Stories of Sand:

Living Landscapes in Panama City and its Hinterlands

By

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A Thesis Submitted in Partial Fulfillment of the Requirements for a B.A. Joint Honours in Anthropology and Geography

Departments of Anthropology and Geography

McGill University

Montréal, Québec April

2024

Acknowledgements

I extend enormous thanks to Dr. Mette Bendixen and Dr. Diana Allan for their collaboration as co-supervisors of this project. Their unwavering support and guidance never failed to encourage and set me back on track when I felt this thesis was getting away from me. I am hugely grateful for their flexibility in merging their two diverse fields of expertise into one idea. Thank you to all of my collaborators and mentors in the field, Dr. Marixa Lasso and Dr. Tomás Mendizábal of the Public Interest Association Center for Historical Anthropological and Cultural Research, Jean-Sébastien Pourcelot and colleagues at the Panama Canal Museum, Melva Lowe de Goodin and the Society of Friends of the West Indian Museum of Panama, and Dr. Daviken StudnickiGizbert and Carmen Umana-Kinitzki for their listening ears and helpful advice that steered me in the right direction.

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Abstract

Sand is a constituent of almost all materials in the anthropogenic world, including roads, buildings, glass, clothing, pharmaceuticals, silicon chips and the very ground beneath our feet. Despite the importance of this underappreciated and overexploited resource, little attention is paid to the sedimentary structures that form both our built environment and the foundation of our socio-spatial relationships. This thesis employs urban political ecology as a conceptual framework to explore landscapes within Panama City as living archives of geosocial change. It uses sand as a vehicle to track physical mobilizations and the social processes they incur. Calling on three locales of land reclamation in Panama City from the early 20th century until today, namely 1) swamp infill to create residential space for international workers arriving to construct the Panama Canal, 2) land stabilization to delimit the boundaries of Panama City, and 3) contemporary coastal expansion in pursuit of modern ideals, this paper recounts histories of environmental transformation, infrastructural displacement, and development discourse embedded in anthropogenic landscapes.

Chapter 1. Introduction

Sand is a quiet resource that very few take notice of unless in direct confrontation with it, like when you're trying to brush away itchy granules from your beach towel or cursing the pothole that punctured your car tire. Even then, sand is rarely thought of in isolation, but as part of a vast yellow beach or an aging road. The fact is, I had never considered sand much either until I enrolled in a university course on the topic of geomorphology and decided to attend Professor Bendixen's brand-new initiative, Sand Club. It was there that I learned sand is an inconspicuous but omnipresent ingredient in almost all materials of my daily life, not only in sandy-looking things like roads and buildings, but also unexpected products such as glass, clothing, pharmaceuticals, silicon chips, wine, cosmetics, and the often-overlooked ground beneath our feet (Beiser, 2018; Bendixen, 2021).

While I sit at my glass desk drinking out of a ceramic up and typing on my silicon-powered laptop, I find it interesting to ponder all the different ways we depend on sand as the most important solid substance on Earth (Beiser, 2018; Bendixen, 2021). In 2019, an estimated 32 to 50 billion tonnes of annual global sand consumption already exceeded the rate of natural renewal, and this number is expected to increase by 48% before 2060, heading us directly toward a global sand shortage (Bendixen et al., 2019; Zhong et al, 2022). This projected state of emergency will most heavily impact countries expecting high population growth and demand for residential and urban expansion (Bendixen et al., 2019; Mendelsohn, 2018). Knowing this, it is time for us to start appreciating and reconsidering how we use and value our sand.

Though it may seem like sand exists in massive abundance on beaches and in deserts, such wind-eroded grains are too rounded and similar in grain size for most anthropogenic purposes (Bendixen et al., 2019; Zhong et al., 2022). The kind of sand most useful to us must be eroded by water or glacial processes to maintain its jagged shape and larger size capable of binding together to support solid concrete structures and expand coastal lands (Bendixen et al., 2019). Largely found in riverbeds, lakes, floodplains, the marine environment, or quarried from solid ground, this kind of sand is hauled away in increasing volumes by a range of highly laborious informal operations to mechanized formal contracts (Bendixen et al., 2021).

Not only is the growing need for sand going to stress construction and manufacturing processes, but stripping any volume of sand from marine and riverine environments is detrimental to ecosystem health (Bendixen et al., 2021; Koehnken et al., 2020). Sand extraction is known to severely alter river channel morphology and sediment capacity, inciting risks of riverbank collapse, drowning deltas, loss of aquatic and shoreline vegetation, and spreading contamination (Bendixen

et al., 2021; Koehnken et al., 2020). These effects will, in turn, impact human livelihoods by damaging infrastructure and housing, diminishing the safety and availability of drinking water, spreading disease, killing fish stocks, forcing relocation, and flooding agricultural land (Bendixen et al., 2023; Beiser, 2018; Rousseau & Marschke, 2023; United Nations Environment Programme, 2022).

One of the most striking uses of sand is land reclamation, that is, the expansion of coastal areas by pouring and compacting sand, gravel, and crushed stone (herein referred to as aggregates) onto wetlands and shallow seas until new land emerges (Bendixen et al., 2021; Martín-Anton et al., 2016; Sengupta et al., 2023). Land reclamation projects are ramping up, predominantly on the coastlines of Asia, as well as Europe, Africa, and, unusual to Central America, Panama, to create space for industrial, residential, and commercial activities (Mendelsohn, 2018; United Nations Environment Programme, 2022; Sengupta et al., 2023). Between 2000 and 2020, Sengupta et al. (2023) found that 106 coastal cities around the world, including Shanghai, Dubai, Singapore, Jakarta, and Lagos have contributed a total of 253,000 hectares of reclaimed land, an area roughly equivalent to the size of Luxembourg. Notably for this study, luxury tourism, residential, and recreational spaces associated with pristine parks and ocean views constitute a consistent trend across many cities (Sengupta et al., 2023).

Land reclamation is an explicit example of how sand is a foundation for our human-urban environments and material existence (Beiser, 2018). Sedimentary gains or imports of sand for land reclamation purposes represent a social, political, and environmental equation levelled by sedimentary losses — and by extension, social, political, and environmental losses — or exports elsewhere (Dawson, 2021b). The process of importing and exporting sand translates the production of urban landscapes into transactions of materials and capital (Dawson, 2021a; Heynen et al., 2006). The power imbalance between rapidly importing and exporting countries is what Jamieson (2021, p.228, as cited in Dawson, 2021b) describes as a "colonial extraction of territory". Now that we have an adequate understanding of the environmental risks and costs of sand extraction, these considerations should be paired with a discussion of the significant stakes of sand use and exchanges at a global scale, inviting a discussion of the socio-political power relations and motivations embedded in access to and possession of sand (Dawson, 2021b; Mendelsohn, 2018).

1.1. Thesis Aim and Research Questions

To engage with the complexity outlined above, I use sand as a vehicle to track geophysical transformations and the human processes they incur, grounded in land reclamation sites of Panama

City from the early 20th century until today. Using three locales in the history of Panama City's coastal expansion, namely land reclamation to accommodate the influx of workers employed to construct the Panama Canal, inner-city swamp infill for urban development, and today's coastal expansion for green space and luxury housing, this paper tells stories of sand through the themes of environmental transformation, infrastructural displacement, and development discourse embedded in anthropogenic landscapes.

I am guided by three main research questions: 1) Who and what do land reclamation sites intend to serve? 2) How do certain people and activities come to inhabit reclaimed land, and who is omitted throughout this process? And 3) What is the official discourse related to land reclamation projects and what is the reality on manufactured ground?

1.2. Thesis Layout

This introductory chapter has explained the significance of sand and sand scarcity in both environmental and social contexts, defined land reclamation, and outlined the aim of this thesis, guiding research questions, and themes. The following chapter, Conceptual Framework, provides a conceptual overview of urban political ecology and landscapes as living archives that inform the remainder of this thesis, organized by the three themes: environmental transformation, infrastructural displacement, and development discourse. In Chapter Three, Methodology, I discuss my experience conducting independent fieldwork in Panama City and my chosen methods of archival and museum research, interviews and collaboration, and ethnography. Chapter Four, Historical Context, outlines the critically important history of the Panama Canal and the socio-political conditions that have culminated in the current urban composition of Panama City. This is followed by Chapter Five, Empirical Results, in which I recount the geosocial histories of La Boca, a neighborhood created to accommodate the influx of Afro-Caribbean workers to construct the Canal turned wealthy Panamanian suburb, the Market Districts within Panama City known to be a vibrant melting pot of cultures and currently subject to gentrification processes as a result of surrounding urban development, and finally, the Cinta Costera, a series of coastal expansion projects aiming to address urban dysfunction and provide an idyllic shoreline experience in pursuit of modernity and global recognition. The final chapter, Discussion and Conclusion, attempts to relate the aforementioned locales to my conceptual framework more clearly and provide a summary of my empirical results.

Chapter 2. Conceptual Framework

In preparation for a geosocial reading of Panama City's expanding urban coast, I develop a two-pronged conceptual framework drawing on Dawson's (2021a) and Clark's (2017) conception of urban political ecology (UPE) and my own theory of land as a living archive, inspired by Allan's (2018) attention to social memory through oral, sensory, and tangible cues compiled in archival form (Figure 2.1). To examine the stomping grounds of human experience from their sedimentary foundations, I combine these two frameworks by exploring physical landscapes as living archives of interconnected social, political, and ecological memory (Dawson, 2021a). I position modern landscapes as products of colonial power dynamics and resource mobilization, explained through the themes of environmental transformation, infrastructural displacement, and development discourse. In doing so, I hope to reveal the material exchanges coaxed on by colonial power dynamics that form "the terms on which the city's material skeleton is founded" (Dawson, 2021a, p.1005).

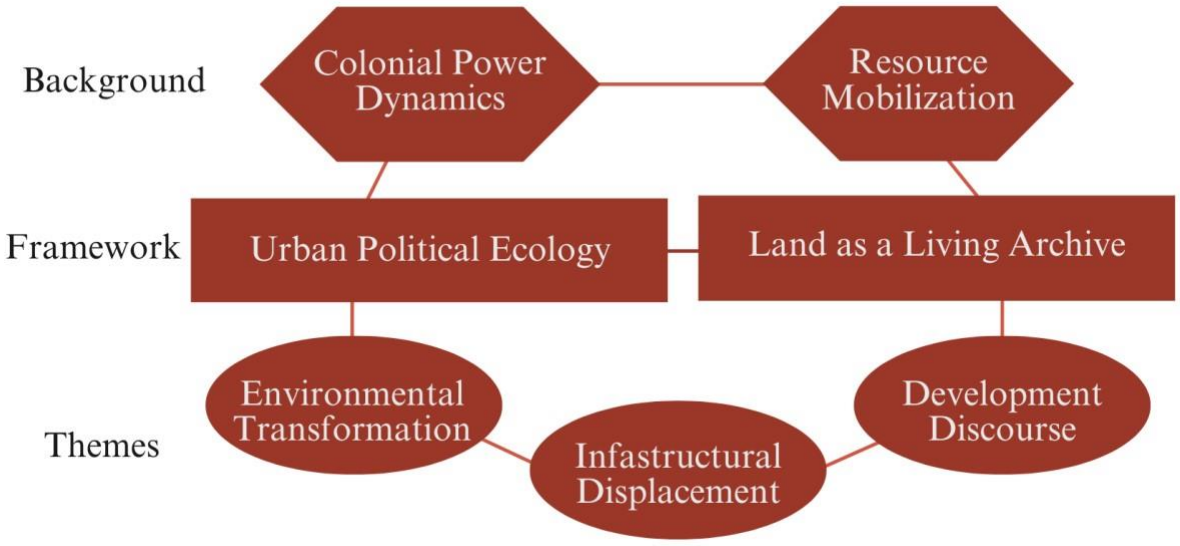


Figure 2.1. Conceptual Framework Key Ideas (Author)

Contemporary scholarship in the social sciences willingly engages with certain nonhuman entities such as plant and animal life, yet human relationships with inorganic substances such as steel and sand fall largely outside of the mainstream (Clark & Yusoff, 2017). My conceptual framework follows the work of pioneering scholars Carse (2014), Dawson (2021a; 2021b), Heynen et al. (2006), Lasso (2019), and Mitchell (2002) to expose the before lives — that is, the pre-extracted, commodified, and manufactured lives — of raw materials to understand the fundamentally political conditions through which urban infrastructures are produced.

2.1 Environmental Transformation

In adopting a UPE framework in the age of the Anthropocene, I consider both natural and urban landscapes to have been touched by, if not altogether shaped by social, economic, and political motivations, mobilized through activities such as mining, habitat destruction, carbon emissions, and waste disposal (Clark & Yusoff, 2017, Heynen et al., 2006). For this reason, I employ environmental transformation as a key theme through which to articulate both the harmful effects of sand extraction and land reclamation on ecological systems and the psychological evaluation and subsequent physical transformation of natural landscapes according to anthropogenic desire and technological ability.

Any project of sand extraction, especially one as massive as the excavation of the Panama Canal, causes major ecosystem disturbance, pollution, erosion, loss of arable land, and large-scale changes in land uses and conditions (Bendixen et al., 2023). Moreover, the process of dredging and dumping sediments necessary for canal maintenance disrupts vast underwater systems that may be harmful to the prosperity of entire landscapes (Mendelsohn, 2018). The churned-up sediment in both extraction and deposition sites creates dust plumes that suffocate fish, block sunlight from submerged vegetation, and threaten coral reefs, mangroves, and other ecosystems at great distances from the deposition site, the side effects of which are experienced more by rural communities than urban dwellers (Bendixen et al., 2021; Bendixen et al., 2023; Mendelsohn, 2018).

The excess of aggregates resulting from canal excavation also provides the resource base for authorities of canal construction to transform landscapes via land reclamation further afield from the canal itself. The political motivations underlying land reclamation projects born from the spoils of canal excavation and executed since then are acutely demonstrated by a uniquely colonial and capitalistic undervaluation of coastal ecosystems such as swamps, mangroves, deltas, and brackish water as inutile spaces better suited for human inhabitation and urban expansion. The replacement of such key ecosystems with solid ground, ironically advertised as a sustainable defense against coastal erosion and flooding in the modern context, erases natural buffers against erosion and reduces the capacity of the area to absorb and filter floodwaters (Mendelsohn, 2018; Gbonegun, 2021; Dawson, 2021b). The sustainable development rhetoric of land reclamation thus highlights a prioritization of urban spaces and communities over natural and rural ones, and a clear disconnect between unregulated aggregate extraction policies and a holistic understanding of sandy environments (Mendelsohn, 2018; Torres et al., 2017; Zhong et al., 2022).

2.2. Infrastructural Displacement

Continuing the bent that both natural and urban landscapes are produced by human activity, it is important to note that the Panama Canal was not just an infrastructural project, but a project of territory and settler colonial place-making at its core (Carse, 2014). The pursuit of the American Isthmian Canal Commission to create a year-round shipping channel across the narrowest point of the so-called New World served as the technical and political justification to remake an entire region, including the erasure of established urban hubs along the original riverbanks and resettlement of thousands of people to two port cities (Carse, 2014; Lasso, 2019). Therefore, the environmental impact of sand extraction via the infrastructures of the Panama Canal and land reclamation projects must be positioned within a broader discussion of natural materials mobilized within a system fueling colonial place-making and local displacement.

Recall Dawson's (2021a) emphasis on the ecological and social effects of sedimentary gains and losses spliced across regions (see Chapter 1. Introduction). This de and reterritorialization of nature is fueled by a particular idea of what a good human landscape should look like and is often made possible by dispossessing people who are incompatible with this image of their lands and livelihoods (Heynen et al., 2006). The construction and century-long assumption of American control over the Panama Canal did just this by razing established towns and creating Americanized spaces in their place, the primary objective of which was access to territory and security of Western infrastructure (Lasso, 2019). Today's image of the canal nestled within a lush and impenetrable jungle seems natural to the socio-ecological setting, though it is only the most recent version of a landscape wholly constructed by settler activities.

Braverman (2021) explores the slow violence imposed by infrastructure through the accumulation of social and environmental harms imposed by urbanization. Such violent infrastructure is exemplified by the Panama Canal, not only as the physical technologies of the canal locks and shipping ports, but also the policies, power structures, and institutions that stand behind the funding and maintenance of these physical things (Carse, 2014; Larkin, 2013). Urban spaces founded on reclaimed land in Panama City also represent an especially powerful infrastructure wielded by elite stakeholders that can displace disadvantaged groups and reinforce dominant power structures. Building on Braverman's (2021) premise that social and environmental security are inseparable and integral to equity efforts, the ecological implications of the Panama Canal discussed in the previous theme also invite an exploration of the ways infrastructure provides the basis and mould for social composition and organization.

2.3 Development Discourse

As the last two themes make clear, I consider the Panama Canal and surrounding land reclamation to be infrastructural projects with importance and influence far beyond simple functionality. Instead, they are manifestations of continuous selection, funding, and implementation of political commitments toward some development goals but not others (Larkin, 2013). The development discourses surrounding the Panama Canal and land reclamation in Panama City thus present a useful lens through which to examine how certain types of social exchange and interaction are favored in past and contemporary socio-economic moments. As such, I present infrastructure as a manifestation of old and new desires and frustrations of a society, which are, especially in reference to the desires and frustrations of elite stakeholders, always deeply political (Larkin, 2013).

Drawing on the work of Carse (2104), Larkin (2013), Mitchell (2002) and other anthropological studies of infrastructure, I argue that endeavors of modernity, capitalism, and globalization driving continued investment in the Panama Canal are founded on the natural, the material, and the technological (Mitchell, 2002). In other words, the politics of development and economic growth is “a politics of techno-science" (Mitchell, 2002, p.3), or the combination of human ingenuity and natural resources enabling the imperial project of humans overcoming nature, progressing modernity, and gaining status in a globalized economy.

Our human landscapes, extended to the very ground beneath our feet, are created by such mobilization, and discursively scripted commodification of all non-human matter (Heynen et al., 2006). Reclaimed land in Panama City absorbs and displays a particularly interesting account of local and global politics. Modern promotors of contemporary land reclamation projects in Panama City cite smart, sustainable, and resilient infrastructural strategies that will elevate the city to equal importance and esteem as the canal from a global perspective as the basis for their development ambitions. These latest coastal areas represent the most recent chapter in a living archive of physical and social transformation defined in memory as the ideals of what each project intended to achieve. However, as is exemplified by the politically motivated mobilizations of capital and resources used to construct the Panama Canal and subsequent land reclamation projects, the aggregates needed for these projects are extracted in the context of uneven power dynamics stacked against poor communities displaced by development, and gentrification processes favoring wealthy city-goers, thereby reinforcing vulnerabilities within the city and its hinterlands (Dawson, 2021a, p.1008).

In summary, “infrastructures produce environments and vice versa” (Carse, 2014, p.6). On the one hand, natural environments provide the materials for technical systems and social organization, on the other, they create ‘natural’ realities that give rise to political hierarchies of winners and losers (Carse, 2014). Like natural environments, they compete against one another to serve different purposes, ideologies, political agendas, or communities (Carse, 2014). I posit that infrastructures and the raw materials they are born from are not just technical-functional achievements but equally drive and emerge from social and ideological desires (Larkin, 2013; Mitchell, 2002). Such infrastructures are commonly advertised in terms of progress, innovation, and modernity and it is for this reason that they must be introduced to the territory of geophysical, environmental, and social justice (Larkin, 2013).

Chapter 3. Methodology

In this chapter, I present the methodological approach I undertook to explore the geosocial history of Panama City and its hinterlands during four months of in-situ fieldwork. I recount my three chosen methods: archival and museum research, semi-structured interviews and collaboration, and ethnography, all of which should be considered in relation to my positionality as an outsider to my locale of study, and the ethical dilemmas arising from this relationship.

3.1. Positionality

I arrived in Panama City in May of 2023 as a stark outsider with only a vague understanding of the city and the canal, rudimentary Spanish, limited familiarity with Panamanian culture, and few connections save the professors from McGill University facilitating the semester abroad program of which I was a part. I set out with the overarching goal of studying how shifting sands tied to the Panama Canal could tell a story of physical and social landscape change, with the intention of identifying the movement of sand to and from the entirety of the Panama Canal from its inception in 1904 until today. The broad nature of my research objectives, both conceptually and geographically, and my newness to the canal and its history led to an innumerable number of possible questions and directions of study, most of which I chose to forego due to time constraints and the reasonable impossibility to pursue so many potentials. As will be demonstrated by the length of Chapter 4: Historical Context, I spent the bulk of my fieldwork trying to grasp the rich socio-environmental history of the region to better understand what kind of forces are at play in each moment and locale explored in this study.

In full acknowledgement of my otherness as an English and Canadian person visiting and studying Panama for the first time, I approached every aspect of fieldwork and analysis with a heightened sensitivity to the way my culturally entrenched beliefs and ideologies may impact my language and the lens through which I retell Panamanian stories. For this reason, throughout analysis and writing, I have screened my amalgamation of messy scrawls and sticky notes to represent the moments and locales in which my findings were supported and informed my Panamanian perspectives, in addition to my own ideas. I strived to adopt a practice of constant questioning of the power imbalances permeating written and visual data collected from archives, presenting myself as a learner and a listener rather than a surveyor in all interviews and instances of collaboration, and traversing the physical spaces of my study with a critical eye as to what ideologies and knowledge systems form both the actual appearance and my perception of these places.

3.2. Archival and Museum Research

To begin compiling a list of key sources and highlighting names of knowledgeable authors and historians, I thought a logical place to begin would be the Panama Canal Library, formally known as Biblioteca Presidente Roberto F. Chiari. The library, a grandiose whitewashed building with large windows and a terracotta roof, surrounded by the manicured lawns and identical buildings of the former U.S. Canal Zone, reminiscent of the garden town utopia of the 20th century, is a statement of the American legacy in Panama itself (see Figure 3.2.1). The modern interior is decorated with framed records, photographs, maps, and artwork documenting the construction of the canal.

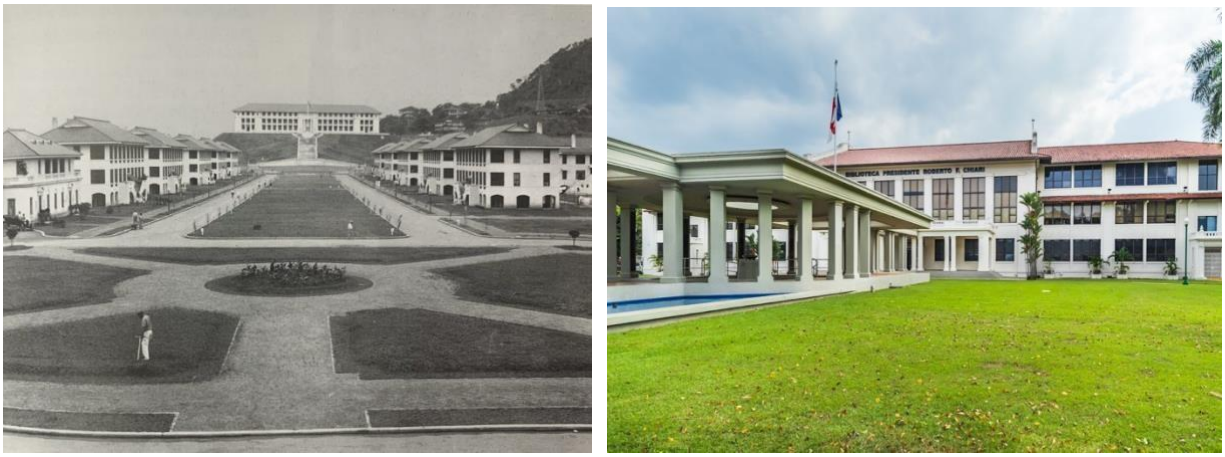


Figure 3.2.1. Panama Canal Authority 1915 (left) and the Panama Canal Library 2024 (right) (McMichael Reese & Reese, 2013; Google Maps Photos)

Here, my primary goal was to obtain digital scans of the Canal Records and Annual Reports published by the Isthmian Canal Commission for the U.S. construction period between 1904 and 1914, the Environmental Impact Assessments of modern canal expansion from 2007 to 2016, and photographs documenting dredging, excavation, land reclamation, and social life surrounding the canal before construction until today. I was able to retrieve the Annual Reports for 1904 to 1914, except for 1906, and Canal Record Volumes I through IX for the years 1908 through 1916 from the library digital archive, alongside 42 historical photographs of canal construction and maintenance spanning the years between 1904 and 1938[1].

My archival research continued, by virtue of my participation in a McGill University and Smithsonian Tropical Research Institute (STRI) shared semester abroad program, in the STRI library

[1] This archive is not available online through a personal computer but is easily accessible via the library computers, from which I transferred meaningful files to my personal McGill OneDrive via Dropbox.

and archive. Here, I foraged through a draw on the main floor of the library labelled Maps of the Canal Zone, most of which are authored by the US Army. I photographed three maps in particular due to their detailed display of the canal route and borders of Gatun Lake: 1) *Republic of Panama: General Map of the Lands and Waters of the Panama Canal Treaty*, prepared and printed by the Defense Mapping Agency Topographic Center (DMATC), 2) *Balboa* prepared by the U.S. Army Map Service 1947, and 3) *Gatun* printed by the U.S. Army Map Service 1956. Finally, I flipped through *ICC Maps and Plates 1908-10*, a volume found in the STRI-restricted archive, to photograph several maps displaying the floodplain of Gatun Lake and documenting estimates of excavation and dump reports.

While these documents served to provide information regarding the uses and relocation of sand excavated from both canal construction and expansion, I also invested several days in browsing the collections at the Panama Canal Museum and the West Indian Museum for a thorough understanding of the social history defining these infrastructural achievements. The Panama Canal Museum provides an overview of Panamanian history from Andean civilizations until today, the focal points of which are portrayed as the French attempt to build a sea-level canal, the American triumph of constructing a lock-based canal, and the years between 1914 and 1999 characterized by civil unrest and Panamanian opposition of settler presence at the heart of their country. The Afro-Caribbean Museum emerged as an equally informative space as a cornucopia of silver worker stories, that is, the experiences of Black workers heeding largely from the Caribbean ascribed to a lesser rank than Gold, or Caucasian, employees of the Panama Canal.

3.3. Interviews and Collaboration

While archival research provided a foothold for deeper exploration, most of my most meaningful fieldwork was conducted via interviews and collaboration with knowledgeable individuals kind enough to lend their time and expertise to my project.

Before setting off for Panama, I had the privilege of speaking with Dr. Ashley Carse about his research on the Panama Canal, which culminated in his book *Beyond the Big Ditch: Politics, Ecology, and Infrastructure at the Panama Canal* (2014), to inquire about initial research leads and advice for my upcoming fieldwork. I am hugely grateful for Dr. Carse's initial advice (which would ring bitterly true in the coming months) to define a narrower research question and know what to look for before diving into an abyss of interesting topics and complex geo-social histories.

Mr. Jean-Sébastien Pourcelot, head of research and documentation at the Panama Canal Museum, was the first scholar in Panama to generously offer some of his time to lead me through the catalogue of sources backing the public exhibits of the museum and suggest specific locales of

land reclamation in Panama City. After one meeting, during which I identified the area surrounding what is now known as El Mercado de Mariscos (The Seafood Market) as a potential place to concentrate my fieldwork. The following week, I returned to the upstairs offices of the Panama Canal Museum to meet with two of Mr. Pourcelot's colleagues, who proceeded to provide me with a stockpile of valuable literature reviewing the architectural, and by extension, social transformation of Panama City including *El Canal de Panamá y su Legado Architectónico (1905-1920)* by Carol McMichael Reese and Thomas F. Reese (2013), *Ampliación del Canal de Panamá; Primer año 2006-2007* by the Autoridad del Canal de Panamá, *Architecture of the Panama Canal: Civic and Residential Structures and Townsites* by Edith Crouch (2014), and *Archictura de la epoca del Canal 1880-1914* by Samuel Gutierrez. Despite my broken Spanish and vague research questions, Mr. Pourcelot and his colleagues were patient, and understanding, allowing me to include informative imagery from the aforementioned sources in the following chapters.

I am indebted to Dr. Marixa Lasso and Dr. Tomás Mendizábal from the Public Interest Association for Historical Anthropological and Cultural Research for their generous guidance and provision of resources in the early stages of my fieldwork. I met with Dr. Lasso, author of *Erased*, the book that formed the foundation and initial inspiration to study the Panama Canal, in my third month of fieldwork seeking resources and recommendations of where to concentrate my research. She was the second of many valued mentors to snap me back into reality and encourage me to focus on just one or two neighborhoods, rather than the entire canal over 100 years. She fueled my excitement to dig deeper into the changing coastline of Panama City and kindly referred me to her coworker, Dr. Mendizábal who shared his collection of historic maps of Panama City and the Canal Zone with me, some of which are pictured in Chapter 4: Historical Context, and Chapter 5: Empirical Results, and serve as evidence for coastal expansion at the mouth of the canal and in Panama City. After returning to their office with a USB stick to store over 30 maps graciously loaned by Mr. Mendizábal, I finally felt like I had a better grasp and direction on my research project.

At the West Indian Museum, I had the immense pleasure of speaking with Melva Lowe de Goodin, a Panamanian with Jamaican heritage and a wealth of stories to tell about her upbringing in the old Canal Zone. I reached out to Melva to ask if she would be willing to share her knowledge about the canal from a local perspective, and I was absolutely blown away by her and one of her colleague's willingness to share their experiences living through the era of American jurisdiction of the Canal Zone and later, the turnover of the canal to the Panamanian government. After

explaining the research aim and questions of my project, I sat back to listen to Melva recount her childhood as the daughter of a Black canal worker in the neighborhood of La Boca, and her family's later displacement to a different neighborhood further up the canal. A second member of the Society of Friends of the West Indian Museum who grew up in the neighborhood of Guapachí, now known as El Marañon, imparted a different upbringing as the daughter of a pharmacist. What stood out to me after this conversation was how the two families from the Caribbean pursued distinct ways of making a home and finding community in Panama, and how the canal impacted their livelihoods in unique ways.

Also at the West Indian Museum, a researcher and museum curator kindly allowed me to look through the cluttered bookshelves in the back office documenting Black Panamanian existences and contributions to the city, canal, and country. There, I skimmed over and photographed *La Vivienda Urbana de Panama* by George W. Westerman (1955), *Los Inmigrantes Antillanos en Panama* by George W. Westerman (1980), *Panama and the Canal in Picture and Prose* by Willis J. Abbot (1913), and *The West Indian Worker* by George W. Westerman (1951) and have referred back to them several times, predominantly for a visual understanding of the urban scenes of Panama City and the canal throughout the 20th century.

Finally, in the final few weeks of my time in Panama City, I participated in an urban studies module instructed by Professor Ariel Espino. Throughout this course, I became familiar with the individual neighborhoods constituting Panama City and was inspired to examine the origins of El Mercado de Mariscos in greater depth. The bulk of this course took place on the move as my cohort and I paced our way through Casco Viejo, the Cinta Costera, and surrounding areas led by the voice of our instructor. Following our final lecture with Professor Espino, I approached him to ask for a copy of the lecture slides he presented on the Cinta Costera, which now supplements my third locale of study examined in Chapter 4: Empirical Results.

3.4. Ethnography

I engaged with the practice of ethnography as a student, a researcher, and a tourist within the modern spaces described in Chapter 5: Empirical Results. My accommodation in Panama City was located at the intersection of Casco Viejo, the original limit of Panama City, and the Market Districts founded on reclaimed swampland of the canal construction period, skirted by the modern land reclamation project of the Cinta Costera, all of which became keystone locales of this study. I traversed these spaces for relaxation, recreation, and running errands, thereby participating in everyday ethnography as well as a few intentional ethnographic excursions. As such, I do not claim

that there is any hint of objectivity to my ethnographic fieldnotes, but instead, emphasize my presence in the data and the ways my perceptions and sensory experiences inform all ethnographic findings.

The value of this habitual ethnography was my ability to engage with these locales in the way some are intended to be experienced. I explored the Cinta Costera, pictured in Figure 3.4.1, as a member of its intended participant pool, that is, a tourist strolling through a new city and marveling at the cleanliness and peacefulness of this coastal walkway. Similarly, I ventured to the Mercado de Mariscos to try out local dishes and famous ceviche to appreciate the work of skilled fisherpeople and chefs based in Panama City.

Figure 3.4.1. A Stroll Along the Cinta Costera (Author)

Throughout the days I spent intentionally exploring the neighborhoods of Santa Ana, El Marañon, and El Barrio Chino, I walked the streets with a notebook and camera and tried to pay attention to how these spaces act as meeting places for different activities and demographics. On several occasions, I would set out along the Cinta Costera and then make my way through side streets of these neighborhoods to notice the ways different livelihoods and urban forms interact and intersect, as is exemplified by the contrasting architectural styles and periods pictured in Figure 3.4.2.

Figure 3.4.2. Urban Intersections (Author)

These observations of modern-day Panama shed light on the ways in which social memory is manifested in or hidden by contemporary structures. I frequently returned to my own photographs and fieldnotes to remember how certain urban scenes made me feel or how they reminded me of local stories or my knowledge of the region, supplemented and informed by the teachings and knowledge imparted by the individuals acknowledged above.

Chapter 4. Historical Context

The goal of this chapter is to situate this paper in the appropriate historical context of Panama City and its hinterlands and describe my arrival to each locale of study. It provides a summary of what I learned while traversing museums and city streets, as I came to realize that I was not witnessing a static landscape but exploring only the most recent moment of a living archive of physical and social history. It details why this project could not have been completed from only a geographical or anthropological point of view, and why I chose to incorporate elements of historical and urban study as well. The key events elaborated below and summarized in Table 4.1 are included due to their eventual contribution to the social demographic and geophysical landscape of Panama City and its hinterlands. The color-coded scheme of Figure 4.1 refers to the chronological segmentation according to which I will go on to organize my empirical results.

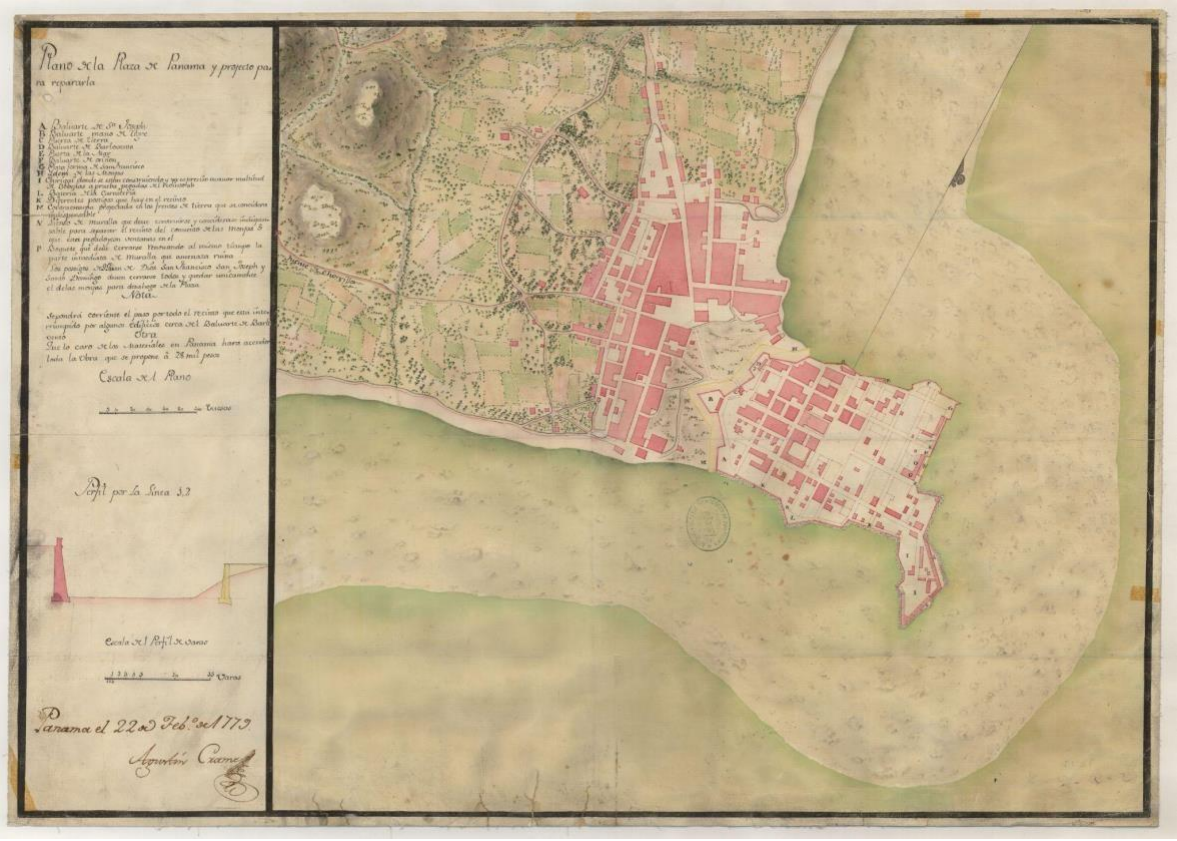
DATES	KEY EVENTS	THE LIVING LANDSCAPE
1519	Panama City is founded by a Spanish conquistador, launching Iberian conquest of the Incan Empire.	Fleets of European ships anchor on both sides of the isthmus as mules, boats, and later, the railroad, transit precious metals and artifacts from Andean civilizations to the North, passing by European goods and slaves heading South. Towns along the two main trading routes emerge and expand, populated by Panamanians, tradespeople, and freed slaves who provide respite and hospice to trans-isthmian travellers.
1673	Panama City is rebuilt within a fortified peninsula after it was ransacked and burned by pirates.	
1855	The Panama Railroad is completed and used to ferry goods and people to the Californian gold rush.	
1867-1898	Construction of a sea-level canal is attempted by the French, only to be abandoned after significant loss of life and financial scandal.	Large areas of swampland and shallow seabed are reclaimed in the two port cities, Panama City and Colón. Much of this is used for industrial port facilities and neighborhoods like La Boca to house huge influxes of Afro-Caribbean workers. Pacific coastal reclaimed lands outside of the Canal Zone, including the neighborhoods of El Marañon and La Exposición, are populated by immigrant communities heeding largely from the Caribbean, China, and India. Following depopulation of the Zone and the completion of the Panama Canal the Zone becomes a distinctly White American space while descendents of non-White communities are largely relegated to the margins of the port cities.
1904	The American Isthmian Canal Commission assume ownership of the canal project and the Canal Zone.	
1908-1911	The Isthmian Canal Commission fail to preserve the trans-isthmian towns of the Zone and replace them with pristine jungle and Gatun Lake.	
1914	The Panama Canal is completed shifts and employment away from labor for non-White workers towards skilled employment for White professionals.	
1959-1962	The Bridge of the Americas is constructed to improve ease of access to the growing Panama City.	La Boca is physically and socially transformed from a Black tenement community to a White suburb.
1999	The Panama Canal Treaty turns the Panama Canal over to Panama with no official Canal Zone territory.	The Panama Canal becomes an emblem of Panamanian pride and prosperity, yet the natural and urban environment of the old Canal Zone live on as reminders of settler colonialism. Projects like the Cinta Costera work to elevate Panama City to the same caliber of esteem and importance as the canal. Neighborhoods populated by descendents of immigrants from the construction period face pressures of gentification as a result of such projects.
2007-2016	The Panama Canal is expanded under Panamanian jurisdiction to allow for larger cargo ships to pass through.	
2007-2024	The Cinta Costera I, II, III reclaim land along the Pacific Coast of Panama City, expanding on the reclaimed lands of canal construction.	

Figure 4.1. Relevant Timeline of Panama City and its Hinterlands, 1519-Present (Author)

While recognizing that the timeline of Panama's history does not begin, but is rather built upon millennia of human habitation, the earliest moment relevant to this study occurred in 1519 when Panama City became the first European port in the Americas (Porras, 2008). Located at the

narrowest point of the isthmus separating the Atlantic from the Pacific oceans, the city was neither quaint nor quiet, but rather served as a keystone of global trade that launched Iberian conquest of the Incan empire (Lasso, 2019; Porras, 2008). Throughout the 16th century, fleets of Spanish ships anchored on either side of the isthmus as mule trains ferried precious metals and artifacts from Andean civilizations north, passing by European goods and African slaves heading south (Lasso, 2019; Porras, 2008). Trading outlets emerged in towns along the Camino de Cruces and the Camino Real, the two routes carved by mule trains and small boats.

Panama City was rebuilt in 1673 after the first settlement was ransacked and burned by Henry Morgan and his pirates (Espino, 2008). This time, traumatized residents isolated themselves within fortified walls on a small, defensible peninsula (see Map 4.1). Unlike most Iberian settlements of the time that were constructed on the premise of growth, Panama City remained literally walled with no room for formal expansion (Porras, 2008). Over a century of trans-isthmian trade, settlers of European descent densified within the city proper while informal settlements of a diverse demographic exceeded them in both population and space outside of the city walls. The racial segregation that resulted in densification within the peninsula and sprawl on the margins laid the foundation for issues of urban dysfunction and social segregation that land reclamation projects in modern-day Panama seek to address.

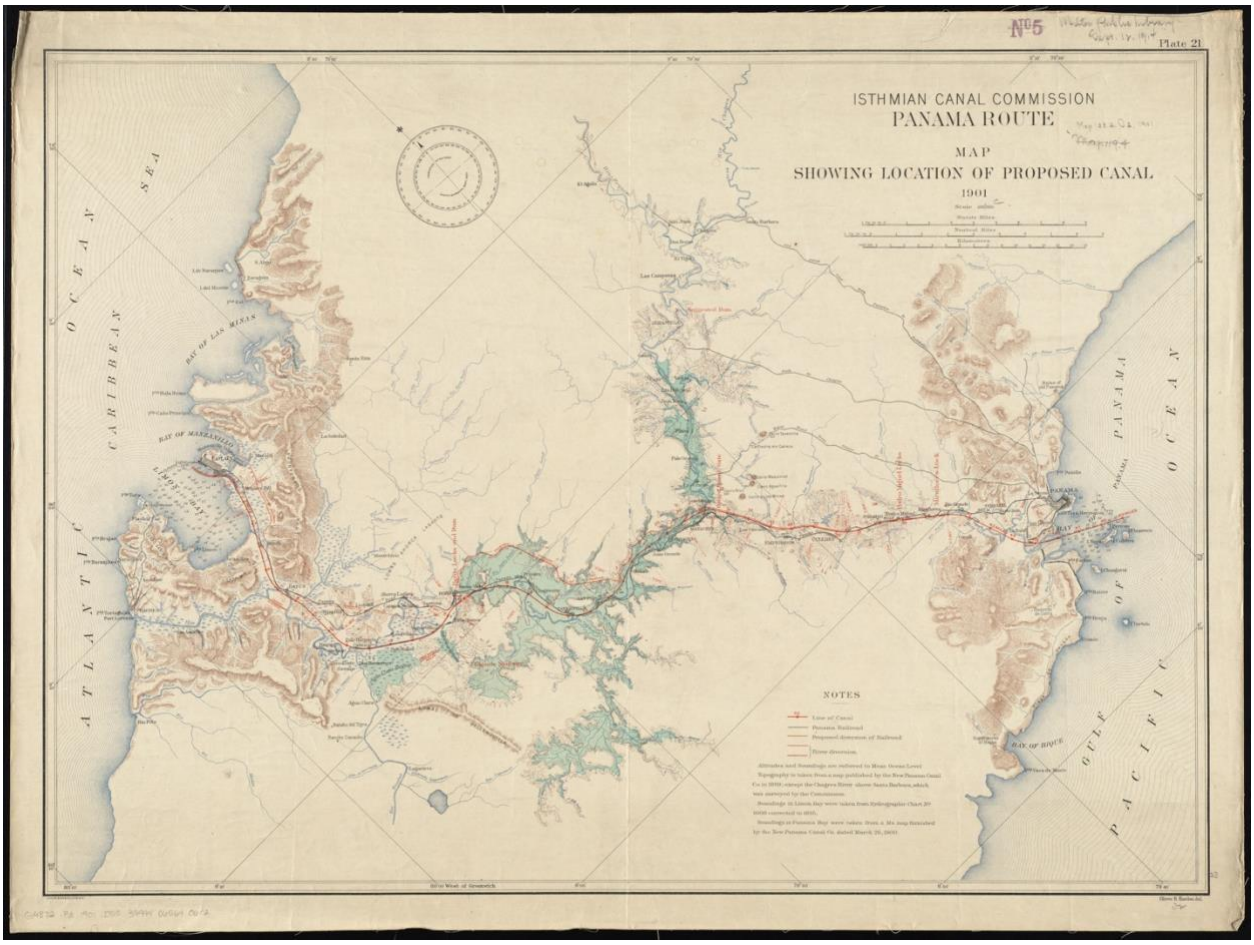


Map 4.1. Panama City, 1779

Source: Loaned from archaeologist Dr. Tomás Mendizábal of the Public Interest Association for Historical Anthropological and Cultural Research.

4.2 1855-1914: Construction of the Panama Canal

When European traders became adept at navigating a route around Cape Horn at the base of South America, the Isthmian trading routes entered into a long period of decline, only to be revitalized in 1855 with the construction of the transoceanic railway needed to transport goods and people west to reach the Californian gold rush (Porras, 2008). Boom trade continued with the French attempt to construct the first sea-level canal, a feat characterized by great hardship and loss of life in the supposedly uninhabitable harsh tropical conditions (Lasso, 2019; Porras, 2008). In 1898, after a financial scandal and deaths due to malaria, the project was abandoned, to be taken up again in 1904 by the United States Isthmian Canal Commission.



Map 4.2. Proposed Canal Route, 1901

Source: Loaned from archaeologist Dr. Tomás Mendizábal of the Public Interest Association for Historical Anthropological and Cultural Research.

What is missing from most official accounts of canal construction is the existence of established towns lining the old river networks and footpaths populated by a mix of people having arrived there due to centuries of global trade (Lasso, 2019). Map 4.2 includes the names of several towns tracing the river Chagres that have now been flooded and overgrown by a lush tropical forest. The present landscape was not the outcome of natural or necessary processes, but politically and racially motivated decisions to transform what was previously known as the Canal Zone into a pristine, sanitary, and distinctly American space. Panamanian scholar Marixa Lasso reflects on the presence of the Canal Zone here:

> I remember being told that throwing a candy wrapper on a sidewalk in the Zone would bring punishment. But what I remember most vividly is the luxuriant green of the Zone's tropical jungle. Little could I have imagined that there was nothing virgin about the jungle landscape typical of the Zone, that it was a twentieth-century creation that had erased 400 years of local urban and agricultural history. (Lasso, 2019, p. 2)

At this moment in Lasso's (2019) book *Erased*, she is thinking back on her childhood in Panama and having to cross the Canal Zone every time she and her family wanted to leave Panama City. The Zone, a ten-mile width of land bordering the canal on either side was and is still today, defined by a dark green stretch of thick jungle. She goes on to explain that this lush environment is not the product of natural history, but the newest form of some of the previously most densely populated areas of the country.

Upon arriving in Panama and traversing the Canal Zone, I too was struck by the expanses of green that seemed indigenous to the canal corridors and Gatun Lake which makes up much of the waterway. In between obviously industrious lock systems and shipping ports, the expanse of Gatun Lake decorated with fragmented islands and curbed by monkey-inhabited forests bears no resemblance to the centuries-old trading routes and towns that inspired the Panama Canal. Lasso's (2019) description of the Canal Zone set me on the path to examine the Panama Canal and the spaces it consumes as evidence of infrastructural displacement and a current physical artifact of social memory made invisible to the naked eye.

The town of Gorgona, in particular, located on the Chagres River was once a hub for trade and rest as travelers changed from river transport along the Chagres to walking or mule transportation across the rest of the land mass. By the time US construction of the canal began in

1904, towns like Gorgona splayed across the canal route were not minimal communities of camps of Indigenous Panamanians interrupting the tropical wilderness, but established cities with a mix of cultural places of worship, schools, town squares, brothels, residences, street names, taxes, cemeteries, council and democracy fundamentally indicative of European influenced lifestyles, and people who had lived for centuries facilitating trade across the isthmus (Lasso, 2019).

Other towns reached their peak not during the foot and boat traffic of earlier centuries, but throughout the heyday of the trans-isthmian railroad. Empire (see Figure 4.2) became the second largest town in the Canal Zone by 1912, second only to the town of Gatun that expanded throughout the American construction period. The entire construction period of the Panama Canal was sustained by towns like Gorgona and Empire that provided most services fueling the Canal Zone's economy and key housing sites for construction workers (Lasso, 2019). Many townships that existed during the days of mule and boat transport exploded during canal construction into residential and industrial centers so much so that one American census enumerator described Gorgona as "the Pittsburgh of the [Canal] Zone" (Lasso, 2019, 74).

Figure 4.2. Empire, 1912 (Gutiérrez, 1984)

And yet, the withstanding legacy of American engineering in the tropics remains a wonder of Western ingenuity contrasting a great impenetrable landscape, rather than a shared technological modernity between existing townships and engineers. Just as the immense and skilled labor of black workers on the canal would not be acknowledged for decades, the "native" workers and landscapes were purposefully dissolved into a backdrop of lush greenery engineered and maintained in the US-controlled and occupied Canal Zone. Even the Chagres River itself was not an untouched landmark of the impenetrable jungle but was becoming an increasingly important transit route receiving regular uptake and cleaning to ensure the timely delivery of people and goods. American racist attitudes still demonized many accounts of the boatmen and residents of trans-isthmian towns, mocking and diminishing tropical innovation onto primitive encampments (Lasso, 2019).

At the same time as canal-route towns were sustaining the service and residential economy for canal construction, Panama's port towns of Panama City and Colón experienced an equal boom period, characterized by waves of immigrants arriving to take advantage of economic flourishing and large areas of swampland and seabed filled in by the spoils of canal construction. The Panama Canal brought an absolute minimum estimate of 40,000 laborers to the country, not to mention those who arrived to start their own businesses or worked elsewhere, all of whom required housing in the port cities or towns within the Canal Zone (Lasso, 2019).

Housing and sanitation emerged as a main driver for land reclamation on the Pacific coast as the US canal authorities concluded that a good use for the excess aggregate produced by canal excavation could be put towards residential spaces for the Afro-Caribbean employees or urban development in Panama City billed to the Panamanian government (Isthmian Canal Commission, 1911). Interestingly, Afro-Caribbean, Chinese, and Indian populations came to be the ones who created homes and communities on top of reclaimed land both in and outside of the Canal Zone. The spaces created by pouring aggregates onto seabed at the mouth of the Pacific canal entrance, and mangroves and swampland lining the current coastline of Panama City emerged as the most strikingly diverse and vibrant neighborhoods in the city. Notably, the neighborhoods of La Boca, El Marañon, El Barrio Chino, and La Exposición discussed in greater depth in Chapter 5: Empirical Results were born from land reclamation during the construction period but have since been socially transformed and physically expanded as a result of modern land reclamation.

4.3. 1908-1911: Relocation and Erasure

The years between 1908 and 1911 marked a political transition within US Canal authorities regarding the decision to simply relocate existing towns and worker camps outside of the flood and industrial development Zones, or to eliminate "native" towns altogether (Lasso, 2019). Opinions ranged from the welcome of economic benefit brought by the taxation of existing businesses to disdain for keeping native town housing styles and businesses such as saloons out of the Zone undertoned by racial and socioeconomic prejudices, especially near the ports. The decision resolved to expel native residents of the Zone without consideration of relocation or compensation under the assumption that the growth of the port cities would accommodate rural to urban migrants. The Canal Authorities envisioned the Zone to be a sanitary place of modernity and technology incongruent with the native-style housing and tenement houses, often referred to as slums.

The reasoning published by President Tuft to depopulate the Zone alleged that all land and waters within Zone borders were necessary for construction, operation, sanitation, protection, and maintenance of the canal, yet no evidence of this reasoning is documented in 1911 debate between canal administrators gave their testimonies. Chief Engineer Goethals considered a thick jungle as the best military protection of the Zone rather than populated urban spaces to prevent large and small armed groups from infiltrating the key industrial area. Goethals used racist language characterizing existing inhabitants of the Zone as dirty and unsavory to disguise the failure of several attempts to merge the "sanitary Zone" with existing townships, to justify eradicating rich cultural and urban areas and turning them into le. Eventually, the decision to depopulate the Zone prevailed for no reason other than racially motivated desires to expel native town populations and attract white residents (Lasso, 2019).

While canal narratives emphasized the triumph of American engineering, the people of canal route towns were never credited in the story. These towns had to be stripped of their political and economic autonomy to fit the rhetoric of primitive people in the rough wilderness These retellings would have long-term effects, as the landscape of the Zone was engineered into a luscious green forest, and deep historical connections and legacies were effectively overgrown (Lasso, 2019). As the canal took form, the Canal Zone modelled garden city etiquette with dispersed and evenly populated centers separated by their calm and supposedly natural environment (Porras, 2008).

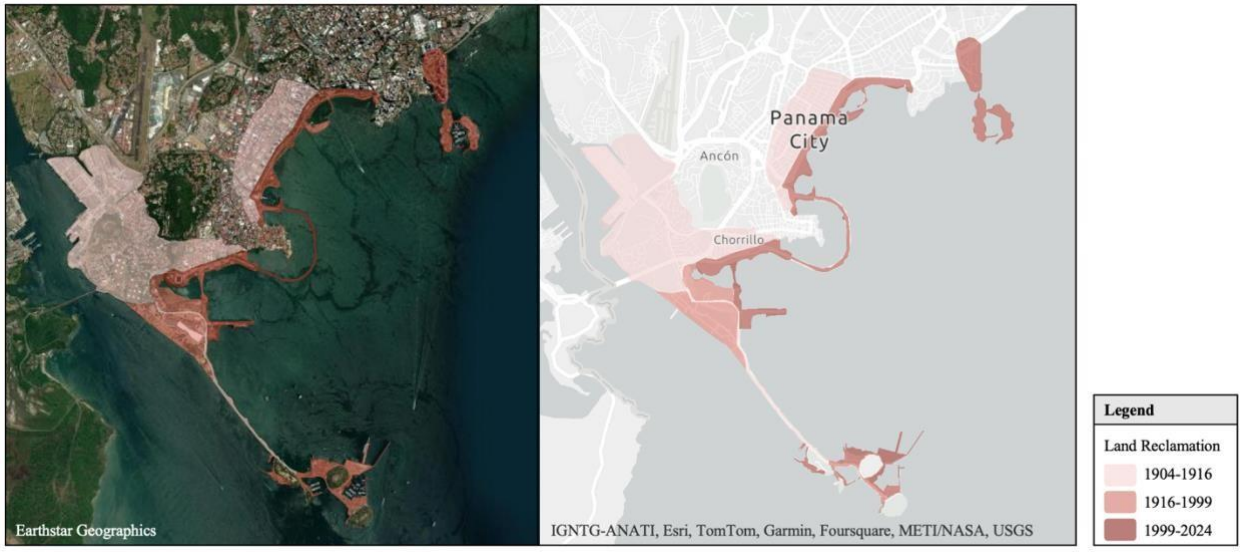
4.4 1914-2024 The Spoils of Construction

After the completion of the canal in 1914, the importance of protecting the ecological integrity of watersheds to maintain the proper function of the canal transformed the Zone into a green enclave dotted with urban utopias among an otherwise haphazard urban landscape characterized by rapid urban expansion and relocation of non-White residents (Porras, 2008). Throughout this intriguing reconstitution of Isthmian urban forms, Americans envisioned the Zone as a preserve of civilization struck through the disorganized and impoverished tropics (Gordon, 2023a; Porras, 2008). This attitude did not go unnoticed by Panamanian residents, as was exemplified by the riots leading up to the transferal of the Panama Canal from American to Panamanian hands in 1999.

In the areas immediately adjacent to the walls of the first Panama City, the legacy of segregation, displacement, and elimination of non-white faces from white spaces lives on in predominantly African and Asian descendent neighborhoods bordering on the old wall of Panama City. The implementation of the Canal Zone additionally gave rise to a process of expulsion of the native population and canal workers to the tenement neighborhoods that populate the margins of Panama City. Though the canal has become a point of pride and prosperity for Panamanians today, it is clear to see how the green strip of the American Canal Zone and social demographic of reclaimed lands remain a reminder of settler colonialism in the heart of the country.

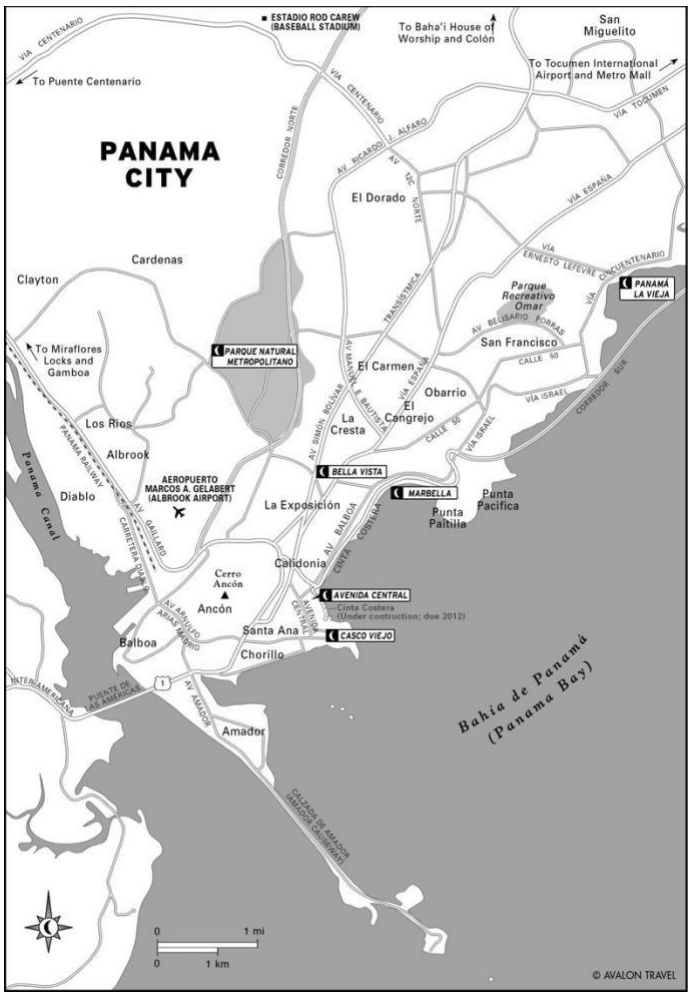
Chapter 5. Empirical Results

My fieldwork revealed a series of stories of social change embedded in living landscapes. It taught me that land reclamation, while promoted as a process of expansion and development, can also be a process of dispossession and displacement. The waterfront of Panama City offers several examples of this, as centuries of land reclamation replace and expand upon one another, each wave invites a new social demographic, discourse of development, and environmental transformation (see Map 5.1).



Map 5.1. Land Reclamation in Panama City, depicted on aerial imagery and greyscale, 1904-2024 (Author)

As is demonstrated by the lightest shade of pink in Map 5.1, throughout the canal construction period between 1904 and 1914, Panama City's waterfront underwent extensive change. The old mouths of the Rivers Grande and Corundú bordering the canal entrance were filled in with aggregates from channel excavation, on which the towns of Albrook, Curundúm, Diablo, La Boca, Chorrillo, and Balboa would be built. At the same time, the Amador causeway, a narrow strip of road was constructed to connect the old shipping ports on the islands of Pericos, Naos, and Flemenco, together. Land was also reclaimed on the opposite side of the original walled city on the peninsula, birthing the neighborhoods of Santa Ana, El Barrio Chino, and El Marañon. Shortly after the canal was completed, mangrove habitats and swamps extended even further down the shore were reclaimed to create the neighborhoods of La Exposición and Balboa Avenue (Gordon, 2022). See Figure 5.2. to georeferenced the location of some of the neighborhoods mentioned above.



Map 5.2. Neighborhoods of Panama City (Hachette Book Group, 2013)

As shown by the darkest shade of pink in Map 5.1, the already widespread popularity of land reclamation would see another spike after 1999, catalyzed by the city's real estate boom and government initiatives to expand residential and commercial areas. From 1999 until today, the coastline has witnessed the addition of the Punta Paitilla and the Punta Pacifica Islands, as shown in Figure 5.1. and in the top right corner of Map 5.1. These areas offer luxury and exclusive residential areas in view of the city skyline, targeted predominantly towards foreign investors and holiday homemakers. Additionally, landfills surrounding the three islands of Naos, Perico, and Flamenco would be compacted for commercial development, catering to high-end restaurants and cruise ship patrons. And, most noticeably, almost the entire coastline of Panama City was expanded by the Cinta Costera projects I, II, and III advertised as a way to create green space, decrease congestion, and serve as a tourist landmark. This latest era of land reclamation replacing naturally occurring mangroves and beaches is characterized by urban development promoted as a benefit for the public, but more realistically catering to foreign elites interested in pristine, scenic, and prestigious residential and commercial spaces (Gordon, 2022).

Figure 5.1. Punta Pacifica Islands (Author)

This chapter concentrates on three case studies of Panama City's coastal expansion from 1904 until today to relive eras of social change permeating layers of sand and concrete below ground. I begin by exploring the birth and establishment of La Boca as a Black tenement community created as a pragmatic solution to a demand for housing and an excess of loose ground. I go on to demonstrate how the following construction of the Bridge of the Americas displaced the original inhabitants of La Boca, one sandy infrastructure is thereby usurped by a steel one representing the latest idea of a social good. I then shift focus to the inner-city neighborhoods of Santa Ana, El Barrio Chino, and El Marañon, henceforth referred to as the Market Districts of Panama City, that were also constructed from the spoils of canal excavation and later displaced by a new wave of infrastructural manifestation of political will. The Cinta Costera projects of the 21st century constitute my final case study, through which I explain the role of land reclamation in Panama City's current urban form, ongoing transformation, and battle for status in a globalized economy.

5.1 La Boca

La Boca, a neighborhood located near the Pacific port of Balboa within the Canal Zone, is an anthropogenic invention that tells a distinct story of landscape, urban, and social change. The town began as a 300 by 16.5-meter pier constructed by the French New Canal Company in 1896 to secure and shelter boats just inside the canal entrance (Gutiérrez, 1984). When the Americans assumed control of canal construction in 1904, they resolved to create a landfill in place

of this pier, from the foot of Cerro Sosa to Cerro Diablo, to serve as a railroad fueling yard, fuel tank storage space, part of the Balboa port, and a new town for silver roll employees who would need accommodation throughout the construction and early maintenance of the canal (Gordon, 2022). Between the years of 1904 and 1907, the land for these services had been summoned and basic services, including a school, sat upon them (Gordon, 2022).

The Annual Report (1914) documents the area of infill for the Panama Railroad freight yards, port of Balboa, and town of La Boca was practically complete by 1914. The area was filled in by material excavated from the inner harbor, transported and deposited by way of suction dredge and rake as seen in Figure 5.2. Larger rocks were excavated from Diablo Hill and other inland sites in combination with the smaller particles vacuumed by suction dredges.

Figure 5.2. Discharge Pipeline, 1912

Source: Biblioteca Presidente F. Chiari Digital Archive.

On August 13, 1913, the chief engineer of canal construction, George Goethals, officially inaugurated the town of La Boca with its current name, directly translated into The Mouth due to its position on the old Rio Grande. As shown in Figure 5.3, “the town was rectangular in layout, 1,016 feet long by 681 feet wide” (Gordon, 2022, online). Some 52 buildings deconstructed and moved from towns along the canal route, including Gorgona, Bas Obispo, Las Cascadas, Diablo, Empire, Culebra, Portobello, Gatún, Pedro Miguel were rebuilt and converted into family houses

and rental apartments in La Boca, offering very little compensation to the original owners. Some of the most deteriorated buildings were destroyed, others repaired, and barracks and tenement houses were constructed in their place (Gordon, 2022). As can be inferred by the layout and capacity of the number of buildings constructed on this site, the town accommodated a substantial community of silver roll workers and families, mostly from the Caribbean, who made a home in this community for over three decades.

Map 5.3. La Boca, 1930 (Gordon, 2022)

5.1.1. The Bridge of the Americas

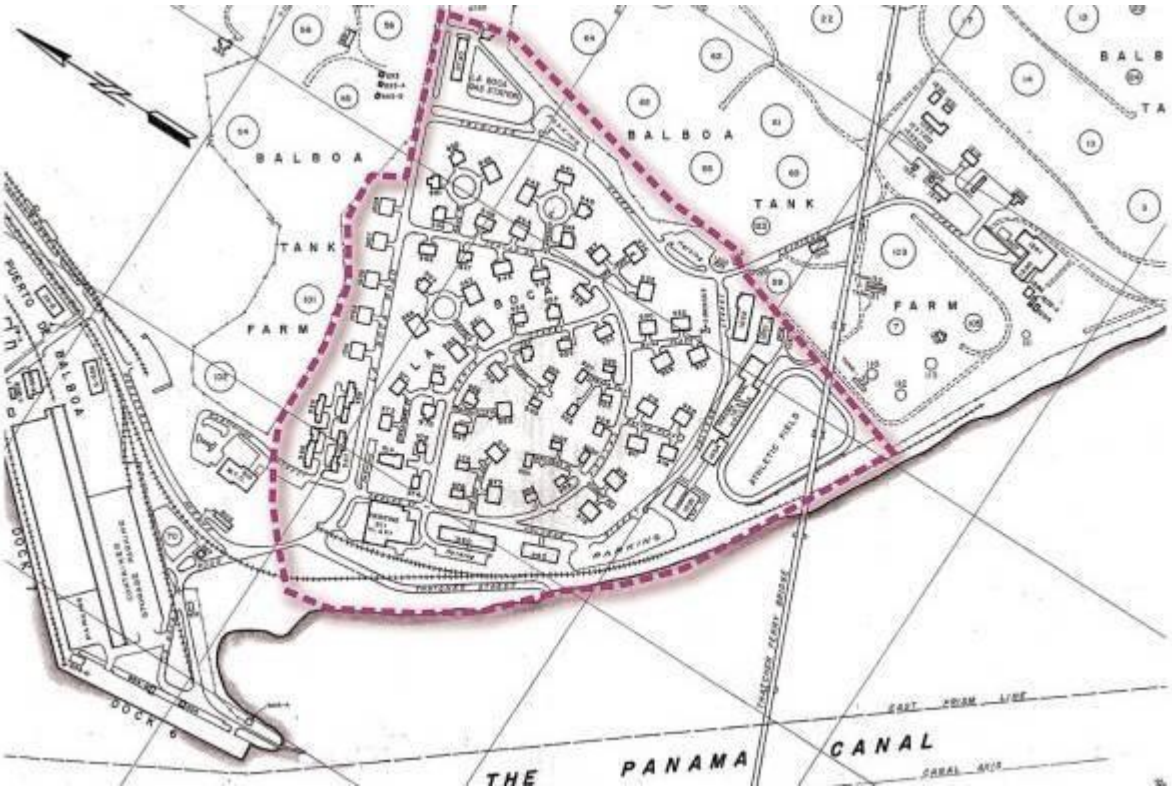
Though a strong community had for many years been established in La Boca, it did not take long for canal authorities to realize that tenement villages within the Canal Zone no longer suited their needs or wants after the canal was completed in 1914. As of 1950, a housing replacement program was run in response to observations that housing in La Boca looked to be of substandard quality in regards to what was expected of the American Canal Zone (Gordon, 2022b). Deeply reminiscent of the careless and racially motivated attitudes that led to the depopulation of the Zone back in 1908, a notice in the *Panama Canal Review* of May 1950 noted that the architectural style of tenement houses built in a cheap and pragmatic manner for undervalued workers in a segregated camp had "little to offer in terms of design in a permanent community" (Gordon, 2022b).

One such example of this architecture is the segregated school for Black children portrayed in Figure 5.3. Based on the size and longevity of La Boca at this time, it is safe to assume that this schoolhouse accommodated over 100 students, most of whom were likely born and raised in La Boca. Housing development and community renovation, therefore, does not seem like a dangerous idea if serving the existing residents of La Boca. However, the reality of this scheme was that the envisioned inhabitants of the improved town would consist of the new ideal employees of the Panama Canal Authority: White, well-to-do Americans and Europeans accustomed to living in sanitary and manicured neighborhoods and little concern for the individuals and families whom they would displace.

Figure 5.3. School in La Boca, 1939 (Guitiérrez, 1984)

By 1957, the original town of La Boca was effectively abandoned and much of the population was rehoused in Pedro Miguel, a neighborhood approximately 13 kilometers further along the canal route, or Paraíso, 15 kilometers up the canal (Gordon, 2022b). About 50 families and 125 individuals were not provided with accommodation or sufficient compensation for their forced relocation and had to find housing outside the Zone without support from the Panamanian government or American canal authorities (Gordon, 2022b). This marked a second shift of 'undesirable' people and their infrastructure shifting up and down the length of the canal as suited to the dominant authorities.

In 1959, the construction of the Bridge of the Americas coincided with the renovation of the new La Boca, where an assortment of single-family homes, duplexes, and apartments were constructed to replace the old tenement buildings that had migrated from erased interior towns about 50 years prior (Gordon, 2022b). The new town was transformed, not only in terms of its physical structure from a grid pattern to a curvilinear shape with culdesacs designed to create tight-knit neighbourly relations (see Figure 5.4), but also in terms of social composition. All Afro-Caribbean descendants had been expelled to make room for white employees of the canal.



Map 5.4. La Boca, 1957 (Gordon, 2022b)

In conversation with Melva Lowe de Goodin from the West Indian Museum of Panama, she recounted her childhood living in La Boca while her father was employed by the canal in the mid-1900s. Having only lived there for a few years, she and her family were then moved to the town of Paraíso around 1956. She recalls the gradual removal of families like her own from the Canal Zone, some were relocated further up the canal route, others left the Zone immediately to move into the city center or further afar to Río Abajo. Eventually, the Zone would become such a colonized and unwelcoming space to non-White inhabitants, and most families found themselves looking for housing in mixed-race or Black neighborhoods where they could feel at home and reunite with familiar faces in their communities.

Melva Lowe de Goodin made it clear that, though it was not said outright, the racially prejudiced motivation for displacing residents of La Boca further up the canal or into the city center was thinly veiled by the supposed housing improvement plan. She hypothesized that La Boca, as an Afro-descendent town, was not a nice enough view for people to see when crossing the brand-new bridge into the city. The bridge itself marked the development discourse of the time, seeking to improve both vehicle flow and access to the port city, but also representing yet another impressive feat of Western engineering wielded by American minds, and literally providing a viewpoint to marvel at the other most impressive feat of American presence in the tropics (see Figure 5.4). In contrast to this trajectory of an American utopia in the tropics, established homesteads in La Boca were sold for as little as one dollar, demonstrating a familiar disregard for the existing inhabitants and communities in Panama and the Canal Zone.

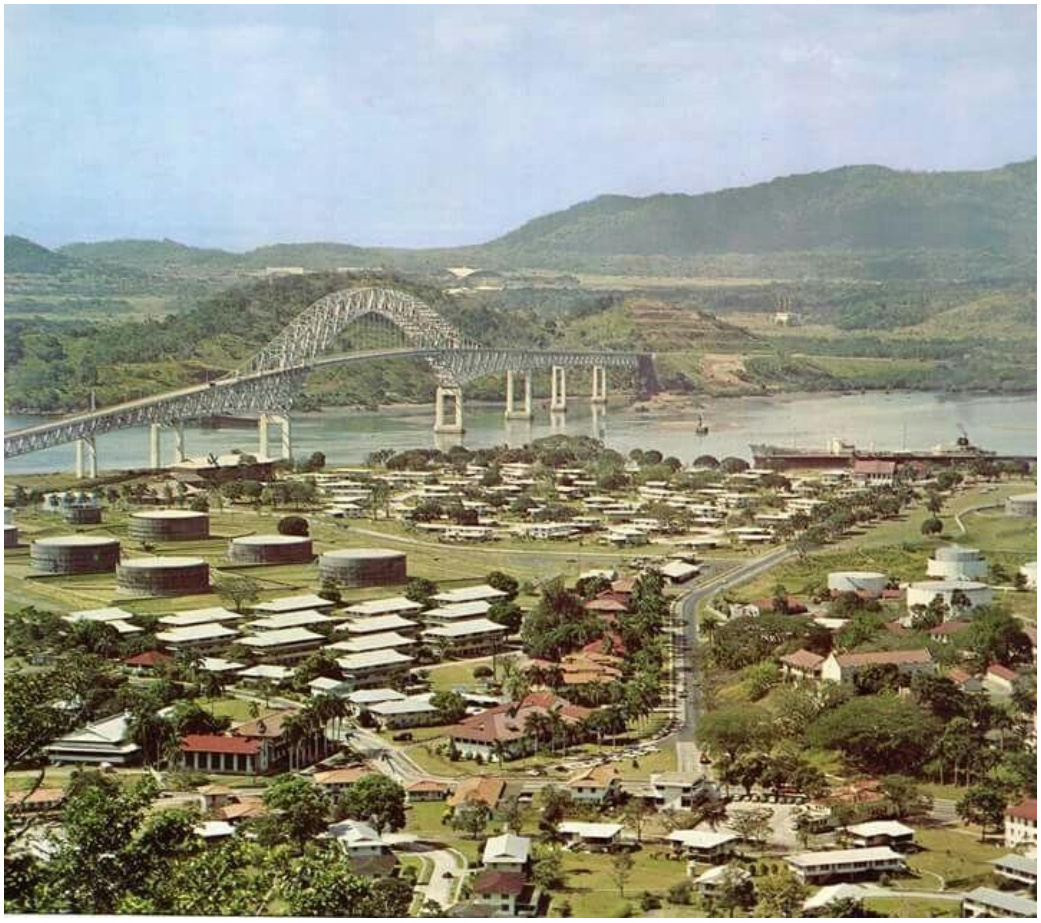


Figure 5.4. The Bridge of the Americas, 1964 (Lavelle-Daugherty Allen, n.a.)

In this case study, we can explicitly notice how physical infrastructure does not only determine the conditions for material wellbeing, but also manifests the institutional will of dominant political and economic forces. Sand, at the most foundational level, constitutes the arena in which social transformations are manipulated through land reclamation, housing improvement,

and bridge construction to deliver the desired results of political powers[2]. In the case of La Boca, Afro-Caribbean residents were controlled through justifications of their infrastructure, and effectively displaced through the implementation of new structures incompatible with their existence and image. The ease through which infrastructure is exercised to redefine social environments contributes to the dynamic social and physical landscapes of Panama City's geosocial composition and will continue to play a key mobilizing role in all urban and social transformations.

5.2. The Market Districts of Panama City

Shifting locales but not moments in time, I now move to the formation and establishment of the Market Districts in Panama, referring to the neighborhoods of Santa Ana, El Barrio Chino, and El Marañon. As explained in Chapter 4: Historical Context, the urban evolution of Panama City's waterfront was heavily informed by the stigma surrounding the Canal Zone border and its former occupants. In many ways, the city's current urban form represents a living legacy of unresolved historical tensions between affluent inhabitants of the Zone, and the assumed uncivilized neighbors within the city.

Almost immediately after the canal was constructed, American officials got to work to create a pristine and orderly environment for their esteemed employees and their families, one that covertly alienated and explicitly excluded non-Western people and values (Gordon, 2021). While there was no room for recklessness within the Zone, residents could find brothels and gambling dens in the haphazard city to blow off some steam. From the perspective of inner-city dwellers at this time, the Zone appeared like the antithesis of the crowded city, as a utopia they should dream of being a part of (Gordon, 2021b).

In 1909, the American canal authorities approved a plan to sanitize and revitalize the urban periphery of the Panama Canal Zone, for which Market Districts became key actors (Gordon, 2023a). At this time, these coastal lands were completely reconstructed, existing buildings were razed, new streets were laid out and paved, the aqueduct sewer system was installed, and the land was portioned off to willing investors (Canal Record, 1909b). This initial effort to sanitize and stabilize the swampy land and informal neighborhoods buttressing the original walled city catalyzed a second wave of urbanization across large swathes of Panama City: La Exposición from

[2] Recall Carse's (2014) statement that "infrastructures produce environments and vice versa" (2014, p.6).

1913 to 1915 and Bella Vista from 1911 to 1930. Alongside these urbanization processes, wealthy residents of the old city, now known as Casco Viejo, saw their opportunity to develop prosperous neighborhoods outside of the crowded historic district surrounded on both sides by communities facing poverty and extreme densification. Therefore, as a distinct belt of poverty emerged around Casco Viejo, developers and well-to-do residents set to work creating further down the coast, leading to the abrupt skyscraper we now see today (Gordon, 2023a).

These belts were populated by a diverse demographic of people, who, since the late 19th century, had been drawn to Panama for work on the French Canal, plantations owned by the United Fruit Company, and eventually, the American Canal. The Guapachí neighbourhood, known today as El Marañon, became one of many settlements for Afro-Caribbean immigrants to Panama City. Due to the increasingly exclusionary presence of the Canal Zone and pressure to assimilate from Panamanian nationals, all of which manifested in omnipresent racial prejudice barring recent migrants and settled residents from gaining Panamanian citizenship, equal pay and quality of life, Afro-Caribbean neighbourhoods forged strong community centered around Blackowned businesses and places of worship. As Afro-Caribbeans and other immigrants were drawn to inner-city communities that they could make their own, the Market Districts became home to a melting pot of cultures from all over the world. The descendants of entrepreneurs and laborers from Barbados to China continue to populate these overcrowded yet vibrant neighborhoods. As is demonstrated by the array of nationalities summarizing life in Panama City in a modern exhibit at the Panama Canal Museum shown in Figure 5.5.

Figure 5.5. Panama's New Population (Author)

El Chorrillo is one such neighbourhood where another member of the Society of Friends of the West Indian Museum of Panama settled with her father, who did not work for the canal but established a pharmacy and became a key figure in the community. This neighbourhood, similar to the Market Districts, is the result of racial segregation forcing non-White communities to exist on the margins of Casco Viejo and the Canal Zone. The unregulated urban evolution of the city as a whole has trapped these neighbourhoods between enclaves of luxury and rapidly developing residential and commercial neighbourhoods, thereby worsening the quality of life through increased density, pollution, and real estate value. The social prejudices facing the residents of the Market Districts too effectively imprison them in a pattern of growing densification and shrinking opportunities. The segregation and social stigma stemming from the original walled city, followed by the exclusive Canal Zone continue to limit these neighborhoods today.

On my first day in Panama, I arrived at the hostel where I would be living for the next four months on the border of the Market Districts and Casco Viejo, the first warning I heard from my housemates was not to venture much further back into Santa Ana where gunshots had been heard the night before. Many tourist boards and travel bloggers continue to warn unfamiliar visitors to not explore these areas, especially at night. Despite the reality of social issues that do create a

higher risk environment, these attitudes only continue to entrench racialized segregation stemming back to the 1800s.

Many scholars and historians do, however, recognize the vibrant cityscapes produced as a result of immigrant communities mixing and making a home in a new city. The waterfront market especially, was a dynamic space known for channeling a variety of cargo, passengers, and seafood to and from the city (see Figure 5.6).

Figure 5.6. Panama City Marketplace and Waterfront (Abbot, 1913)

As I mentioned in Chapter 3: Methodology, during my last week of fieldwork in Panama City, I had the opportunity to participate in a week-long urban module with Professor Ariel Espino, an architect and urban planner from Panama City. During the last lecture of the week, he explained the activities and importance of El Mercado de Mariscos, placed at the intersection of El Barrio Chino and El Marañon which served as a key hub of market activity and cultural exchange. It was not a particularly sanitary or orderly area as the US canal authorities would have hoped, but rather a chaotic amalgamation of different people and activities sharing the same space. I was so impressed by the passionate and nostalgic fervour with which Professor Espino recounted this area, that I felt with more time, I could have dived into the deep history of this one strip of coastline and come up with enough stories to fill an undergraduate thesis and more. But walking through the market and its surroundings today, modern development ideals and ease of infrastructure mobilization have somewhat paved over the vibrancy of what once was there. This leads me to my final discussion of the role of modern land reclamation in Panama City's ongoing transformation.

5.4. La Cinta Costera

The Cinta Costera, translated to the Coastal Belt, is a three-fold urban coastline development project spearheaded by the Ministry of Public Works of Panama. Classified as one of 26 turnkey projects ongoing in Panama as of 2022, it intends to provide a myriad of social services including job creation, added public spaces and cultural centers, reduced traffic congestion, and coastal resilience against storm events and sea level rise (Ministerio de Obras Públicas, 2022). In 2021, the Minister of Public Works, Rafael Sabonge, described the Cinta Costera as "a place where thousands of people come to have a moment of recreation, or to play sports, and now they will have the perfect complement to enjoy these activities. He added that this project was a democratization of public space and would be available for the enjoyment of all Panamanians (Ministerio de Obras Públicas, 2021).

From an economic perspective, the Cinta Costera is meant to boost accessibility to and connectivity between coastal landmarks and local businesses (Ministerio de Obras Públicas, 2022). The entirety of the completed project links one of the wealthiest neighborhoods of Panama City, Punta Paitilla, to the low-income area of El Chorillo, increasing traffic through El Mercado de Mariscos, Casco Viejo, the Amador Causeway, and several cultural sites in between. The Ministry of Public Works likes to point out that that the third stage of the Cinta Costera alone, including an off-shore ring road encircling Casco Viejo, construction of stormwater electrical infrastructure, and a pedestrian, cyclist and motorized pathway along the coast of El Chorrillo would benefit over 1,007,000 people (Ministerio de Obras Públicas, 2022; Ministerio de Obras Públicas, 2021).

This project, however, has been subject to considerable controversy and backlash from residents, urban planners, and the World Heritage Convention overseeing the historic districts of Panama. Primarily discussed in this paper are the second and third phases of the Cinta Costera, bordering on the old Market District of El Terraplèn and encircling Casco Viejo.

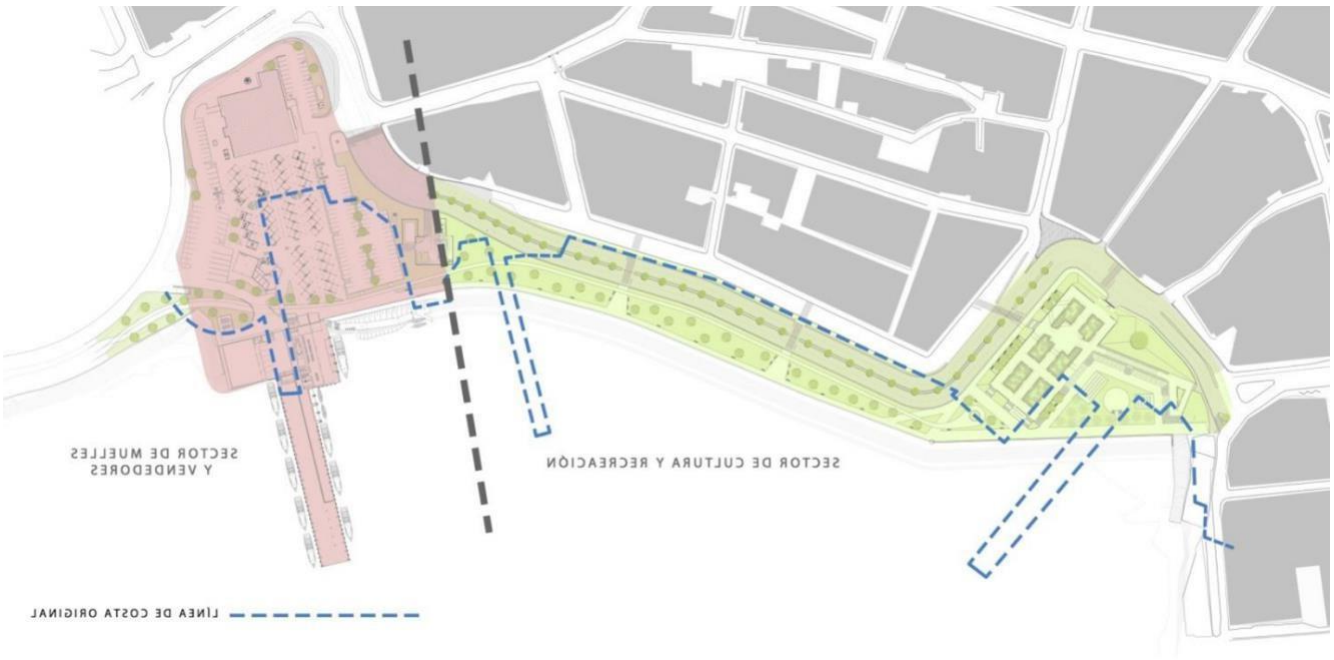


Figure 5.7. El Mercado de Mariscos Original Piers and the Cinta Costera Source: Professor Ariel Espino, presentation to PFSS 2023 cohort.

Recall the lively scene of market activity joining the borders of El Barrio Chino, El Marañon, and Santa Ana, connected primarily by the bustling Mercado de Mariscos. Before 2014, this area looked and felt very different. It consisted of three small piers facilitating seafood, ice, cargo, passenger, and monetary exchanges, sustaining the seafood market and its bars, ceviche vendors, and Indigenous and local businesses (see Figure 5.7). During the days of American jurisdiction over the Canal Zone up until 1999, it was known for its vibrant market scene, where the marginalized populations of Panama City found community and the White residents of the Canal Zone found freedom. Even after 1999, the market and seafront continued to be a reliable spot for cheap seafood and an exciting atmosphere.

Between 2009 and 2013, the sheer coastline and lively streets were transformed to align with the goals of the Panamanian Ministry of Public Works and related cultural and tourism government agencies. The second phase of the Cinta Costera replaced the abrupt shoreline of El Marañon on either side of El Mercado de Mariscos (see Figure 5.8) with idyllic public green spaces, pedestrian and cyclist pathways, and a motorized highway, aiming to increase access to the presidential palace in Casco Viejo and the fish market.

Figure 5.8. El Marañon Coastline before Cinta Costera II.

Source: Professor Ariel Espino, presentation to PFSS 2023 cohort

The architectural firm charged with the design of the Cinta Costera II, of which Professor Espino is a part, successfully implemented their plans for a comprehensive utilitarian and beautification of the seafront (SUMA, 2011). The project involved the consolidation of three piers into one multipurpose dock, the relocation of fish vendors into a single plaza neighboring the indoor seafood market, a new road entrance to Casco Viejo, accompanied by a linear park along the coastline, and the addition of a cultural plaza and outdoor amphitheater built on a semiunderground public parking lot (see Figure 5.9).. The main objective of the plaza and stage adjacent to Casco Viejo was to provide an event and recreation space previously lacking in the historic district, against a backdrop of the iconic skyline and harbor.

Figure 5.9. Cinta Costera II Plaza and Ampitheatre

Source: Professor Ariel Espino, presentation to PFSS 2023 cohort.

While the beautification and sanitation of the new coastal environment were considered by the Panamanian government and the architectural firm as a great success, the social effects of this land reclamation projects are mixed. Today, there are still a variety of different vendors at El Mercado de Mariscos, but their restaurant facades have been homogenized and the sole pier activity focuses on the buying and selling of seafood alone (Figure 5.10). The second phase of the Cinta Costera has also been expanded and interrupted by the third phase, which added an offshore ring road around the peninsula of Casco Viejo cutting directly through the space intended for parks and pedestrian access. The greatest impact of all, however, is the new demographic and idealogy of public access to the doorstop of Market District community members. These individuals, who are cut off from urban social goods already, now face gentrification within spitting distance of their homes and businesses, inciting concerns about increased cost of living and eventual displacement from the city altogether.

Figure 5.10. El Mercado de Mariscos, 2023. (Author)

Chapter 6. Discussion and Conclusion

Figure 6.1. View of the Modern City (Author)

The objective of my explorations of Panama City and its hinterlands was to consider their modern physical, social, and urban composition as the latest volume in an archive of historical human landscapes through the analysis of resource and infrastructure mobilization, predominantly sand. During my four months of fieldwork, which really only constitutes a short glance at the multifaceted history of the Panama Canal and its Pacific port city, I was able to page through the geosocial pasts of La Boca, the Market Districts of Panama City, and the Cinta Costera, and compare them to their most recent embodiment of social values. I attempted to employ sand, or the ways in which sand is mobilized through excavation, urban infrastructure, and land reclamation, as a vehicle to traverse the historical and political ecology of seemingly natural and static environments. What was revealed and should ideally be represented by this study, is a series of stories documenting how an increasing anthropogenic ascendency over the social and natural constituents of our surroundings has culminated in the fleeting shape of a small stretch of Panama City's coast today (see Figure 6.1).

To adopt a bird's-eye view of Panama City's urban form, the landmarks responsible for modern conditions of inequitable urban access, segregation, discontinuous socialization, congestion, and urban sprawl can be identified as the Old City's defensive wall and the border of the former Canal Zone. The birth of Panama City as a point of arrival for Spanish and other European elites from the 17th century onwards, and almost a century of US occupation of the Canal Zone created the blueprint for modern racialized segregation relegating certain neighbourhoods to increasingly shrinking urban peripheries in need of being squeezed out.

The Canal Zone today comprises an abrupt dark green streak of jungle slicing the country in half. What is concealed by this seemingly natural flourishing of the rainforest is the US Canal

Authority's intentional scheme to flood and overgrow more than a century of urban history and expel established communities from the central Canal Zone to the two port cities. The luscious forest framing meticulously planned and maintained townships today is not only a manifestation of Western ideals to triumph in the untamable tropics but a complete erasure of what and who existed and flourished there before. Like tearing out a chapter of a book, the authorities wielded what technical machinery and political power was available to them at the time to engineer a completely new landscape to exemplify their fortitude, solidify their position, and create a welcoming environment for likeminded Westerners to settle in a manufactured utopia.

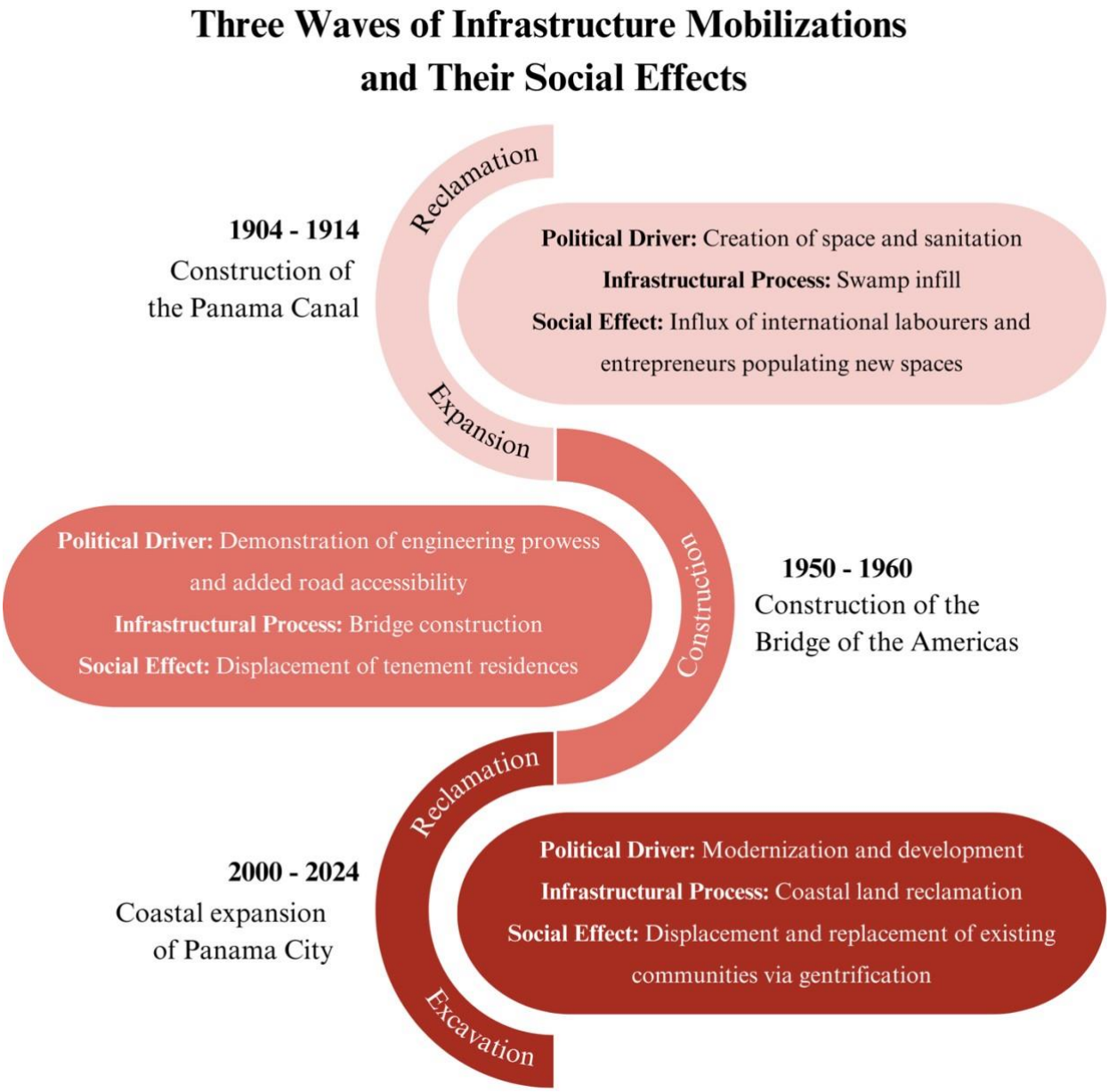


Figure 6.2. Three Waves of Infrastructure Mobilizations and Their Effects.

Over the course of this study, I have identified three locales and moments of infrastructure mobilization, which I call waves of infrastructure mobilization, and attempted to scratch the surface of their political drivers and social effects, as is summarized in Figure 6.2. For the first wave of infrastructure mobilization from 1904 to 1914, I highlighted La Boca and the Market Districts in Panama City as a direct result of canal excavation and land reclamation, created on the premise of urban expansion and sanitation by settler forces.

While La Boca was created to meet the housing needs of an immense Afro-Caribbean presence coming to Panama, the emergence of the Market Districts as diverse hotspots of immigrant place-making were created by the agency and entrepreneurship of international communities making a home in the wake of the economic boom of the Panama Canal. Both the physical and social appearance of these spaces characterize an exciting period of Panama City and its hinterlands entering a new chapter of geosocial existence. The geosocial form and urban political ecology of these neighbourhoods at this moment of canal construction have since become shrouded by later infrastructural mobilizations, but their legacy and stories remain in an earlier chapter of the living archive of Panama City.

The construction of the Bridge of Las Americas constitutes the second wave of infrastructure mobilization, in which the American rewriting of Canal Zone history both mimics and creates the familiar trend of Western emphasization of engineering prowess rather than the help and support of existing communities. It was created both as a physical means to welcome newcomers to Panama City while marvelling at the impressive canal, and as an ideological justification for maintaining the Canal Zone as a sanitary, pristine, and fundamentally White space. The double physical and social transformation of the Canal Zone, achieved first by the excavation, flooding, and overgrowth of pre-existing tropical urbanites, and the subsequent removal of the actual workforce responsible for Canal Construction through the Bridge of the Americas, demonstrates how infrastructural prowess is not only capable of reforming social and physical landscapes but totally removing and replacing them.

The Market Districts would too be pressurized by the event of new infrastructure in the form of the Cinta Costera projects manifesting the 21st century ideal urban scene. Taking a closer look at the city center, the economic opportunities made possible by the success of the Panama Canal and Panama City's growing influence as a key port fueled the growth of immigrant communities while simultaneously incarcerating them in small cells of non-modernity. The Cinta Costera and related coastal expansion that overhauled the previously dynamic and iconic social spaces, namely the market scene and shoreline of El Marañon, is representative of another chapter

in Panama City's physical, urban, and social history. Thus demonstrating the modern development discourse that is currently reshaping the coastline and its social and environmental constituents.

This final wave of infrastructural development, characterized by coastal expansion of Panama City via the Cinta Costera and Punta Pacifica Islands targeted towards foreign investments, is fueled by the modern desire and competition for gaining status in a globalized economy. Coastal land reclamation around the world is fueled by the demand for high-value, upscale real estate bordering scenic waterways (Sengupta et al., 2023), and Panama City is no exception. Luxurious urban space-making is, concerningly, emerging as a prominent driver of land reclamation, which can be no better represented than by the exclusive archipelago of islands mimicking the World Map in Dubai, and the Ocean Reef Islands in Panama City intended to elevate the city's social and economic profile (Sengupta et al., 2023). The current moment and potential future of Panama City's urban form so far seems to be working towards an empowerment of the cityscape to become as influential and iconic as the canal.

In reviewing how we arrived at the modern geosocial composition of Panama City, we consistently notice resources providing both the basis and means for a social reshuffling according to political trends. This study does not conclude by attempting an evaluation of the social or environmental goods or bads of using resources in any of such infrastructural projects outlined above, but rather encourages greater attention to how we, our societies, and our landscapes are indeed shaped by infrastructure, and how we may exist within our given political ecologies and create new ones with an eye for level environmental and social justice across all chapters and levels of our landscapes.

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