are obligated to upgrade 12.5% of their fleet every year, and the average age of their buses is 4 years old. This regulation allows the city to implement technological upgrades such as air conditioning and GPS tracking in all the buses. The buses are run by the



public agency, ETUFOR. All buses are now equipped with GPS devices and the agency receives real time data on the locations of each bus compared to their schedules. The buses themselves are privately owned by different companies. As with most public bus systems in South America (Cervero 2007), the bus system in Fortaleza evolved from a variety of routes served by private companies. The ETUFOR agency regulates and manages the entire system, and auctioned off the operation of each route to private companies. This public-private partnership model is an interesting concept with both positive and negative results. On one hand, it allows the public sector to focus on management and system-wide planning, freeing up funds that would be spent on drivers, buses, and maintenance. On the other hand, this means relinquishing power and reducing regulations on items such as safety features. However, through greater mandated driver safety courses and benchmarks, these goals can be better achieved. This organization strategy however does produce another less apparent negative externality, and that is that bus drivers and other affiliated employees for private companies may not receive as much pay or benefits as those of governmental employees, which might have an overall negative impact on social and economic development. One of the achievements of the bus system is an integrated single fare system that allows riders to pay one fare regardless of distance and make transfers for free within a 2-hour time frame at any of the seven bus terminals, which are equipped with Wi-Fi and monitors to provide real-time updates on arrivals and departures. However, this is a disadvantage to those riders whose trips may be more efficient if they made their transfer at another point, not inside a terminal. The agency is still improving and expanding, and evaluating services through a massive data collection “command center” as well as through surveys with users. The research and plans were made possible through funding from the Inter-American Development Bank (IDB). This may be a driving force behind the strict measurements for ensuring just relocation of displaced

citizens resulting from ETUFOR projects. There is emphasis placed upon public hearings. The agency contacts the elected representative from the subject neighborhoods who then arranges a convenient time, usually in the evenings, for these public hearings. The agency has had an institutional history of engaging public participation, now strongly encouraged by the mayor. The ETUFOR agency refers to the support of the current mayor as a driving force for the progress they have made towards their goals in the last few years. ETUFOR is a long-standing institution that enjoys greater autonomy due to its unique structure and composition. It is worthwhile to note, however, that like PAITT, ETUFOR also began as a temporary working group led by the mayor's goal to implement an integrated transportation system. ETUFOR is a mobility-oriented agency with numerical standards and goals to meet. They work with the Minha Casa Minha Vida program in their projects that disrupt current land uses and cause displacement for relocation services.

Public meetings, newspaper articles, and an interview with one of the head planners that works on the Minha Casa Minha Vida policy further reveals the bureaucratic fragmentation of the planning process in Fortaleza. Coupled with the public's general distrust and accusations of corruption, this inherent inefficiency is highly suspect. Attending public meetings between various agencies and departments, and interviewing a representative from the Federal Savings Bank- or *Caixa Econômica Federal* (CEF) who is assigned to the State Government as the Housing Coordinator provided a better understanding of the Minha Casa Minha Vida program in Fortaleza. Currently in Fortaleza, studies have indicated the need for 120 thousand houses through MCMV but only 30 thousand will fit the program's criteria to qualify, which is expected to reduce the program's bureaucracy. The MCMV program is an avenue for providing housing to the people in need, but the system is clearly overwhelmed with demand at the moment to produce any tangible results. The state views the VLT and metro as vehicles to serve residents to commute to and from

work. However, due to lack of resources, planned projects are currently on hold. The long delays between the planning and approval phase and implementation raises questions about the longevity and sustainability of those planned developments over time under changing conditions. The census data is conducted by the IBGE every four years and housing demand shifts greatly in that time. Between the 2010 data and the 2016 estimate, Fortaleza's population has grown by an estimated 159,531 inhabitants, or 6.5%. This lack of consistent resources also means that projects are often reclassified and reassigned to other departments or that a lack of cohesion between different government functions prevents efficiency and effectivity. Initially, only funding directed for the light rail project was initially approved as part of the first federal Growth Acceleration Program under President Lula. However, the local circumstances of informal settlements and their dislocation resulted in a need for greater funding in order to relocate the inhabitants. The federal government then assigned this portion of the project as a Minha Casa Minha Vida program. It would appear that the federal government did not have the full scope of the local knowledge necessary to accurately assess the circumstances.

Currently in Fortaleza, Minha Casa Minha Vida plans to deliver 120,000 housing units under 16 various projects. Of those, 4,976 are on track to be delivered in June in the Cidade Jardim project located on the periphery. Half of the units have already been constructed. This project was overseen by the state government. However, the work had halted and negotiations are underway for the rest of the units. One part of the Cidade Jardim project and another Alameda das Palmeiras project was overseen by the municipality. Another 3,000-unit project, José Euclides, is expected to be done in May in two stages. It is important to note that these new housing units constructed by the state are not housing people without homes, but rather relocating people living in what the government deems- precarious situations, whether that be hazardous locations or other

criteria. Currently, approximately 100,000 families are on the City Hall's registrar awaiting housing through this program. Two of the biggest challenges is determining who is in need and how to relocate people. The Public Ministry, or *Ministerio Publico do Estado do Ceará*, representing the public's interest, in the relocation process suggested that communities remain together in the site to which they are relocated. However, the municipality feels that the "fairest" way to relocate them is by a lottery system, in which communities cannot remain together but each individual's fate is decided one at a time. The state's method for relocation is in large groups and they have the ability to relocate entire communities together to maintain neighborhood solidarity and bonds. These differences are a clear example of the structure of government planning in Fortaleza. Relocation appears to be handled by the agency that is in charge of the project that is inducing the need for expropriation. The negotiations are then handled by the Attorney General or *Procuradoria-Geral do Estado do Ceará* (PGE). At the front-end, residents negotiate directly with the PGE. Once the PGE has completed the longest part of the process, negotiating with residents regarding compensation, the residents are directed to the MCMV agency to handle the next steps in the process. There is often confusion for residents regarding who builds, since that decides not only which agency will handle their relocation, but the processes and results can be drastically varies. The confusion is amplified by overlaps when, for example, although transportation is overseen by the state government, an overpass might be constructed by the local municipality. As noted previously, the federal government allocated funding for the light rail project. Usually, when federal government provides resources for a project, this usually means a potential budget for the architectural and engineering projects to include a budget for the necessary public surveys and follow-up review surveys. However, the interviewed planner working with

Minha Casa Minha Vida was doubtful that the light rail project had the benefit of such built-in provisions.

Questions of social equity are embedded into every part of not only planning, but construction, finance, and operation. In the MCMV program for instance, the government needed to redefine how the MCMV policy defined “family” in order to redesign who qualified for the housing. Previously, “family” consisted of two or more people in a situation of dependency (financial), but now it can also serve single individuals. Priority is still given to families of two or more people. In the case of unmarried young applicants, the direction given was to not serve this population as it ran the risk of double counting and giving two dependents two separate houses. If they married, one could be used for profiteering, taking away from another family in need. However, with elderly people, the program grants more flexibility as the likelihood for this situation was smaller. However, this selection process is now being reevaluated as the government recognizes that it is an individual’s right to be single *and* have housing under the MCMV program. This had caused houseless people to protest when they were denied due to these reasons as the understanding is that the reasons for the houseless population are different from those of informal residents. Houseless individuals live on the streets due to not the housing shortage in the city, but to reasons such as lack of ability to pay rent, family problems, previously family discrimination against homosexuality. This was the population for whom the definition of “family” as defined by MCMV qualifications was most problematic. This definition disadvantages the young and single inhabitants of the city, which potentially damages their capacity in terms of opportunities for work to earn an income, thus increasing the risk of able-bodied young people to become lifelong dependents on social welfare. And although the definition has since changed, clearly practice has not. It is however, gradually shifting in that direction.

When asked about ways in which to improve the planning process, the suggestion was made that the municipality could take steps to reduce fraud. For example, data collection through partnerships with the universities and research institutions such as the Institute of Research and Economic Strategy- or *Instituto de Pesquisa e Estratégia Econômica do Ceará* (IPECE). Non-profit organizations such as the João Pinheiro Foundation works to conduct updated research to fill in the four-year gaps in the IBGE research, but they also work with already collected data. The role of the Secretariat of Cities is to preferably think and formulate public development policies, before entering into execution. Improving this research can make a more certain policy, to be able to serve those in true need.

#### *4.5 Interviews with Residents*

Conversations with community members affected by the light rail development project revealed insights into the planning process in action. The researcher met most of the interviewees through a series of community forums. At these community meetings, it is important to note that the majority of community representatives were usually women. Unsurprisingly then, the members of the affected informal communities that agreed to be interviewed were also all women who were highly active in the struggle to resist displacement and gain more just terms for relocation. They were all between the ages of 49 and 60 years old, all had children, most had grandchildren, and most were single parents. And at this stage in their lives they were helping raise their grandchildren. However, their age and independence from domestic duties is a very important factor in their ability to have the time to engage in democracy.

The results reveal that the public participation process as reported by the interviewed informal residents was deeply wanting. Some of the residents reported that the first time they

learned about the light rail development was when they were issued eviction notices for their homes. Other responded that the first time they learned about it was when government workers came to their communities and took pictures of their homes and the general area and started taking measurements of their homes. This was reportedly conducted without advance notice, without informing the community in any way, and without consent of the residents. This coincides with the planning process behind this light rail project as explained by another interviewee who is a professional planner, but not directly involved with the specific project in question. The light rail line had been an old plan that had been put on filed away as a future possibility. With the 2014 FIFA World Cup, the federal government issued a request for infrastructure projects that they would fund to complete ahead of the upcoming games. The plan was thus proposed and gained funding from the federal government. Therefore, despite having the plan already prepared for an extensive amount of time and securing funds, the government appears to have failed to inform the affected community. One resident also indicated that prior to this project, government representatives never visited the informal communities, they are not a familiar sight, with the chance exception of election years. This is a clear indication of the lack of government interest and engagement in the community, juxtaposed with an authoritarian approach upon entry. Furthermore, residents indicated that they denied government officials from entering their homes to take pictures, but some neighbors did allow them inside their homes. They also cited intimidation as a strategy tried by the workers to gain entry into homes that resisted, referencing their status as government representatives as giving them the power to enter. This is a clear breach between working together with a community versus using power dynamics against them.

Unsurprisingly, location played an important role in the community's concerns. All the residents interviewed regarding the characteristics of their neighborhoods cited the proximity to

services and work as a major benefit. The residents cited that they either walked to their destinations or took the bus. Their children who had more regular schedules were reported to use the bus more regularly, depending upon it as primary mode of transportation. The most popular mode of transportation cited was walking, with participants indicating that most of their destinations for work, social, and leisure are reached by short walks of five to fifteen minutes or bus rides of twenty to forty minutes, with some family relations up to an hour away. The fact that supermarkets, banks, and social relations were all within a short five to fifteen-minute walks indicates the close ties within the community as well as the walkability of the neighborhoods, an element that planners are trying to manufacture in cities around the world to diverge from auto-oriented and sprawl culture. However, where it has been produced organically through the self-help initiative of civil society building their own homes informally, the state-led planning institute is attempting to destroy it. If proximity to services and walkable neighborhoods are an indicator of quality of life, then these should be included in the value assessment of the subject properties, perhaps through a regression analysis, especially if the state refuses to pay the value of the actual land as they claim it is still state-owned. The fact that the majority of residents expressed an overall satisfaction with the location of their homes indicates that they are located in adequate and coveted places, which the state might have capitalistic motivations for vacating.

Community members also mentioned that churches, parks, and even primary schools were also located within the informal communities. One important characteristic that harkens back to Janice Perlman's research in *The Myth of Marginality* is the varied and diverse socio economic groups that belonged to the informal communities. Informality is absolutely not equated to poverty. One resident mentioned that in her community, residents belonged to income group classes A, B, and C- which by Brazil's economic stratification indicate the highest income brackets. Average



gross monthly income is defined by the Brazilian Institute for Geography and Statistics<sup>13</sup> as follows:

Class A: above BRL 15,760

Class B: above BRL 7,880

Class C: above BRL 3,152

Class D: above BRL 1.576

Class E: below BRL 1.576

The interviews also revealed that government employees also resided in informal communities, which firstly, poses a juxtaposition between the formal income earnings and the informal method of wealth accumulation by saving on housing. Secondly. This could indicate that the formal public sector does not pay their employees enough to afford housing in Fortaleza or at least housing that is as convenient. Furthermore, some communities were better off than others as a whole as well. Interviews revealed that one informal community lacked basic services; the interviewee from this community was also a renter instead of owner of the occupied property. This brings up a very different component to the complexity of land rights and the citizens' rights that are increasingly tied to wealth. The rental tenant relayed her experiences with an abusive landlord as part of the struggles against eviction. Her experiences reveal the speculative practices and power of capital at play in the informal communities, just as they are active in the formally planned areas of the city. The landlord did not live in the subject community but in a wealthier area of the city and was possibly part of a political family. He was able to first extract wealth through the occupation of the land, then through the rents he charged his tenants, and then again with the upcoming land

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<sup>13</sup> Nes, Egil Fujikawa. "Social Classes in Brazil." *The Brazil Business*. January 26, 2016. Retrieved from: <http://thebrazilbusiness.com/article/social-classes-in-brazil-1453802521>.

expropriation as the state would have to compensate for his property loss in relation to the project. The landlord wants to evict his tenants in order to turn the property over to the state and gain the monetary compensation. The tenant is now in judicial proceedings fighting against paying rent given the impending eviction and more favorable relocation terms. This is a clear difference in how land is assigned value- property for wealth extraction vs. a home as the site of social reproduction.

The interviews revealed that the light rail development has disrupted local economic activities and has directly resulted in income loss. Most of the women interviewed did not indicate a spouse or partner. This can imply that they have relied on their own self-efficacy and labor to earn income with the means of capital to which they have access; and were probably parents of single-income households. From observations, it was not uncommon for households to run some sort of income-earning activity out of a room in their house regardless of whether they were in a “legitimate” neighborhood or an informal one. A few of the women discussed how they worked from home, for instance, as tailors and seamstresses. They had invested money in machinery that they were no longer able to use due to the disruptive construction. This loss of income is not compensated for in relocation negotiations. These income earning activities are also not included when planning to relocate these residents into Minha Casa Minha Vida apartments, which are assigned based on household size. This poses an interesting dilemma as self-sufficient residents are not only losing their homes, but their employment as well. Therefore, as housing values are assessed and regression analyses can assign different values to seemingly intangible characteristics such as air quality, tools such as regression analyses need to also be able to assess the value of proximity to certain services, not necessarily a central location, but perhaps a bundle of services within a certain area. Most residents, even those at the periphery, emphasized that all of their

needs were well-served in close proximity to their homes. A comprehensive land use study is needed to understand the true functions of the property that is being seized through this regulatory land taking process. However, one issue with such an analysis is the informal undocumented nature itself. Businesses such as convenience stores, tailors, or daycares are part of the informal neighborhoods as the buildings are not used solely for residence. Residents earning their livelihoods from businesses ran out of their homes might be done so without formal registration or business licensing. This makes not only documentation of their existence difficult, but further compensating for the value they add to their communities. Reformative tax measures and incentivized business licensing can be implemented to more accurately document land uses to produce more informed decision-making. This is further complicated by the fact that registration might be counter-intuitive to certain businesses as income is not readily reported in order to evade taxes, which further reduce the real income of business owners. This is an area in the literature that needs to be developed further through quantitative studies.

The language that the interviewees used engaged more ethical concerns as well as the tangible ones relating to challenges and disparities in social justice and equity. Interviewees pointed to dignity as a strongpoint in their struggle, feeling that the state's actions and behavior had threatened and violated their dignity by neglecting to notify and engage them in a proper participatory process. This issue of dignity was again brought up at a community forum where residents complained that construction workers on the light rail line were disrespectful towards the residents and derogatory towards their informal status. As they discussed the state's actions in the removal of houses in their neighborhoods with the advancement of the project, they described how the demolished houses were left in rubble. The reason for not clearing the rubble as they worked was to prevent new settlers from locating to the land. Residents felt emotionally affected by this

demoralizing spectacle of seeing their neighbors' homes demolished and having to navigate this on a daily basis (See Figure 7). The trash left behind by the construction and the lack of adequate trash collection was often brought up at almost all community forums and meetings. One resident mentioned that there were only 6 trash receptacles for the approximately 14,000 residents in Lagamar (See Figure 8). The residents had resided in the current locations for decades, some been active participants in the upgrading urbanization of their neighborhoods in the late 1980s and early 1990s. This translated into community pride and stewardship, again these are values that planners hope to instill into residents through design but here are being degraded where they already exist. In the interviews, the participants not only discussed dignity as it related to their interpersonal interactions, but as it related to the physical construction of their future homes as well. They expressed hopes for dignified homes that were comfortable and well located. A resident was concerned because she heard the private company contracted to construct the houses through the Minha Casa Minha Vida program was using subpar and second-hand building materials, and almost everyone expressed agreement that corruption was a fact of life in the process of Brazilian government. Someone expressed that neighbors suffered mentally, falling sick and into despair and depression when they were blindsided with the eviction notices and more than one person compared the light rail development and consequent destruction of homes to a war zone, like "Syria," as if a "bomb" had fallen on the community. The residents clearly felt they were under attack from their own government.

It is important to note that the interviewees were probably among the most active in their communities and in the struggle as a whole. Therefore, their discussions on the topic were developed as they had to repeat their stances at various meetings and to different audiences. They had been posed with different challenges, and their discussion did appear to be refined. For

instance, residents clarified that they were not fighting against the improvement of the city nor against the light rail itself, but against the manner in which the process was being orchestrated and against the displacements. The residents felt that the government was not compassionate, accusing them of lacking a sense of humanity in the way they carried this out. At the same time, they felt that the public sector officials and the government were in the best position to help them in their struggle. This striking display of optimism made it clear that these residents are not radical antagonists questioning the entire system, but ones who, again as Perlman found, believed in a future and in hopes of social mobility. Their activism still hoped to win over the state to their side, not to completely reorganize the capitalist system. And perhaps most significant in this research, was that while the land takings were deeply personal and posed a threat to their way of life as they knew it for decades, it was the lack of security in a future plan that was, understandably, just as disconcerting to the residents. Planners must think beyond the segments of their own projects at hand and ask questions of their roles in the more holistic and general perspective of the society.

Similarly, interviewees also discussed how this disrupted their future plans and they wanted more security and stability. For example, as these ladies were nearing retirement age, they discussed the established lives of their adult-aged children, which were all strongly tied to the city and their current locations, especially in relation to their proximity to employment. This property is where these residents physically built their homes, raised their children into adulthood, and had personal invested history. After decades of living in their homes, one interviewee expressed that once the bureaucratic process was complete, she hoped to leave her children the secured property to continue their lives in the city while she and her husband moved back to their original rural towns. Property is an irrefutable foundation for future security and stability. Monetary compensation and even seemingly just relocation will not be able to account for the emotional

values that the residents invest in and withdraw from their communities. The social capital and memories cannot be diminished nor rebuilt quickly nor easily. It is important to note that the interviewees mentioned that a maximum of three negotiations were allowed in order to agree upon a compensatory sum. This implies the lack of an option to remain in place. Monetary compensation is viewed as a solution although it cannot account for attributes such as social capital, network, and emotional value embedded in a place.

*Figure 8*



Google Street View: Here the remains of a demolished structure have been cleared out, but fragments remain

Figure 9



Google Street View: Trash receptacle surrounded by litter indicates that residents might have resorted to piling trash around the bin after it became full

#### *4.6 Interviews with Researchers*

Throughout this work, one of the most prominent voices was that of the academic institutions such as the Federal University of Ceará- or *Universidade Federal do Ceará* (UFC). Professors and students were present at almost all community events and played leading roles in their organization and execution. An interview with one of the urban planning professors and leading researchers of the Laboratory of Housing Studies, or *Laboratório de Estudos da Habitação* (LEHAB) reaffirmed many of the protests voiced by the residents affected by the light rail development. Having worked closely with the residents in the Lagamar community and

throughout the duration of this proposed project, he found that the light rail development was unnecessary with no positive benefits. There was no transit demand study conducted, as indicated by the route chosen for the light rail line. It would appear that given the urgency to produce a complete plan in order to be eligible for the federal funding, perhaps the proposed route is not grounded in strong research in terms of the public transportation needs and habits of Fortaleza's citizens. Instead, a route that is already existing was undertaken to be repurposed. Possibly, this was more an attempt to improve the city's image with this global pressure for all urban areas to be "global cities," a prerequisite of which is often a "modern" and highly technological mass transit system. The professor expressed that the light rail served more as a land appreciation tool than as an adequate urban mobility one, especially as it foresees the removal of low-income residents but does not plan for their relocation in a form of true social cleansing. He also noted that companies that were constructing the light rail made gains through seizing the empty land resulting from the process, upon which future residential developments will likely be built. Private companies also gained profits by building the state-contracted projects of the Minha Casa Minha Vida policy and managing it as a business. He too foresees no prospects for the completion of the work as he has seen previous similar projects such as the BRT, VLT, overpass, and roundabout construction projects that were previously with poor planning. However, the state has a direct interest in facilitating these projects. He reflected what many other city residents had also expressed, that these projects provided opportunity for corruption schemes as their execution are seen as means of guaranteed over-payments made to political parties and figures, completely disregarding any pertinent problems. His experience further reiterates the thread of technocracy woven throughout these findings. Often when he participates in debates about large projects, it is common that the assessment of the people affected about the need for the work is as misplaced as possible. The



technician who carried out the impact study was ignorant of the removal of families and the destruction of public facilities such as daycare centers, since governments favor private interests at the detriment of the communities. A resident had expressed the underestimation of the social costs of such projects as well. For the light rail construction, the government had estimated the removal of 96 houses at the onset, but that number grew to 140 in 2017. Erroneous predicting and reporting need to be documented and cataloged as a component of any database assembled to measure land expropriations.

A multi-part system between the state, the market, and civil society (including academic research) help counterbalance each other. Therefore, to question and mitigate the negative externalities of state-led public developments, LEHAB was developed in 2011 as a collaborative multi-city effort to mitigate the damages of Minha Casa Minha Vida. Resources were acquired through the Ford Foundation to study the right to the city and the application of the instruments of the City Statute. The three subject cities are São Paulo, Rio de Janeiro, and Fortaleza. Between 2014 and 2016, the Ford Foundation allotted additional funding to LEHAB in Fortaleza to study two specific projects in greater details, of which one was the light rail project. From this, the research was developed that informed the literature previously reviewed here regarding the relocation of informal residents to the periphery, or the suburbanization of informality. In regards to the planning process and urban planning practice in Fortaleza, it appears that the multi-faceted urban policy approach has been replaced by the practice of large urban intervention with large projects that will predominate over policy and planning practices, or social urbanism as discussed before. The projects take the form of large housing projects on the periphery and mobility projects to connect them to the center. The light rail project here focuses on the seventeen<sup>14</sup> directly

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<sup>14</sup> This number has also been reported to be twenty-two

affected informal communities, ignoring the general data on the number of informal developments in total, thus reducing the importance of policies that seek to develop the quality of life and housing in informal settlements. It is simpler and easier to adopt programs to build housing center to receive the residents, an approach reminiscent of the 1960s public housing approach in the US. Here it is important to emphasize that the urban planning process be participatory and decentralized, throughout the different scales, and not simply advised by the municipality and dominated by the private sector. From his experiences participating as a representative of the university, he witnessed the most vulnerable parties have little voice against the phenomenon of the capitalist process, which does not contribute to convey urban politics. The interviewee was adamant that the abuses that occurred at those meetings against the interest of the communities were criminal, and yet they occur in the visible public arena, in environments of grand corruptions- a circus without a disguise.

This advocacy for greater participation prompted the researcher to ask a question that had created awkward situations, risking disrespect. The question had been left out of many interviews. When asked about whether any of the professional planners has resided in informal communities, it became clear early on that none of the professional planners had ever lived in informal communities. Although the professor emphasized the need to recognize that informality exists throughout the city, he lived in one of the most expensive neighborhoods in the city, one empty undeveloped block away from informal settlements. Affirmative action policy programs to bridge this gap between the planner and the community do exist. For example, the Community Practices program is composed of groups of twelve students from different academic areas working in the same area of the city, a prerequisite of which is that they must live in the subject precarious settlements in question. Some architectural colleges include in their principles to work on social

issues of the city and serve populations that do not have access to architectural professionals. And most recently with the quota program for college admission, half of all available spaces can be offered to students from public school with incomes below three minimum salaries. This initiative is aimed to bring the university to become more representative of the public composition of the city. He expressed that it was once common for all students in his classes to reside in only one of four neighborhoods of the total 120 in Fortaleza, but now they have become more representative of the other neighborhoods and smaller neighboring cities. This affirmative action approach can be connected to the entire urban planning process.

## **Chapter 5: Analysis & Recommendations**

### *5.1 Summary of Findings*

This work attempted to understand and analyze the public transportation investments in Fortaleza through the lens of social justice and citizen participation. By meeting with planners and affected residents, it explored how transportation planning decisions are made and if they truly serve the residents most drastically affected by them. From the interviews, it would appear that the light rail transit development is causing more harm than good. It displaces people to construct a system that was not developed through adequate public participation and input. Twenty-two communities are being physically torn apart as homes are being demolished. The lack of planning for relocation has dire implications for the futures of these residents. The ensuing instability the project has caused impacts the communities without adequately addressing problems such as social capital and neighborhood resilience. The proposed project appears to fail the pro-poor litmus test. This and other public transportation investments are not combined with land use planning to mitigate potential negative externalities such as gentrification. This work establishes that this top-down process, without adequate democratic and just citizen control exists due to a few key gaps inherent in the planning process.

From this research, five key components contribute to adequate justice in the transportation planning process in Fortaleza, Brazil. First, governmental fragmentation and lack of collaboration across departments and levels of government have created vulnerability to political changes. This vulnerability produces a lack of continuity and stability in planning projects across time due to the whimsy of the political atmosphere at a given time. For this reason, political forces reign supreme to the detriment of those most vulnerable and politically disenfranchised members of society. Second, there is a lack of institutionalized practices to uphold regularity in decision-making.

While certain methods of public engagement such as outreach meetings for comments might exist, there exists a lack of expectancy fostered by the lack of systematic tools and measurements for participation. The lack of routine and regularity in participation in public decision-making contributed to the failure to create socially just public transportation investments. In order to support these efforts, public budgets need to allocate funds specifically public participation and engagement. The lack of funding is often blamed for poor project planning, including in the case of this light rail line. In the case with the active transportation upgrades such as bicycle infrastructure, the PAITT agency emphasized their community engagement practices. This could be tied to the fact that they are funded by a third party nonprofit agency instead of solely by public funds. This funding allows agencies to take the necessary but sometimes neglected step of public engagement. Following this same line of thought, professional planners also seem to be dedicated to technocratic quantitative planning techniques. The interviews revealed a heavy reliance on quantitative measures rather than qualitative data collection. While quantitative data is important, planners seemed to indicate that this was caused by the monetary compensation tied to “hard skills” such as GIS. This does not mean that quantitative data is superior, but the inherent bias that it is results in greater monetary gains for those that possess those skills. By rewarding only hard skills and thereby ignoring soft skills such as communication and cultural contextual knowledge, planning reaffirms standing measures. Finally, the research revealed a clear discrepancy in the professional planning field itself. One question in the interviews asked professional planners whether they had ever resided in informal settlements. It quickly became clear that this question caused offense and was dropped from successive interviews. The fact that transportation planners and governmental officials who initiate and implement these plans and policies are not themselves being affected by them is a clear indication of a gap in the field. This exists all over the world

where historically disenfranchised peoples are kept out of the decision-making process. Universities tend to largely enroll middle-class privileged students who later take on these roles. While many students worked on research projects focused in informal settlements, none of them had ever lived in an informal settlement. These findings indicate certain places in the field of planning that can be improved in order to promote greater democracy in the planning process. It is these inherent flaws within the system that continue to overlook and recreate power inequalities and injustice that we must work to amend.

### *5.2 Implications*

This research has produced five key implications for the planning process:

1. Different governmental agencies and levels of government need to work more collaboratively for less governmental fragmentation and more cohesion to withstand political volatility.
2. Public sector planners need to establish institutionalized systems and methods of public outreach and engagement and hold all projects accountable to meet those standards.
3. Local governments need to allocate funds in their budgets for public participation measures to place a tangible emphasis in the promotion of public engagement and social justice beyond using them as nominal entities.
4. Planners need to study and value cultural context qualitatively to gain more accurate understandings unattainable through quantitative data.
5. Current planners need to actively work to engage more planners from underrepresented backgrounds.

### *5.3 Governmental Cohesion*

Based on the literature and interviews with formal professional planners, the planning process and governmental projects in general would be more efficient and effective if departments and agencies functioned more closely together. The most prominent example of not only a missed opportunity, but also the negative consequences resulting from a lack of cohesion is the light rail development project itself. The plan focused only on the physical infrastructural construction of the light rail. It did not take into consideration the existing conditions or land uses that involved the informal settlements. And whether the planners conducted a site survey and transportation studies either at the onset of the initial plans or the implementation is irrelevant as the plans did not reflect an actionable agenda for the informal settlements. As many of the residents expressed, relocation plans and housing units should have been constructed prior to the removal of the residents, not as a reactionary move. Now the project has been initiated, money has been invested, it did not meet the deadline, and the future for both it and the residents is whimsical. This insecurity has negative effects on the stability and confidence that residents employ in every decision they make. This lack of a concrete plan, literally not having the apartments ready to which the residents are being forced to, is detrimental on multiple levels. The government loses resources as it now has to put one project on hold and initiate a completely new project and spend resources that it previously did not expect to. Furthermore, the project itself was not planned in conjunction with land use or economic development strategies. No transit-oriented-development strategies or proximate affordable housing was planned together with the project. And upon observational data and interviews, no plans included potential for employment or business opportunities for the relocated residents. As discussed previously, many of the residents are self-employed workers

who rely on their own labor for subsistence and the new relocation sites do not detail any potential for them to continue or adapt their work. This lack of comprehensive analysis of the entire situation and consequent planning for it reflects the single-track focus of the planning process. As the interview with the local professor highlighted, this project is a large standalone physical infrastructure installation lacking an effective multi-faceted policy approach to address social issues. Not only does the government miss an opportunity to create a development-guiding project, it further created problems that it now has to spend already-insufficient funds to attempt to resolve. And to further amplify the problem, with the peripheral locations of the public housing, the government is actively producing more problems of sprawl, employment-housing mismatch, and social exclusion.

Based on interviews with planners, internal processes could also be more streamlined and efficient with greater interdepartmental collaboration. The interviewees emphasized that the planning process could be improved if departments were able to converge views and objectives. This would not only combine efforts towards common goals, but resources in the form of talent, skills, perspective, and even potentially resources. Greater cohesion would also save government spending as projects could be implemented with multi-layered intentions, not only simultaneously making progress on multiple fronts, but also saving on resources through the consolidation of project timelines. For instance, the bus routes planned to be implemented together with drainage upgrades is a prime example of this cohesive approach. This would mitigate traffic closures and impediments as well as construction costs. This multifaceted approach needs to be extended into bundled services of transportation, housing, and employment through a combination of policy and physical interventions. The planners and researchers all referred to the Fortaleza 2040 plan, indicating its guiding role in future projects. It reflects the motivation for synchronization between



departments and goals. And perhaps most importantly, the political will of the current mayor, Roberto Claudio, to support and implement this plan is instrumental to its success, as indicated both by the literature reviewed and the interviews conducted. Planners indicated that previously, changes in political parties and administrations often resulted in the cancelation, abandonment, and even reversal of initiatives. This strong mayoral support behind a document encompassing the multiple aspects of the municipality has the potential to overcome this institutional volatility. Through collaboration, departments can withstand political uncertainty. Planners and government officials themselves need to demand greater cohesion of their departments and leaders need to demand more productive results and efficiency. Lack of resources can actually be a positive that forces people to become more innovative and practical.

#### *5.4 Institutionalizing Participation*

Furthermore, with fluctuating economic, political, and social forces, governments, especially state and local governments, need to institutionalize public participation into their planning process. The federal government in Brazil has historically had a significant amount of power. However, the blame for the problems of the light rail development cannot all be cast upon the federal government. In order to increase their resiliency against uncertainties beyond their limits, local and state governments can build stability through consistency in processes. By incorporating participation regulations and tools and employing them throughout all projects, from the public or private sector, governments can increase institutional capacity and expand the democratic process. Furthermore, the interviews revealed the temporary nature under which certain departments were formed and later gained permanence. These project-based departments reflect the fragmented nature of the governmental structure as a whole. Clearer and more

consistent division of responsibilities and tasks could help achieve more efficiency and stability. It is also important to underline that both ETUFOR and PAITT were initially founded through funding from international agencies; the Inter-American Development Bank played a role in the founding of both organizations. This rests a great deal of responsibility and dependency of basic public planning practices upon these organizations, that are nonprofit, but ultimately also do not have a direct civic duty or obligation to the residents of Fortaleza.

With so many different stakeholders and forces at play, it makes the need for a strong process ever more imperative. Most importantly, if all departments, and projects, are held to the same standards in terms of the process of project implementation: data based in quantitative and qualitative on-site studies, public outreach, and approval, this would help create consistency within the government. By dividing these tasks and normalizing a universal process, projects can be expected to have similar outcomes, regardless of the agency or level of government conducting them. For instance, this could help mitigate the inconsistencies between relocation practices and results between state-led and municipality-led projects. If all projects, regardless of their agency or sector, are held to the same strict standards, inconsistencies that diverge from the formal process can be more readily identified and litigated appropriately. By building this process into the system and most importantly, enforcing it, civil society gains power in knowing what to expect. Therefore, if civil society is empowered to hold their planning agencies accountable to a process, conflicting political parties can no longer hold the same degree of overruling authority to sway projects and even departments. This means that governmental departments and agencies gain independence through the civil society and work to serve them more effectively, instead of catering to political figures. A stable process can expand democracy by educating and familiarizing civil society with it. Without a process, the public is left with insecurities and guesswork, never knowing what to

expect from anyone. This insecurity and neglect of their rights to be informed citizens allows for the abuse of power. Therefore, this insecurity in civil society is translated into insecurity in the government. Without a strong and active public, governmental agencies lose independence as well. Therefore, it is in the best interest of governmental officials and workers to incorporate public outreach and create a culture of expectation around a consistently enforced planning process. It is therefore in the best interest of government entities to establish support democratizing practices of participation.

### *5.5 Tangible Actions to Promote Participation and Social Justice*

Goals and values outlined in policy often remain unfulfilled without actionable plans, benchmarks, and accountability measures built into them, all which need to be tied to budgetary allocations. Standards and benchmarks need to be included as prerequisites before any planning proposal, public or private, goes before discretionary hearings for approval. These benchmarks need to be met and held equivalent in importance to other proposed benefits generated by the project, such as economic growth. Here, pro-poor planning needs to be prioritized if any progress is to be made towards healing social injustices inherent in the planning process. Just as environmental standards have been created and mitigation approaches have been invented to offset negative externalities such as noise and particle pollution generated from entities such as manufacturing plants, social justice and equity principles need to become standardized. This in itself can be a development strategy. Just as an entire industry is now based in environmental sustainability, regulations can fuel creativity and innovation. As Sassen (1996) suggests, the hegemonic assumption of economic growth to be beneficial eventually to all factions of the population is dangerous. These modern-day trickle down economics can no longer guide planning

decisions. Whether these tangible accountability measures come in the form of full-time job opportunities created for low-skilled labor, number of dollars attributed directly to local public schools, or some other form, it is now more important than ever to not only count the number of projected government revenue, but to explicitly tie that revenue to policies that help the lowest income classes.

Planners and academics need to be critical that public participation is not reduced to little more than nominal value. This “buzz word” is not enough to protect the most vulnerable in civil society, those without as much access to democracy as wealthier, more educated, or better connected counterparts. In contrast, a “trickle-up” perspective should be adopted, where practices and policies that will directly help and be of the most benefit to the most disadvantaged members of society will indirectly help those already better off. This is an amplification Harvey’s argument, “The basic structure is just throughout when the advantages of the more fortunate promote the well-being of the less fortunate” (Harvey 2010). For instance, improving education access to disadvantaged children can lead to an overall more educated population, that contributes to not only the regional appeal of a location to firms seeking a skilled labor supply but can translate into more entrepreneurship and self-employment contributing to a more resilient local economy. Whatever planning decisions are taken, they need to meet the pro-poor litmus test (Cervero 2014).

### *5.6 Qualitative Studies of Cultural Context*

As the literature reviewed emphasizes, immersive field research in the form of qualitative data collection offers deeper and broader understandings of social context and behavior that quantitative data may ignore or misinterpret. One of the most striking cultural shocks was the level and stress of violent crime in Fortaleza. Even without the quantitative data regarding the

crime rates in the city, the general attitudes and actions of people conveyed a lack of confidence in security and safety. And while the quantitative data provides statistics and even locations of crime, it was upon living in the city that the researcher gained an understanding of the mental and emotional stresses of the state of circumstances. The brutal murder and abuse of the woman in the news report previously discussed occurred on the same day that the researcher was planning to attend a community meeting. The body was discovered by police one kilometer, or roughly a seven-minute walk from the meeting place. The violence in the complete debasement of dignity for human life characterized by the event cannot be quantified. It can only be contextualized in the larger drug trade and devaluation of women's lives, exemplified by analogous new stories<sup>15</sup>. Residents are then caught in between demanding greater attention from the media and decision-makers for their problems and contributing to the negative stigma of their neighborhoods by doing so. The mental effects of these appalling crimes happening in such close proximity dictate social and interpersonal behavior. The curfew imposed by the drug cartels only adds to the fact that people already feel unsafe after sunset and avoid going out. If the government continues to operate in a fragmented fashion with technocratic approaches, a transportation study could produce misleading information about transportation demand at night. Without understanding why transportation demand might decrease after a certain hour, planning decisions might be made that are inaccurate or inadequate and unfounded. These problems are interconnected and relevant to one another, and any proposed resolutions must also be multi-faceted and implemented holistically. Without focusing resources to study the larger problems, planning becomes fragmented as transportation planners dismiss themselves from safety issues beyond mobility or landscape architects ignore the environments beyond the boundaries they design.

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<sup>15</sup> Domonske Camila. "Brazilian Soccer Star, Convicted In Ex-Girlfriend's Murder, Returns To The Sport." the two-way. National Public Radio. March 14, 2017.

Moreover, local contexts can vary drastically from national narratives. In discussing the history of one community foundation in the informal neighborhood, a community leader detailed how it was originally founded and financially supported for decades by international donors. However, due to Brazil's rising economic status in the global arena, interest dwindled as donors shifted their focus to places on the African continent they perceived to be more in need. This power of perception and image portrays how these "brand-making" actions can have negative effects, especially on those already in disadvantaged circumstances. While literacy and basic services have improved,<sup>16</sup> interviewees did not feel that these improvements conveyed the whole story or reflected their life circumstances. Other residents discussed how the recent drastic and rapid development of the middle class in Brazil actually amplified the exclusion and desolation of the very poor. Where before there was a large rich-poor gap and high poverty rate, the rich were more compelled to aid those in need. However, residents expressed that the entrance of people into the middle class was accompanied by a growing apathy and preferred inclination to maintain this new status quo of inequality that separated the very poor from the middle class and thereby protected their new status. This supports that the "rising tide will lift all boats" might actually mean that the weakest to begin with are broken apart in the process.

### *5.7 Representation Matters*

In order to expand planning to actively engage the public and work towards social justice can only expand beyond tokenism to achieve citizen control if the decision makers are part of the community themselves. As Arnstein's Ladder of Civil Participation explains, this is achieved

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<sup>16</sup> "Cidades." Instituto Brasileiro de Geografia e Estatística. Retrieved from: [http://cidades.ibge.gov.br/painel/educacao.php?lang=\\_EN&codmun=230440&search=ceara|fortaleza|inphographics:-schools-teachers-and-enrollments-by-grade](http://cidades.ibge.gov.br/painel/educacao.php?lang=_EN&codmun=230440&search=ceara|fortaleza|inphographics:-schools-teachers-and-enrollments-by-grade).

when “have-nots achieve the majority of decision making seats” (Arnstein 1969). This means that in order to have citizen control, planning staff need to be from low-income backgrounds themselves. As the interviews revealed, professional planners have not lived in informal settlements, and this poses a barrier to truly understanding and to an extent, having a vested interest in planning goals and projects to meet social equity goals. Just as certain planning programs in the United States make concerted efforts through events and programs to increase diversity, such as that at the University of Southern California’s Diversity in Planning seminars and programs at the University of Illinois such as ASPIRE, universities in Brazil need to increase their efforts geared towards this initiative. This confronts and challenges current planning staff to reevaluate and even relinquish their own power. Whereas bringing students and new planners into the professional field that resemble the ethnic and socioeconomic backgrounds of current professional planners reinforces their own agency, making an effort to make space for those that do not resemble the status quo can pose a threat to the identity of those planners. However, without planners actively recruiting people who represent vulnerable populations and have the interests of those populations as a personal priority into the professional field, any participation or social equity goals will fall short of true social equity goals. Therefore, the planning process begins long before any project proposal comes forth. It begins with college admissions and recruitment into planning departments at universities.

Furthermore, academic bodies such as researchers, professors, and students are often the radical voices who challenge hegemonic systems. They are able to do this only if they can maintain their independence and security through protections such as freedom of speech on public campuses and tenure. Without tenure, public education professors lose one of the fundamental protections they have against questioning the state. University campuses such as the University of California

Berkeley are historic landmark epicenters for political and social movements. Part of the reason that these movements can develop and evolve from academic settings is because these public universities are allowed some autonomy from the market. When funding is cut to certain academic departments or protective measures such as tenure, this directly limits the freedoms the knowledgeable and educated professional figures who can inform and support social changes by serving as a resource. Protecting the independence of public universities by supporting funding to professors and academic departments that specialize in social sciences and humanities that fuel the drive for greater social awareness and social equity are essential to stronger civil societies.

Furthermore, planners themselves need stronger representation in all levels of government. As the interviews revealed, technocracy is rewarded. Students are motivated to learn “hard skills” based on data such as GIS, AutoCAD, and quantitative analyses methods because they will add value to their resumes and provide more job opportunities. In the same way, students are incentivized to pursue degrees and careers in science, technology, engineering, and math. The planners at both the entry level and in leadership roles in the agencies interviewed all had engineering or finance-related backgrounds. If cities value public engagement and participation, they need to assign monetary value to those pursuits by rewarding “soft skills” such as communication and ethnic studies. In a world and system where everything is capitalized, it appears that our moral values need also to be assigned monetary values to hold any ground. Just as paying lip service to the importance and enriching value provided by environmental conservation was not enough and has evolved and made significant strides through tax incentives, carbon cap and trade policies, and the advent of profitable industries through technological advances such as hybrid vehicles, solar panels, and the declining profitability of coal, it appears that in order for ethics and values to hold weight, they must be monetized. In this same way, while



communities can claim to value participation and representation of multicultural perspectives, certain cities in California, e.g. Bellflower, CA, actually pay employees an annual bonus if they can pass language fluency tests for languages other than English that are represented among large amounts of the population in their respective communities, e.g. Spanish or Vietnamese. Likewise, if employees in Santa Fe Springs, CA successfully complete a physical fitness test, they are also awarded with monetary compensation. Following this train of thought, in order to ensure that participatory practices are upheld, monetary compensation needs to reward planners that implement comprehensive public engagement. Likewise, fields such as engineering and finance do need to place greater emphasis on ethics and social equity instead of allowing them to cast those values off as “not their job.” Striving towards social equity and justice cannot be pigeon-holed to one department or one figurehead position to avoid legal disputes, but must be an overarching goal for municipalities as a whole.

## **Chapter 6: Conclusion**

The community organizing activities carry on the struggle for a socially equitable democracy. The social movements in “invent space” are arguably even a more direct form of democracy than the public participatory actions that take place in “invited space.” However, it needs to be recognized that these movements are connected to a general atmosphere of insecurity that forces people to react and struggle for their rights. In this way, the more economically well-off factions of the population who are comfortable do not feel the need to be socially active as they are what Zukin would describe as “pacified by cappuccino” (Zukin 1995). This could now arguably characterize the middle class that has emerged in Brazil, a population that might subscribe to hegemonic beliefs of the supreme power of market forces even at the cost of human dignity.

While someone could argue that this attention to informal settlements and providing the residents with “legitimate” housing is long overdue, this argument is invalid. The informal communities have existed for decades, some up to fifty years. The window for effective, meaningful, and just government intervention has passed. It is now a case directly of “slum removal” and displacement. The government is using its power to expropriate valuable land under the guise of development and aid, forcing people to move against their will out of functioning living communities. By basically herding these neighborhoods into tall apartment complexes, they are in fact, clearing the land for profiteering developers. This relocation at the the cost of the government and informal residents creates a direct opportunity for the private sector to develop the subject land and its surrounding environs. This land will appreciate in value due not only to the incoming light rail, but due to the removed stigma surrounding the informal neighborhood in terms of drug activity, poverty, and crime. This results in a direct transfer of real income to the private sector interests at the cost of tax-payers and informal residents. A more critical perspective would question whether

this route was not chosen in spite of the thousands of informal settlements, but *because* of them. Perhaps this is a modern day slum-removal project under the thin guise of a public transportation upgrading project.

Therefore, as public investments increasingly support private interests, these decisions must be challenged through all available channels. In an increasingly globalized world that produces local effects, it is necessary for each and every individual to be an active participant in democracy. Land speculative practices that profit off vacancy and underdevelopment cannot also be allowed to profit off “under-participation” in democratic processes. Therefore, grassroots movements must use these same globalizing forces to organize on a larger scale (Harvey 2008). In the planning field, the process must be more democratized if planners hope to make progress towards social equity and justice.

## References

- "Bloomberg Philanthropies Selects Ten Cities and Five Countries to Participate in New Phase of the Global Road Safety Initiative." Bloomberg Philanthropies. February 12, 2015. <https://www.bloomberg.org/press/releases/bloomberg-philanthropies-selects-ten-cities-five-countries-participate-new-phase-global-road-safety-initiative/>
- "Fortaleza registra maior chuva do ano; choveu 110 mm, diz Funceme." Globo Notícias. March 9, 2017. Retrieved from: <http://g1.globo.com/ceara/noticia/2017/03/chuva-intensa-causa-alagamentos-e-transtornos-em-bairros-de-fortaleza.html>.
- Freitas, Clarissa Sampaio and Pequeno, Luis Renato Bezerra. "Produção Habitacional na Região Metropolitana de Fortaleza na década de 2000: Avanços e Retrocessos." *Revista Brasileira de Estudos Urbanos e Regionais*, [S.l.], v. 17, n. 1, p. 45, abr. 2015. ISSN 2317-1529. Accessible from: <<http://rbeur.anpur.org.br/rbeur/article/view/4843>>. Acesso em: April 27 2015. doi: <http://dx.doi.org/10.22296/2317-1529.2015v17n1p45>. Translated version: "Freitas, Clarissa Sampaio and Pequeno, Luis Renato. "Housing Provision in Fortaleza during the 2000s: Progress and Setbacks."
- "Mulher é encontrada morta seminua, queimada e com perfurações no corpo na Aerolândia." TVDiário. March 15, 2017. Retrieved from: <http://tvdiario.verdesmares.com.br/noticias/policia/mulher-e-encontrada-morta-seminua-queimada-e-com-perfuracoes-no-corpo-na-aerolandia-1.1720866>
- "Mulher é encontrada morta seminua, queimada e com perfurações no corpo na Aerolândia." TVDiário. March 15, 2017. Retrieved from: <http://tvdiario.verdesmares.com.br/noticias/policia/mulher-e-encontrada-morta-seminua-queimada-e-com-perfuracoes-no-corpo-na-aerolandia-1.1720866>
- "Onde Fui Roubado." <http://www.ondefuiroubado.com.br/fortaleza/CE>
- "The BRT Standard." The Institute for Transportation and Development Policy. 2014.
- "Frota de veículos em Fortaleza deve triplicar até 2040." Diário do Nordeste. May 9, 2013.
- AlSayyad, Nezar. *Urban Informality: Transnational Perspectives from the Middle East, Latin America, and South Asia*. Lexington Books, 2004.
- Arantes, P. "Urban adjustment: World Bank and IDB policies for cities." *Urban Developments in Brazil and Portugal*, Valença et al., (Eds.), Vol. 1. Nova Science Publishers, 2012, New York, NY: (pp. 25–34).
- Arnstein, Sherry R. "A ladder of citizen participation." *Journal of the American Institute of planners* 35.4 (1969): 216-224.
- Azuela, Antonio, and Carlos Herrera-Martín. "Taking land around the world: international trends in expropriation for urban and infrastructure projects." *Urban Land Markets*. Springer Netherlands, 2009. 337-362.
- Berney, Rachel Eloise. *The Pedagogical City: How Bogota, Colombia, Is Reshaping the Role of Public Space*. ProQuest, 2008.
- Bocarejo S, Juan Pablo, and Daniel Ricardo Oviedo H. "Transport accessibility and social inequities: a tool for identification of mobility needs and evaluation of transport investments." *Journal of Transport Geography* 24 (2012): 142-154.
- Bocarejo, Juan Pablo, et al. "An innovative transit system and its impact on low income users: the case of the Metrocable in Medellín." *Journal of Transport Geography* 39 (2014): 49-61.
- Bradshaw, Amanda. "Cable Car is Still a Source of Controversy." Rioonwatch. Translated from: Viva Favela. 3 January 2014.

- Brand, Peter & Dávila, Julio D. "Mobility Innovation at the Urban Margins." *City* 15:6 (2011) : 647-661.
- Brand, Peter. "Governing Inequality in the South Through the Barcelona Model: "Social Urbanism" in Medellín, Colombia." *Interrogating Urban Crisis: Governance, Contestation, Critique*, 9-11 September, De Montfort University, Leicester, United Kingdom (2013).
- Budny, Daniel Nogueira. "Democracy and the city: Assessing urban policy in Brazil." *Urban Briefs* (2007).
- Calderwood, Imogen. "The 50 most violent cities in the world are revealed, with 21 of them in Brazil... but Venezuela's capital Caracas is named the most deadly." *Daily Mail*. January 27, 2016.
- Castells, Manuel. "Squatters and the State: The Dialectics between Social Integration and Social Change (Case Studies in Lima, Mexico, and Santiago de Chile)." *Cities of the Global South Reader* (2014): 277.
- Castro, Lorenzo and Echeverri, Alejandro. "Bogota and Medellin: Architecture and Politics." *Architectural Design* 81.3 (2011): 96-103.
- Ceratti, Mariana. "In Brazil, an Emergent Middle Class Takes Off." *The World Bank*. November 13, 2012.
- Cervero, Robert B. "Linking urban transport and land use in developing countries." *Journal of Transport and Land Use* 6.1 (2013): 7-24.
- Cervero, Robert, and Aaron Golub. "Informal transport: A global perspective." *Transport Policy* 14.6 (2007): 445-457.
- Cervero, Robert. "Public Transport and Sustainable Urbanism: Global Lesson." *University of California Transportation Center* (2006).
- Cervero, Robert. "State roles in providing affordable mass transport services for low-income residents." (2011).
- Cervero, Robert. "Transport Infrastructure and the Environment in the Global South: Sustainable Mobility and Urbanism." *Jurnal Perencanaan Wilayah dan Kota* 25.3 (2014): 174-191.
- Cinquina, Andrea, and Holmberg, Bengt. *Sustainable public urban transport systems: The case of Curitiba*. Diss. MA thesis, Lund University, 2008.
- Cordoba, Diego Zapata, John Stanley, and Janet Robin Stanley. "Reducing Social Exclusion in Highly Disadvantaged Districts in Medellín, Colombia, through the Provision of a Cable-Car." *Social Inclusion* 2.4 (2014): 1-13.
- de Souza, Marcelo Lopes. "Social movements as 'critical urban planning' agents." *City* 10.3 (2006): 327-342.
- de Souza, Marcelo Lopes. "Urban planning in an age of fear: the case of Rio de Janeiro." *International Development Planning Review* 27.1 (2005): 1-19.
- Deng, Taotao, and John D. Nelson. "Recent developments in bus rapid transit: a review of the literature." *Transport Reviews* 31.1 (2011): 69-96.
- do Rio Caldeira, Teresa Pires. *City of walls: crime, segregation, and citizenship in São Paulo*. Univ of California Press, 2000.
- Domonske Camila. "Brazilian Soccer Star, Convicted In Ex-Girlfriend's Murder, Returns To The Sport." *the two-way*. National Public Radio. March 14, 2017.
- Duarte, Fábio, and Clovis Ultramari. "Making public transport and housing match: Accomplishments and failures of Curitiba's BRT." *Journal of Urban Planning and Development* (2011).

- Echeverri, Alejandro and Orsini, F. "Informality and Social Urbanism in Medellin." *Medellin Environment Urbanism Society*. (2012): 132-157.
- Fernandes, Edesio. "The City Statute and the Legal-Urban Order." *The City Statute of Brazil A commentary*. Sao Paulo. 2010.
- Garmany, Jeff. "Situating Fortaleza: Urban Space and Uneven Development in Northeastern Brazil." *Cities* 28.1 (2011): 45-52.
- Gondim, Linda MP, and Laurence Hallewell. "Creating the Image of a Modern Fortaleza: Social Inequalities, Political Changes, and the Impact of Urban Design." *Latin American Perspectives* (2004): 62-79.
- Goodman, Joseph, Melissa Laube, and Judith Schwenk. "Curitiba's bus system is model for rapid transit." *Race, Poverty and the Environment* (2005): 75-76.
- Harris, Richard. "International Policy for Urban Housing Markets in the Global South since 1945." *Cities of the Global South Reader* (2015): 122-33.
- Harvey, David. "The right to the city." *The City Reader* 6 (2008): 23-40.
- Harvey, David. *A brief history of neoliberalism*. Oxford University Press, USA, 2007.
- Harvey, David. *Social justice and the city*. Vol. 1. University of Georgia Press, (2010): pg. 50-120.
- Heinrichs, Dirk and Bernet, Judith S. "Public Transport and Accessibility in Informal Settlements: Aerial Cable Cars in Medellín, Colombia." *Transportation Research Procedia* Volume 4 (2014) : pg. 55-67. Web.
- Hidalgo, Dario, and Pierre Graftieaux. "Bus rapid transit systems in Latin America and Asia: results and difficulties in 11 cities." *Transportation Research Record: Journal of the Transportation Research Board* 2072 (2008): 77-88.
- Holston, James., eds. *Cities And Citizenship*. Durham, N.C. : Duke University Press, 1999. Print.
- Kenyon, Susan, Glenn Lyons, and Jackie Rafferty. "Transport and social exclusion: investigating the possibility of promoting inclusion through virtual mobility." *Journal of Transport Geography* 10.3 (2002): 207-219.
- Krassner, Anne. "Where do Political Will and Community Needs Meet? The case of the Aerial Cable Cars in Rio de Janeiro, Brazil." (2014).
- Lerner, Jaime. (2007, March). Jaime Lerner: A song of the city. Retrieved from [https://www.ted.com/talks/jaime\\_lerner\\_sings\\_of\\_the\\_city?language=en](https://www.ted.com/talks/jaime_lerner_sings_of_the_city?language=en)
- Levinson, Herbert, et al. "Bus rapid transit: Synthesis of case studies." *Transportation Research Record: Journal of the Transportation Research Board* 1841 (2003): 1-11.
- Lindau, Luis Antonio and Hidalgo, Dario and Facchini, Daniela. "Curitiba, the cradle of bus rapid transit." *Built Environment* 36.3 (2010): 274-282.
- Magalhaes, Alex F. "A lawyer responds: What is a favela?" 2015. Retrieved from <http://catcomm.org/lawyer-on-favela/>
- Maricato, Ermínia. "The Statute of the Peripheral City." *The City Statute of Brazil A commentary*. Sao Paulo. 2010.
- Mejía-Dugand, Santiago, et al. "Lessons from the spread of bus rapid transit in Latin America." *Journal of Cleaner Production* 50 (2013): 82-90.
- Menegaz, Felipe. "Regions of Brazil." July 31, 2011. Retrieved from: [https://upload.wikimedia.org/wikipedia/commons/thumb/4/41/Brazil\\_regions.png/682px-Brazil\\_regions.png](https://upload.wikimedia.org/wikipedia/commons/thumb/4/41/Brazil_regions.png/682px-Brazil_regions.png)
- Miraftab, F. "Planning and Citizenship" in Rachel Weber and Randall Crane (eds.) *Oxford Handbook of Urban Planning*. Oxford University Press. Chapter 38, (2012): 1180-1204.

- Miraftab, Faranak, and Neema Kudva, eds. *Cities of the global south reader*. Routledge, 2014.
- Miraftab, Faranak. "Insurgent planning: Situating radical planning in the global south." *Planning Theory* 8.1 (2009): 32-50.
- Montezuma, Ricardo. "The Transformation of Bogotá, Colombia, 1995–2000: Investing in Citizenship and Urban Mobility." *Global Urban Development* 1.1 (2005): 1-10.
- Mukhija, Vinit, and Anastasia Loukaitou-Sideris. *The informal American city: Beyond taco trucks and day labor*. MIT Press, 2014.
- Munoz-Raskin, Ramon . "Walking accessibility to bus rapid transit: Does it affect property values? The case of Bogotá, Colombia." *Transport Policy* Volume 17, Issue 2 (2010) : pg. 72-84. Web.
- Murray, Martin J. "The spatial dynamics of postmodern urbanism: social polarisation and fragmentation in São Paulo and Johannesburg1." *Journal of Contemporary African Studies* 22.2 (2004): 139-164.
- Nes, Egil Fujikawa. "Social Classes in Brazil." *The Brazil Business*. January 26, 2016. Retrieved from: <http://thebrazilbusiness.com/article/social-classes-in-brazil-1453802521>.
- Ohnmacht, T., Maksim, H. and Bergman, M. (2009) *Mobilities and Inequality*. Farnham: Ashgate.
- Paes, Eduardo. (2012, February). Eduardo Paes: The 4 Commandments of cities. Retrieved from [https://www.ted.com/talks/eduardo\\_paes\\_the\\_4\\_commandments\\_of\\_cities?language=en](https://www.ted.com/talks/eduardo_paes_the_4_commandments_of_cities?language=en)
- Pasternak, Suzana, and Camila D'Ottaviano. "Half a century of self-help in Brazil." *Affordable housing in the urban global south: seeking sustainable solutions*. London: Routledge/Earthscan (2014): 241-255.
- Pequeno, Renato. "Urban Illegality in the Fortaleza Metropolitan Area; Special Social Interest Zones as an Alternative Solution." *14th IPHS Conference-Urban Transformation: Controversies, Contrasts and Challenges*. 2010.
- Perlman, Janice E. "The metamorphosis of marginality: four generations in the favelas of Rio de Janeiro." *The Annals of the American academy of Political and social science* 606.1 (2006): 154-177.
- Perlman, Janice E. *The Myth of Marginality: Urban poverty and politics in Rio de Janeiro*. Univ of California Press, 1979.
- Perlman, Janice. "Marginality From Myth To Reality The Favelas Of Rio De Janeiro 1968-2005." *Megacities Project*, sourced on 20.5 (2007): 1-10.
- Portes, Alejandro,, Castells, Manuel,Benton, Lauren A.,eds. *The Informal Economy: Studies In Advanced And Less Developed Countries*. Baltimore, Md. : Johns Hopkins University Press, 1989. Print.
- Preston, John, and Fiona Rajé. "Accessibility, mobility and transport-related social exclusion." *Journal of Transport Geography* 15.3 (2007): 151-160.
- Rabinovitch, Jonas, and Josef Leitman. "Urban Planning In Curitiba." *Scientific American* 274.3 (1996): 46. Academic Search Complete. Web. 15 Nov. 2015.
- Rabinovitch, Jonas. "Curitiba: towards sustainable urban development." *Environment and Urbanization* 4.2 (1992): 62-73.
- Realí, Mário and Alli, Sérgio. "The City of Diadema and the City Statute." *The City Statute of Brazil A commentary*. Sao Paulo. 2010.
- Rehan, G. M., and H. S. Mahmoud. "The Integration Between Transportation Solutions, Economic Development and Community Development as an Approach for

- Sustainability—A Case Study of Curitiba, Brazil." *World Academy of Science, Engineering and Technology* 73 (2011): 488-494.
- Rittel, Horst WJ, and Webber, Melvin M. "Dilemmas in a general theory of planning." *Policy sciences* 4.2 (1973): 155-169.
- Rodrigues, Evaniza and Barbosa, Benedito Roberto. "Popular Movements and the City Statute." *The City Statute of Brazil A commentary*. Sao Paulo. 2010.
- Rodriguez, Daniel A. and Felipe Targa. "Value of accessibility to Bogotá's bus rapid transit system." *Transport Reviews* 24.5 (2004): 587-610.
- Rodriguez, Daniel A., and Carlos H. Mojica. "Land value impacts of bus rapid transit: the case of Bogotá's TransMilenio." *Land Lines* (2008).
- Roy, Ananya. "Urban informality: toward an epistemology of planning." *Journal of the american planning association* 71.2 (2005): 147-158.
- Roy, Ananya. "Why India cannot plan its cities: Informality, insurgence and the idiom of urbanization." *Planning theory* 8.1 (2009): 76-87.
- Sandercock, Leonie, eds. *Making The Invisible Visible: A Multicultural Planning History*. Berkeley : University Of California Press, 1998. Print.
- Sassen, S. (1996). *Whose city is it? Globalization and the formation of new claims*. *Public Culture* 8, 205-223.
- Schwartz, Aerial. "A Look Inside Rio de Janeiro's Oldest Favela, Threatened by Gentrification and the 2016 Olympics." *Fast coexist*
- Scruggs, Greg. "Cracks in the Curitiba Myth." *NextCity*. 1 November 2013.  
<https://nextcity.org/daily/entry/cracks-in-the-curitiba-myth>
- Urry, J. (2007) *Mobilities*. Cambridge: Polity.
- Urry, John. "Governance, flows, and the end of the car system?." *Global Environmental Change* 18.3 (2008): 343-349.
- Van Ballegooijen, Jan, and Roberto Rocco. "The Ideologies of Informality: informal urbanisation in the architectural and planning discourses." *Third World Quarterly* 34.10 (2013): 1794-1810.
- Vargas, João H. Costa. "When a Favela Dared to Become a Gated Condominium The Politics of Race and Urban Space in Rio de Janeiro." *Latin American Perspectives* 33.4 (2006): 49-81.
- Wright, Lloyd, and Ricardo Montezuma. "Reclaiming public space: the economic, environmental, and social impacts of Bogotá's transformation." *University College London*. (2004).
- Zukin, Sharon. *The Cultures of Cities*. Vol. 150. Oxford: Blackwell, 1995.



## Appendix A: IRB Approval Letter

UNIVERSITY OF ILLINOIS  
AT URBANA-CHAMPAIGN

Office of the Vice Chancellor for Research

Office for the Protection of Research Subjects  
528 East Green Street  
Suite 203  
Champaign, IL 61820



March 6, 2017

Bumsoo Lee  
Urban & Regional Planning  
M 206  
611 Taft Drive  
Champaign, IL 61820

RE: *Analysis of the VLT Implementation in Fortaleza Brazil*  
IRB Protocol Number: 17491

Dear Dr. Lee:

This letter authorizes the use of human subjects in your project entitled *Analysis of the VLT Implementation in Fortaleza Brazil*. The University of Illinois at Urbana-Champaign Institutional Review Board (IRB) approved, by expedited review, the protocol as described in your IRB application. The expiration date for this protocol, IRB number 17491, is 03/05/2020. The risk designation applied to your project is *no more than minimal risk*.

Copies of the attached date-stamped consent form(s) must be used in obtaining informed consent. If there is a need to revise or alter the consent form(s), please submit the revised form(s) for IRB review, approval, and date-stamping prior to use.

Under applicable regulations, no changes to procedures involving human subjects may be made without prior IRB review and approval. The regulations also require that you promptly notify the IRB of any problems involving human subjects, including unanticipated side effects, adverse reactions, and any injuries or complications that arise during the project.

You were granted a three-year approval. If there are any changes to the protocol that result in your study becoming ineligible for the extended approval period, the RPI is responsible for immediately notifying the IRB via an amendment. The protocol will be issued a modified expiration date accordingly.

If you have any questions about the IRB process, or if you need assistance at any time, please feel free to contact me at the OPRS office, or visit our website at <https://www.oprs.research.illinois.edu>.

Sincerely,

A handwritten signature in cursive script that reads "jennifer ford".

Jennifer Ford, MS  
Human Subjects Research Specialist, Office for the Protection of Research Subjects

Attachment(s): 1 Waiver of Documentation, 2 Consent Forms

c: Gregory Anderson

## **Appendix B: Consent Language (English)**

G. Kaur      Analysis of the VLT Implementation in Fortaleza, Brazil

**The following is sample language to be used to obtain consent from potential research subjects.**

Language to be used upon meeting:

I am interested in learning about public infrastructure projects within the city of Fortaleza. The primary focus of my research is to learn from people how they and their communities are being affected by the light rail development project in progress. We can discuss anything related, including other transportation infrastructure projects or concerns you have. I am also interested in learning about the public outreach element both in general and specific to the plans for the project. Would you be willing to be interviewed?

### **If yes or unsure:**

Let me tell you more about it. We can do the interview anywhere you would like – any place you feel comfortable. The interview will take between 30 minutes and an hour. I would like to record the interview on video or audio, or if you would prefer, we can do the interview with no recording at all – it is your choice. I will be taking notes and may ask you to repeat or elaborate on certain topics. I am interviewing a wide audience related to the project and other general municipal, urban planning, public services, and development in Fortaleza. This study will potentially be published and available publicly. It is possible the the study will produce contradictory opinions from different people and organizations.

You may participate and have your identity shared or not.

#### 1) To residents:

I will ask you questions about your community, the places you go frequently, and how the light rail development has affected your community. I will ask you about your feelings about public transportation and its presence in Fortaleza. I will also ask you about your own reactions to the public transportation available and any changes taking place or changes you would like to see. Finally, I would like you to show me the places in the community that are a part of your daily life, and I will record the location of those places, as well as the location of your home.

I will take photos of your community. If you agree, I will take some of those with you. The risks of participating in this research are no greater than those you face in daily life.

Some people may be forced to leave their home because of the development. If this happens to you, I would like to interview you again about this experience. If you agree to complete a follow-up interview, you will be paid R\$16.00 for completing that interview. You will receive that payment at the end of the interview before we say goodbye.

#### 2) For Affiliated workers:

I will ask you questions about your general area of work and the projects you are familiar with and more specifically about the community to be affected by the development and the planning process and visions for the project. The questions will be about the public outreach process and the data collection and background research process as well. I would like to understand the steps involved and the documents associated with the project.

If you agree, I would like to take pictures or scans of the planning documents and maps. The risks of participating in this research are no greater than those you face in daily life. I will be analyzing the planning process and the project.

If you agree to complete an interview, you will be given a recording of your interview through a password-protected link. If this is not an easy way for you to receive your recording, I can give it to you on CD. This recording will not be available immediately, but will be given to you as soon as possible.

As a research subject, you can decline to participate at any time before or during the interview, and we will stop. Also, you can participate but choose not to answer any of my questions – please just tell me that you would like to skip that question.

Before we start, do you have any questions about the research? Are you willing to participate in this interview?

May I video or audio record the interview? May I take photos of you? Is it okay if I include your name and age in the final results?

## **Appendix C: Consent Language (Portuguese)**

**PORTUGUESE** The following is sample language to be used to obtain consent from potential research subjects. Language to be used upon meeting:

*Estou interessada em aprender sobre projetos de infraestrutura pública dentro da cidade de Fortaleza. O foco principal da minha pesquisa é aprender como as pessoas e as comunidades deles estão afetadas pelo projeto de desenvolvimento do trem leve em andamento. Também estou interessado em aprender sobre o elemento de divulgação pública dos planos para o projeto. Você estaria disposto a ser entrevistado?*

### **Se sim ou se está com dúvidas:**

*Deixe-me dizer mais sobre isso. Podemos fazer a entrevista em qualquer lugar de sua preferência - qualquer lugar que você se sinta confortável. A entrevista vai demorar entre 30 minutos e uma hora. Eu gostaria de gravar a entrevista em vídeo, mas se você preferir, nós podemos fazer a entrevista com apenas uma gravação de áudio ou sem nenhuma gravação - a escolha é sua. Eu vou tomar as anotações e posso pedir-lhe para repetir ou elaborar sobre alguns tópicos. Estou entrevistando uma ampla audiência relacionada ao projeto e outros serviços gerais municipais, de planejamento urbano, de serviços públicos e de desenvolvimento em Fortaleza. Este estudo será potencialmente publicado e disponível publicamente. É possível que o estudo produza opiniões contraditórias de diferentes pessoas e organizações.*

*Você pode participar e ter sua identidade compartilhada ou não.*

#### *1) Para habitantes:*

*Vou fazer perguntas sobre a sua comunidade, os lugares que você vai com frequência, e como a VLT afetou sua comunidade. Vou perguntar sobre seus sentimentos sobre o transporte público e sua presença em Fortaleza. Além disso, vou perguntar sobre suas próprias reações ao transporte público e as alterações que ocorrem por causa disso e o que você gostaria de ver. Finalmente, eu gostaria que você me mostrasse os lugares da comunidade que fazem parte da sua vida diária, e eu vou manter um registro da localização desses lugares, bem como a localização da sua casa.*

*Vou tirar fotos de sua comunidade. Se você concordar, vou tomar tirar algumas fotos com você. Os riscos de participar nesta pesquisa não são maiores do que aqueles que você enfrenta na vida diária.*

*Algumas pessoas podem ser forçadas a deixar suas casas por causa da Copa do Mundo. Se*

*isso acontecer com você, eu gostaria de entrevistá-lo novamente sobre esta experiência. Se você concorda em completar uma entrevista de acompanhamento, você será pago R \$ 16,00 por completar essa entrevista. Você receberá o pagamento no final da entrevista, antes de dizer adeus.*

*2) Para trabalhadores afiliados com projeto:*

*Vou fazer-lhe perguntas sobre a comunidade a ser afetada pelo desenvolvimento e pelo processo de planejamento e visões para o projeto. As perguntas serão sobre o processo de divulgação pública e a coleta de dados e processo de pesquisa de fundo também. Gostaria de compreender as etapas envolvidas e os documentos associados ao projeto.*

*Se você concorda, eu gostaria de tirar fotos ou digitalizar os documentos de planejamento e mapas. Os riscos de participar desta pesquisa não são maiores do que aqueles que você enfrenta na vida diária. Estarei analisando o processo de planejamento e o projeto.*

*3) Para pais de crianças de 8 a 18 anos:*

*Vou perguntar ao seu filho sobre o projeto de desenvolvimento do trem leve e como ele afetou sua comunidade e rotinas. Também farei perguntas sobre o que gostariam de ver na sua comunidade.*

*Se você concorda em completar uma entrevista, você receberá uma gravação de sua entrevista através de um link protegido por senha. Se isto não for uma maneira fácil para que você receba a sua gravação, eu posso dar a você em CD. Esta gravação não estará disponível imediatamente, mas será dada a você o mais breve possível.*

*Como objeto de pesquisa, você pode recusar-se a participar em qualquer momento, antes ou durante a entrevista, e vamos parar. Além disso, você pode participar, mas optar por não responder a nenhuma das minhas perguntas - por favor, diga-me que você gostaria de pular essa pergunta.*

*Antes de começar, você tem alguma dúvida sobre a pesquisa? Você está disposto a participar desta entrevista?*

*Posso gravar vídeo a entrevista? (Pergunte sobre áudio caso não autorize gravação de vídeo) Posso tirar fotos de você? Tudo bem se eu incluir o seu nome nos resultados finais?*

**Appendix D: Questions for Informal Housing Residents of Fortaleza, Brazil**  
Interview Questions (English)

<b>Background</b>		
People	1.	Please tell me a little about yourself.
	2.	Where do you live, and how long have you lived there?
	3.	How old are you?
	4.	How do you and/or others in your household earn a living? Where do you work? How do you get to and from work? How much would you say is your monthly household income?
	5.	What sort of things do you like to do in your free time?
Home/Community	6.	Which other people do you spend time with, and what do you like to do together? Where do they live?
	7.	What is your home like - what are the best and the worst parts of your home? [Probe: Do you have everything you need? If not, what are you lacking? What does that mean for your daily life?]
	8.	What about your community – what is it like? What are your favorite and least favorite parts? Where are the things located that you mentioned? What are the streets like? Are they in good repair? Are they clean? [Probe: Does your community have everything you want? If not, what is it lacking? What does that mean for your daily life?]
	9.	What kinds of things do you do inside and outside of your community?
	10.	Who inside or outside of your community, if anyone, do you depend upon, and for what? Where are those people located?
<b>Public Transportation/ Displacement</b>		
	11.	Do you use public transportation? Why or why not? How often? How much do you usually spend on transportation in a month? Do you think the public transportation serves your needs?
General Sentiment	12.	What do you know about the light rail development in Fortaleza? How did you first learn about it? Did someone involved with the project discuss the project with the community?
	13.	Will you use the light rail? Why/ Why not?
	14.	There have been news stories about physical structures conflicting with the location of some communities including this one. Some of those stories were about people being threatened with eviction from their homes in this neighborhood. What do you know about that? [Probe: Do you think the stories were truthful and/or accurate in representing the situation?]
Personal Experience	15.	Do/did you feel like this threat applies/d to you? Why or why not?
	16.	[If yes...] How did you respond to the threat, and why? Was that similar or different than how others in your community responded? How?
	17.	[If appropriate] Have you had to move because of the project? [If yes] Where did you live before?

		[Repeat questions in “Home/Community” section in regard to previous home] [Repeat questions in “People” section, except age, regarding differences during residence in previous home]
	18.	[If second interview in new location] Thinking about things that might have changed from our original interview... [Repeat questions in “Home/Community” section in regard to previous home] [Repeat questions in “People” section, except age, regarding differences during residence in previous home]
	19.	Have things stabilized or do you expect more changes because of the development?
	20.	What was the outcome for you and for others? [Probe: In terms of housing? In terms of transportation habits? The community in general?] [Probe: Were there differences in the outcomes for you and other people, or for different groups?]
<b>The Wrap-Up</b>		
Personal Plans	21.	What is next for you? For your community?
	22.	What would be the best possible outcome for your situation related to the conflict with public investment? How likely do you think that is to happen? Who is likely to make the biggest difference when it comes to making that idea happen or preventing it?
	23.	Is there anything you would like to mention that I have not asked?
	24.	Are there questions you expected in this interview that I didn’t ask?
	25.	[If interview held within community] Before we finish, would you show me around to a few of the places you mentioned?

**Appendix E: Questions for Informal Housing Residents of Fortaleza, Brazil**  
Interview Questions (Portuguese)

<b>Background</b>		
People	1.	Por favor, diga-me um pouco sobre você.
	2.	Onde você mora, e há quanto tempo você viveu lá?
	3.	Quantos anos você tem?
	4.	Quais atividades você ou outras pessoas da sua casa fazem para se sustentar? Onde você trabalha? Como você chega e vem do trabalho? Qual é o salário médio mensal?
	5.	Que tipo de coisas que você gosta de fazer no seu tempo livre?
Home/Community	6.	Com quais outras pessoas você mantém contato regular, e o que você gosta de fazer juntos? Onde eles vivem?
	7.	Como é a sua casa? Quais são as melhores e as piores partes da sua casa? [ Probe : Você tem tudo que você precisa? Se não, o que está faltando? O que isso significa para a sua vida diária? ]
	8.	E sobre a sua comunidade – como ela é? Quais são as partes peças favoritas e menos favoritas? Onde estão os lugares que você mencionou? Como estão as ruas? Elas estão em bom estado? Estão eles limpas? [ Probe: A sua comunidade tem tudo que você quer? Se não, o que é que falta? O que isso significa para a sua vida diária? ]
	9.	Que tipo de coisas que você faz dentro e fora de sua comunidade?
	10.	Você é dependente de alguém de dentro ou fora de sua comunidade? Onde essas pessoas moram?
	<b>Public Transportation/ Displacement</b>	
General Sentiment	11.	Você usa o transporte público? Por que ou por que não? Com que frequência? Quanto você costuma gastar em transporte em um mês? Você acha que o transporte público atende às suas necessidades?
	12.	O que você sabe sobre a VLT em Fortaleza? Como você aprendeu sobre isso? Alguém envolvido no projeto discute o projeto com a comunidade?
	13.	Você vai usar o metro leve? Porque não?
	14.	Tem havido notícias sobre estruturas físicas em conflito com a localização de algumas comunidades, incluindo esta. Algumas dessas histórias eram sobre pessoas que estão sendo ameaçadas de expulsão de suas casas neste bairro. O que você sabe sobre isso? [Probe : Você acha que as histórias eram verdadeiras e / ou precisas na representação da situação? ]
Personal	15.	Você sente que esta ameaça pode te afetar? Por que ou por que não?



Experience	16.	[Se sim] Como é que você responde à essa ameaça, e por quê? Isso foi semelhante ou diferente de como os outros em sua comunidade responderam? Como?
	17.	[If appropriate] Você já teve que se mudar por causa da projeto? [Se sim] Onde você morava antes? [Repeat questions in “Home/Community” section in regard to previous home] [Repeat questions in “People” section, except age, regarding differences during residence in previous home]
	18.	[If second interview in new location] Pensando em coisas que poderiam ter mudado a partir de nossa entrevista original ... [Repeat questions in “Home/Community” section in regard to previous home] [Repeat questions in “People” section, except age, regarding differences during residence in previous home]
	19.	Será que as coisas estabilizaram ou você espera mais mudanças por causa do desenvolvimento?
	20.	Qual foi o resultado para você e para os outros? [ Probe : Em termos de habitação? Em termos de hábitos de transporte? A comunidade em geral? ] [ Probe : Houve diferenças nos resultados para si e para outras pessoas , ou para diferentes grupos ?]
<b>The Wrap-Up</b>		
Personal Plans	21.	Quais são seus próximos objetivos? E para a sua comunidade?
	22.	a. Qual seria o melhor resultado possível para a sua situação relacionada com o conflito com as estruturas de investimento público? b. Qual a probabilidade de isso acontecer de fato? c. Quais pessoas tem a possibilidade de fazer a maior diferença quando se trata de implementar ou bloquear essas idéias?
	23.	Há algo que você gostaria de mencionar que eu não perguntei?
	24.	Há perguntas que você espera desta entrevista que eu não perguntei ?
	25.	[If interview held within community] Antes de terminar, você poderia me mostrar alguns dos lugares que você mencionou?

**Appendix F: Questions for those Involved in the public services including urban planning but not limited to the Light Rail Development in Fortaleza, Brazil**  
Interview Questions (English)

<b>Background</b>		
People	1.	Please tell me a little about yourself. What do you do? What inspired you to work in this field?
	2.	What organization or agency do your work for? (If applicable): What is your relationship to the project?
	3.	How long have you worked there?
	4.	Have you personally interacted with the affected residents/ community?
	5.	Do you live in the affected area?
<b>Public Transportation/ Displacement</b>		
Planning Process	6.	How long has the project been planned? What is the timeline?
	7.	What was the planning process surrounding this project?
	8.	What was the public outreach and engagement like for this project?
	9.	What was the decision-making process for this project? Who benefits from it? Who is paying for it? Do you think it has any negative effects?
	10.	What are some of the key elements of the project? What is the best aspect?
	11.	What is something in the project or planning process that you would like to improve as Fortaleza grows?
<b>The Wrap-Up</b>		
Future Plans	12.	What is next for public transportation in Fortaleza?
	13.	What is next for the residents that are to be displaced?
	14.	What would be the best possible outcome for the project and the informal settlements? How likely do you think that is to happen? Who is likely to make the biggest difference when it comes to making that idea happen or preventing it?
	15.	Is there anything you would like to mention that I have not asked?
	16.	Are there questions you expected in this interview that I didn't ask?
	17.	[If interview held within community] Before we finish, would you show me around to a few of the places you mentioned?

**Appendix G: Questions for those Involved in the public services including urban planning but not limited to the Light Rail Development in Fortaleza, Brazil**

Interview Questions (Portuguese)

<b>Background</b>		
People	1.	Por favor, diga-me um pouco sobre você. O que você faz? O que o inspirou a trabalhar neste campo?
	2.	Para qual organização ou agência trabalha? (If applicable): Qual é a sua relação com o projeto?
	3.	Quanto tempo você trabalhou lá?
	4.	Você já interagiu pessoalmente com os moradores / comunidade afetados?
	5.	Você mora na área afetada?
<b>Public Transportation/ Displacement</b>		
Planning Process	6.	Quanto tempo o projeto foi planejado? Qual é o cronograma?
	7.	Qual foi o processo de planejamento envolvendo este projeto?
	8.	Qual foi o alcance e envolvimento público como para este projeto?
	9.	Qual foi o processo de tomada de decisão para este projeto? Quem se beneficia disso? Quem está pagando por isso? Você acha que tem algum efeito negativo?
	10.	Quais são alguns dos elementos-chave do projeto? Qual é o melhor aspecto?
	11.	O que é algo no projeto ou processo de planejamento que você gostaria de melhorar à medida que Fortaleza cresce?
<b>The Wrap-Up</b>		
Future Plans	12.	Quais são os próximos planos para o transporte público em Fortaleza?
	13.	Qual é o próximo passo para os moradores que serão deslocados?
	14.	Qual seria o melhor resultado possível para o projeto e os assentamentos informais? Quão provável você acha que isso vai acontecer? Que pessoas tem maior chance de fazer a diferença para implementar ou barrar esses projetos?
	15.	Há algo que você gostaria de mencionar que eu não perguntei?
	16.	Há perguntas que você espera desta entrevista que eu não perguntei ?
	17.	[If interview held within community] Antes de terminar, você poderia me mostrar alguns dos lugares que você mencionou?