

Miami:  
A Young City with Sinking Dreams

Gabriel Curbelo  
Term Research Paper  
GEO 3001 U01 1188  
Dr. Grove  
Florida International University

Two young men dive into clear blue waters to catch stone crab for a U.S. president, large canals are dredged to move thousands of gallons of freshwater off the land, and a fleet of boats wash up on the shore carrying Cuban migrants hoping for a better future. This is just a short snippet of human activity and history within Miami, a city that has undergone massive infrastructure change to accommodate a growing population of 2.75 million within Miami Dade County and nearly five million within the metropolitan area. This essay will analyze the various infrastructure systems within this city, how they came about, how they impact the people living in the area, and how they link the people of Miami to the rest of the world. Where and why were these forms of infrastructure created? How will Miami's existing and newly proposed systems of infrastructure help the population prosper in the world economy while also protecting it from sinking into the sea?

Miami was built upon the settlements of Tequesta Native Americans, Bahamian landowners and an American slave plantation along the banks of the Miami River. (George, 1996) The very first forms of social infrastructure were formed between Anglo-Bahamians and Native American tribes on the coast and in the Everglades, who would sell native fruits and vegetables during the early 18th century. (Merrick, 1941) It is interesting to note how Native American tribes played a vital role in the survival of these early settlements and were later pushed out of coastal areas in the east and into the central Everglades. After the Seminole Wars and the migration of early homesteaders such as Julia Tuttle on the former Fort Dallas property, and the Brickell family on the south side of the Miami River bank, Miami grew dramatically from the expansion of agriculture, transportation, and rising tourism, which led to the incorporation of the city of Miami in 1896. (George, 1996)

Early forms of infrastructure heavily influenced transportation and migration to the region. The development of roads stretching from large settlements in north Florida, such as St.

Augustine, and the railway via Julia Tuttle's relationship with Henry Flagler, were important factors in the development and later incorporation of the city of Miami. Miami's first settlers arrived in the area and developed their farms and homes in an environment dominated by Pine Rockland forests, full of plants that were strong enough to break the coral-like rock known to geologists as Miami Oolite (a special form of limestone). Many doubted that a railroad would be built here but Flagler saw the opportunity for an abundance of agricultural profit due to the region's unique climate and position as the center of settlements such as Lemon City, Coconut Grove, and the frontier settlement in the Florida Keys. (Wilson, 1954) The railway transported goods out of the regions and brought people in to develop and build up the city on the banks of the Miami River and along Biscayne Bay.

Transportation via ship was a significant factor in the development of Miami and continues to be a major part of the local economy. Small ships entered Biscayne Bay carrying supplies to early homesteaders and transported people from neighboring settlements and the Bahamas in the 18th century. The proposed railway and expansion of the City of Miami pushed Congress to fund the development of Government Cut in 1902, dredging out tons of rock from the thin and shallow strip of land between Fisher Island and Miami Beach, symbolizing the growth of the new city. (Miami-Dade County, 2006) The development of Government Cut marked a significant event in Miami's history as the first stage in developing the Port of Miami on Dodge Island. The port now generates a significant portion of revenue for the county via tourism and commercial shipping, but it has also caused a major conflict between local environmental groups and the county government due to the continued dredging of fragile coral reef ecosystems lying inside Government Cut and along the edges of Dodge Island and Miami Beach. This has caused a major battle between interest groups advocating for the environment and a stronger economy through the global network of cargo shipping. (Staletovich, 2018)

Another crucial "bloodline" to Miami's development and the economy is air travel. Founded in 1928, Miami International Airport (MIA) is a major transit center and corridor for the U.S. to Latin America and the Caribbean, located nearly in the north-central part of the county. MIA grew from the small Miami City Airport and a network of small independently owned airfields into the U.S.' 3rd busiest airport. (Miami-Dade County, 2018) This airport has acted as a major symbol of mobility and a major stepping stone for the young city. Miami's airport acts as the centerpiece for a major commercial district in the city. Around the airport are major manufacturers, tying together Miami's economy to the rest of the globe through air transportation. (Prosperi, 2008) The airport acts as a vital bloodline in connecting the metropolitan city to other U.S. cities, transporting local goods and distributing products from the rest of the Western Hemisphere.

Nearly 20 years after the city's founding, three modes of transportation were established, bringing in people to newly developed urban areas near the coast and the suburbs lying in the periphery, such as Coconut Grove and Coral Gables. The influx of wealthy landowners in the 1910s and 1920s, such as Carl Fisher, contributed heavily to the establishment of other incorporated municipalities in the Miami metropolitan area. (Wilson, 1954) This created a dynamic structure of governance across early Dade County, creating areas where there was strong state support for dredging and clearing of lands once part of the Everglades. The development of roadways created imaginative geographies within the county as well, demarcating the boundaries of certain neighborhoods and groups of people. (Mohl, 2008) The development of Interstate 95 through Overtown Miami impacted the community greatly, destroying the once middle to working class community referred to as the "Harlem of the South" and the center of black life in the county to one of the most impoverished communities in the city. (Dluhy, 2002) Recently the development of State Road 836 past the county's Urban

Development Boundary (UDB) has caused a major rift between environmental organizations and the county (partnering with Kendall residents and the Miami Dade Expressway Authority). This political conflict has risen questions about the county's proposed SMART plan, which pushes for a stronger use of public transit options through the expansion of the Metrorail and more efficient bus systems. (Kim et al., 2014)

Miami has a vast array of industry and labor history that create a vital layer of social infrastructure. According to the Fourteenth Census, 1920, construction was the leading industry of employment during the early years of the city. In the 1910s and 1920s, black Bahamians migrated to the area to work in fields and in construction for affluent white landowners, constructing downtown's first buildings and homes along the eastern side of US 1. White workers formed somewhat weak unions so as not to discourage the economic boom seen between the city's founding and the 1920s, and black communities heavily relied on low paying seasonal or entry-level jobs. (Castillo, 2004) The treatment of black workers in Miami had profound effects on the "development" of their communities, leaving many communities in poverty with little government services. From a neoliberal standpoint, the "development" of communities along the western edge of downtown, western Coconut Grove, and Overtown should have worked during this period due to the little industrial regulations and economic boom at the time. Yet, these communities still lie on the "fringe" and suffer greatly from the lack of job security, economic growth, and more recently gentrification. These communities have endured the loss of jobs in the manufacturing sector since the U.S. has faced a decline from the 1990s onward and were heavily hit in the recession of 2008, forcing people in areas such as Overtown to lose their homes and jobs. (Samara, 2007)

Miami's settlement and incorporation in the late 19th and early 20th century allowed it to develop telecommunications, energy, and utilities early on, including these relatively new

systems at the time into the city's planning and local architecture. The production of electricity in the county has also caused detrimental effects to the surrounding environment, especially from Florida Power & Light's Turkey Point Nuclear Power Plant. Studies showed that effluent from the plant caused major disruption in Biscayne Bay's water temperature, affecting the variety of animals and plant life that relies on the relatively mild temperature to survive. (Roessler, 1971) Environmental groups who had strongly advocated for the development of the "clean energy" plant had turned on FPL which led to the development of the plant's unique cooling canal system. Now, environmental organizations and local researchers are lobbying to shut down the cooling canal system in favor of cooling towers due to the leakage of chemicals into the underground aquifer, endangering drinking water and health of communities near the plant in Florida City and close to Palmetto Bay. (Staletovich, 2016)

How does infrastructure influence the city's future? Coastal infrastructure and water management show how Miami is addressing rising sea levels and flooding. Climate change could be detrimental to coastal urban areas and coastal Everglades restoration, costing both the city and state millions of dollars in road damages and other infrastructure, private businesses and properties major losses in building damage, and loss in federal dollars for damaged environmental projects along Biscayne Bay (which in turn affect Comprehensive Everglades Restoration Projects). Many researchers have also brought up questions about the sustainability of certain resilience practices, such as the installation of pumps and the raising of roads in Miami Beach. Dr. Grove, for example, notes how resilience strategies in Miami and across the globe arise from a "will to design," bringing together an array of disciplines and knowledge to address the issues seen as a result of the Anthropocene. (2018) Will these methods sustain the city in the era of climate change? Can the young city survive the rising tide?

Resilience and infrastructure also bring up another discussion relating to environmental justice. Researchers discuss the disparities between minority groups and wealthier white populations in terms of access to viable infrastructure and flooding. (Javajit et al.,2014) Although both communities were in high-risk areas for flooding, wealthier communities had more access to coastal and water management infrastructure that reduced damages during flooding events. How can affluent communities such as Coconut Grove, Coral Gables, and Pinecrest have more access to better infrastructure systems than other impoverished areas prone to flooding along the Miami River and other low-lying neighborhoods? How does this inequality in the city reflect the image of Miami as a "globalized" and "prosperous" metropolitan city?

Miami's infrastructure is interconnected with both environmental injustices and the future of the city. Historically, Miami's infrastructure systems have guided its development from the coast towards the eastern edge of the modern Everglades, yet it has also divided residents and created conflicts and disparities across the county. From highways to efficient drainage systems, it has caused major rifts between races and ethnic groups who have been historically persecuted since the early agricultural and developmental periods of Miami. Infrastructure for natural disasters and increased sea levels also create a new discussion of where the city is headed, will it continue to exist in the next 100 years? Will the "Magic City" overcome these obstacles or become part of Biscayne Bay?

#### Works Cited

- Castillo, Thomas A. "Miami's Hidden Labor History." *The Florida Historical Quarterly* 82.4 (2004): 438-67. Web.
- Dluhy, Milan, Keith Revell, and Sidney Wong. "Creating a Positive Future for a Minority Community: Transportation and Urban Renewal Politics in Miami." *Journal of Urban Affairs* 24.1 (2002): 75. Web.
- George, Paul. "Miami: The First Hundred Years." *South Florida History* (1996): 22-36. Web.
- Grove, Kevin. *Resilience*. Routledge, 2018. Print.

- Jayajit, Chakraborty, et al. "Social and Spatial Inequities in Exposure to Flood Risk in Miami, Florida." *Natural Hazards Review* 15.3 (2014): 04014006. Web.
- Kim, Jeongseob, Ruth L. Steiner, and Yizhao Yang. "The Evolution of Transportation Concurrency and Urban Development Pattern in Miami-Dade County, Florida." *Urban Affairs Review* 50.5 (2014): 672-701. Web.
- Merrick, George E. "Pre-Flagler Influences on the Lower Florida East Coast." *Tequesta* 1.1 (1941): 1-10. Web.
- Miami-Dade County. "Government Cut Centennial Commemoration." *Port of Miami*. 2006. Web. November 15, 2018  
 <<http://web.archive.org/web/20060213195135/http://www.miamidade.gov/portofmiami/centennial.asp>>.
- Miami-Dade County. "Miami International Airport." 2018. Web. Nov 20, 2018  
 <[http://www.miami-airport.com/about\\_us.asp](http://www.miami-airport.com/about_us.asp)>.
- Mohl, Raymond A. "Interstating Miami: Urban Expressways and the Changing American City." *Tequesta*.LXVIII (2008): 5-40. Web.
- Prosperi, David. "MIA: Miami International Airport or Miami Innovation Area " Florida Atlantic University, 2008. Print.
- Roessler, M. A. *Environmental Changes Associated with a Florida Power Plant*. 2 Vol., 1971. Web.
- Samara, Tony R. "Gentrifying Downtown." *Color Lines* Aug 2007Print.
- Staletovich, Jenny. "FPL faces lawsuit over leaky nuclear cooling canals at Turkey Point." *miamiherald*. Mar 22, 2016. Web.  
 <<https://www.miamiherald.com/news/local/environment/article67532167.html>>.
- Staletovich, Jenny. "Just Three Years After Controversial 'Deep Dredge,' PortMiami Wants More." *Miami Herald*, Nov 12, 2018, Web.  
 <<https://www.miamiherald.com/news/local/environment/article221373915.html>>.
- Wilson, F. Page. "Miami: From Frontier to Metropolis: An Appraisal." *Tequesta*.XIV (1954): 25-50. Web.