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Melissa Morgan Beeler

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**The Report Committee for Melissa Morgan Beeler  
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**The Effect of Local Planning Actions on Environmental Injustice:  
Corpus Christi's Refinery Row Neighborhoods**

**APPROVED BY  
SUPERVISING COMMITTEE:**

**Supervisor:**

---

Elizabeth Mueller

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Rachael Rawlins

**The Effect of Local Planning Actions on Environmental Injustice:  
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**by**

**Melissa Morgan Beeler, B.S.**

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## **Abstract**

### **The Effect of Local Planning Actions on Environmental Injustice: Corpus Christi's Refinery Row Neighborhoods**

Melissa Morgan Beeler, M.S.C.R.P

The University of Texas at Austin, 2015

Supervisor: Elizabeth Mueller

Public health problems associated with industrial and hazardous waste facilities seriously and disproportionately impact some communities more than others and have been the subject of environmental justice research for decades. This report aims to 1) evaluate whether and how local planning policies have contributed to a concentration of minorities and poverty adjacent to industry in Corpus Christi's north side, and 2) examine actions that planners and city officials could take to successfully mitigate environmental justice problems. City plans, reports and zoning maps relating to the north side were reviewed to understand whether the City has contributed to the neighborhoods' proximity to industrial sites. These documents suggest that city actions have had some role in the minority neighborhoods' proximity to environmental hazards, especially in the early years of planning in Corpus Christi. Lessons learned from these planning documents are discussed, as well as recommendations for future planning efforts in the north side.

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## **Chapter 1: Introduction**

Since the 1980s, studies have documented the increased risk for minority communities resulting from the siting of industrial activities, municipal waste facilities, and large infrastructure projects. Living near hazardous waste sites has been shown to increase risks of birth defects, congenital heart defects, and low birth weight in pregnant mothers (Downey & Willigen, 2005). Living next to highways and other high traffic areas are correlated with increases in strokes and asthma hospitalizations (Gauderman et al., 2005; Hu et al., 2008).

A national environmental justice movement has attempted to address “disparate impact, unequal protection, and environmental discrimination” through “participatory, democratic processes” (Shanklin, 1997) and litigation. Affected residents of hazardous facilities and other locally unwanted land uses have filed lawsuits under the federal Equal Protection Clause of the constitution claiming local siting decisions are discriminatory. However, these lawsuits have been unsuccessful for many communities due to the difficulty of demonstrating intent to discriminate on behalf of the municipality (Shanklin, 1997).

Other legal avenues can be just as difficult for communities as they require evidence of scientific causation to win. The low-income neighborhood of Hillcrest in Corpus Christi, Texas, filed a lawsuit under the Crime Victims’ Rights Act, but it proved too difficult to demonstrate that industrial emissions caused the claimed health effects. (United States v. CITGO Petro. Corp, 2014).

Corpus Christi is a medium-sized port city dominated by the lucrative oil and gas industry. The Hillcrest neighborhood is adjacent to an expanding heavy industrial district, Refinery Row, which is home to five of six major refineries deemed frequent violators by

the EPA (Toxic Texas Tours, 1999). In 2007, Hillcrest residents were declared potential victims when Citgo Refining and Chemicals Co. was convicted of violating the Clean Air Act for possessing uncovered oil tanks (United States v. CITGO Petro. Corp, 2014). In recent years, Hillcrest residents have experienced troubling health symptoms such “vomiting, dizziness and shortness of breath,” measurable benzene in blood samples, as well as higher rates of birth defects and physical and mental disabilities (NPR State Impact, 2011; Texas Commission on Environmental Quality, 2012). The neighborhood documented their health impacts and requested \$30 million in restitution from the refinery (United States v. Citgo Petro. Corp., 2014). As the neighborhood awaited the court’s decision, they challenged all air permits requested by industry in Refinery Row. Flint Hills Resources ultimately agreed to reduce emissions and buy one home near the plant on the outskirts of the neighborhood (Environmental Integrity Project, 2013; KRISTV, 2013). In early 2014, the courts fined Citgo the maximum \$2 million fine but denied Hillcrest any retribution for their health conditions, stating that obtaining the relevant causal evidence would “unduly delay the sentencing process” (Texas Observer, 2014). Because the community could not provide sufficient evidence that their symptoms were caused by CITGO’s uncovered oil tanks, they lost their case.

Hillcrest residents have also been struggling with a transportation project that threatens to cut them off from the rest of the city. The Texas Department of Transportation has recently decided to perform extensive street widening and site the new Harbor Bridge between the historic Hillcrest and Washington-Coles neighborhoods. Once the new highway is complete, the organized but aging Hillcrest community will be surrounded by busy highways and heavy industrial activity near the Port. Over the years, community members and partner advocates have worked to protect what is left of the north side

neighborhoods and to ensure that the community will experience a better quality of life in the future, either through buyout of homes or community revitalization (Malan, 2010).

Instead of pursuing litigation, which often results in little for disadvantaged communities, some scholars have proposed alternatives to remedy environmental inequity, such as improved land use and zoning policy interventions (Burby & Strong, 1997). Boone and Modarres (1999) argue that analysis of planning and zoning documents assist us in better understanding how the process of industrial siting may have created disparate environmental impacts on minority neighborhoods. Interventions may take the form of proactive zoning that sites industry far from residential uses, or reactive zoning that creates buffers between industry and other uses (Campbell, Kim & Eckerd, 2014). Some studies show that planners have remained unresponsive to resident exposure to pollution, believing the problem to be a federal or state responsibility (Burby & Strong, 1997). In response, Burby and Strong advocate for planners to collaborate with residents experiencing negative externalities from industry. Planning transparently with the community to come to a solution that addresses community needs may also be a good way to diminish resident cynicism and distrust of government.

Understanding how historic land use decisions have affected Corpus Christi's Hillcrest neighborhood and other north side communities could encourage the city to mitigate environmental injustice. This report has two purposes: 1) to evaluate whether and how local planning policies contribute to a concentration of minorities and poverty adjacent to industry in Corpus Christi's north side, and 2) to examine actions that planners and city officials could take to successfully mitigate environmental justice problems. This report is intended primarily to inform future advocacy efforts of local communities and nonprofit organizations. Findings may also assist other planners in avoiding planning pitfalls that have significant impacts on environmental justice in their communities. Lastly, city

officials may find this compilation of planning documents to shed light on their city's history and inform future actions and goals with respect to this community.

## **Chapter 2: Literature Review**

Public health problems associated with industrial and hazardous waste facilities seriously and disproportionately impact some communities more than others. Understanding these impacts and the existing environmental justice movement is important for planners and other decision makers. Provided in this section is a discussion of the literature on the theoretical impact of planning policies on environmental justice and planning interventions local governments have made to reduce risks to health and safety for their residents. An overview of the prevalence of environmental injustice on Corpus Christi's north side is also provided to frame a historical planning analysis.

### **ENVIRONMENTAL INEQUALITY IN PUBLIC HEALTH**

Environmental justice literature tends to focus on the question as to whether racial disparities exist in exposure to environmental hazards and access to environmental amenities (Campbell et al., 2014). In 2010, researchers prepared a comprehensive report for the EPA reviewing the literature on public health outcomes from proximity to environmental hazards (Maantay, Chakraborty & Brender, 2010). The report found that much of the literature supports the idea that living near environmental hazards such as hazardous waste sites, high-traffic areas, and industrial facilities pose risk to those living near it (Maantay et al., 2010).

Studies have shown increased risk for central nervous system birth defects, congenital heart defects, chromosomal changes, and low birth weight in pregnant mothers living near hazardous waste sites (Vrijheid, 2000; Downey & Willigen, 2005). Mothers living near highways and high-traffic areas are also at risk for premature births and low birth weight (Genereux et al., 2007; de Medeiros et al., 2009). Heavily trafficked areas are also significantly associated with asthma hospitalizations (Gauderman et al., 2005).

Exposure to air pollution in general increase residents' risk to fatal strokes (Hu et al., 2008; Maheswaran & Elliott, 2003; Aylin et al., 2001). Several studies over the last twenty years have found an increased risk of childhood and adult cancer due to residential proximity to industrial and nuclear plants (Morris & Knorr, 1996; Johnson et al., 2003; Choi et al., 2006). Although there are also studies with conflicting results, Maantay et al. (2010) recommend these potential health outcomes be seriously considered by decision makers when siting industrial facilities and planning land use (Maantay et al, 2010).

Living next to industrial activity can also impact the mental health and wellbeing of local residents. Downey and Van Willigen (2005) found that residential proximity to industrial activity was psychologically harmful to residents by increasing stress levels of residents. The authors show that individuals perceive industrial activity to be threatening to their health and increase feelings of neighborhood disorder, personal powerlessness, and depression. Those who live near industrial activity tend to have worse mental health than those that do not live near industrial activity (Downey & Van Willigen, 2005).

Because industrial sites, hazardous waste facilities and highways are disproportionately located in low-income communities and communities of color, the public health burdens of pollution are unequally placed upon these populations (Pais, Crowder & Downey, 2014; Mohai et al., 2009; Mohai & Saha, 2007; Morello-Frosch et al., 2002; Morello-Frosch, 2002). Minorities tend to live in more polluted areas of cities (Ash & Fetter, 2004), along heavy traffic areas and highways (Gunier et al., 2003), industrial facilities (Mohai et al., 2009) and hazardous waste sites (Mohai & Saha, 2007). Pollutant exposure is also carried indoors, as industrial and traffic pollutants are found in higher concentrations in low-income, minority households than more affluent households (Brody et al., 2009).

Although minority neighborhoods have struggled with the impacts of industry and waste in their communities for decades, it was not until the 1980s seminal report published by the United Church of Christ that race was shown to be the best predictor of the location of hazardous waste facilities in the U.S. (Maantay et al., 2010). The empirical report helped provide legitimacy to the movement whose purpose is to “[address] environmental enforcement, compliance, policy formulation, and decision making...through a participatory, democratic process” (Shanklin, 1997).

The United Church of Christ commissioned another study in 2007 using the most up to date spatial data and methods and found that racial disparities in hazardous waste site distribution were even worse than originally reported (Bullard et al., 2007). Race was found to be a more predictive variable for hazardous waste sites than income, education, or any other socioeconomic factor tested. When comparing demographics of neighborhoods within 1.8 miles of hazardous waste sites (host neighborhoods) against neighborhoods farther away (non-host neighborhoods), researchers found that host neighborhoods were 56% people of color, while non-host neighborhoods were 30% people of color (Bullard et al., 2007). Poverty rates were also 1.5 times greater in the host neighborhoods. Neighborhoods with clustered facilities had even greater concentrations of people of color than neighborhoods without clustered facilities. Bullard et al. (2007) questioned whether current policies protect the poor and communities of color from environmental hazards, and recommended stronger government policies and industry standards.

#### **LOCAL PLANNING AND ZONING POLICIES AND ENVIRONMENTAL JUSTICE**

A recent study by Campbell et al. (2014) identified at least four models of environmental policy, either intentional or unintentional, that alone or in combination may explain racial disparities in environmental injustice.

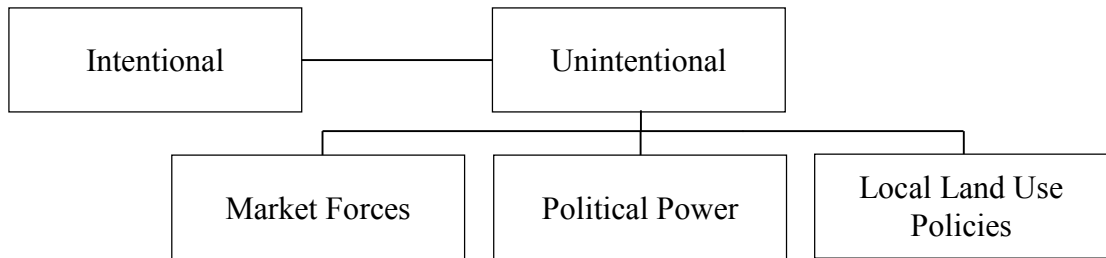


Figure 1. Models of policy’s impact on environmental justice.

The intentional model was used by Pulido (2000) to examine the concentration of minorities near industrial areas and white suburbanization. She recommends that EJ literature not only focus on discriminatory or intentional firm siting but also explore less conscious forms of discrimination such as white privilege (Pulido, 2000).

The unintentional models of EJ focus on social processes that did not have the explicit intent to discriminate but may have led to disproportionate outcomes in terms of race and socioeconomic status of affected populations. The market-based view proposes that industrial facilities locate where the land is the least expensive, leading to siting near areas with high poverty (Campbell et al., 2014). In turn, low-income minorities may move closer to industrial facilities for job opportunities or due to decreases in surrounding land values, leading to present-day EJ concerns. Political power is also an important factor to consider, as low-income minorities tend to lack the time, money or collective power that more affluent communities have to influence local policy. The strong political engagement of more affluent communities may lead to more locally unwanted land uses being sited near low-income minority communities.

Less explored in the literature is the effect of local land use policy on environmental injustice. Historical zoning policies help create land use patterns in a city (Boone & Modarres, 1999), and may contribute to the present-day existence of persistent cases of environmental injustice. A case study of New York City found that rezoning of industrial



land in more affluent, less minority communities to residential and commercial uses while expanding industrial zones in low-income areas contributed to environmental inequity (Maantay, 2002).

### **CITY PLANNING AND ZONING INTERVENTIONS**

Just as local planning actions may contribute to present-day environmental injustice, planning and zoning can be used to mitigate current public health and safety problems in communities near industrial activity. Campbell et al. (2014) modeled the effectiveness of proactive zoning, reactive zoning, and the absence of zoning to mitigate environmental justice. Without a zoning policy, minorities experienced worse environmental quality than non-minorities. Proactive zoning, or zoning that creates specific zones for industry away from residential activity, resulted in less severe environmental justice problems than no zoning. Reactive zoning, or creating buffers around polluters near residential areas, enabled environmental justice problems to occur more quickly but the problems declined over time.

The California Air Resources Board has recommended specific distances to separate sources of pollution (e.g. industrial facilities and freeways) from “sensitive receptors” such as residences, schools, medical facilities, and recreational facilities (Table 1; California Environmental Protection Agency, 2005). Unfortunately, at the time of the study, there had not been substantial air monitoring data to determine a specific buffer distance between refineries and sensitive land uses. Some California cities are looking into updating their buffer requirements around sensitive receptors to remain consistent with new public health research and the impact of polluting facilities (East Yard Communities for Environmental Justice, 2013).

Source	Advisory Recommendations
Freeways and High-Traffic Roads	Avoid siting new sensitive land uses within 500 feet of a freeway, urban roads with 100,000 vehicles/day, or rural roads with 50,000 vehicles/day.
Ports	Avoid siting of new sensitive land uses immediately downwind of ports in the most heavily impacted zones. Consult local air districts or the Air Resources Board on the status of pending analyses of health risks.
Refineries	Avoid siting new sensitive land uses immediately downwind of petroleum refineries. Consult with local air districts and other local agencies to determine an appropriate separation.

Table 1. California Air Resources Board recommended distances of separation (California EPA, 2005).

Some industrial communities in California are working to create Green Zones that aim to encourage green energy economies to protect their communities and bring better jobs. The City of Richmond’s Planning Commission was persuaded by evidence that cleaner industry could bring more jobs to their community than traditional industry (Communities for a Better Environment, 2012). If the city council approves the land use policy, it would prioritize and incentivize green energy firms and require least-emitting technology for major industrial projects.

While zoning stipulates specific regulations for new development, a comprehensive plan can describe a city’s vision for the future and priorities for growth. The State of California provides cities with guidelines for how to address environmental justice in their general plans (Office of Planning and Research, 2003). Commerce City, California, a city with one of the largest concentrations of industrial development in the country, complies with the state guidelines by providing policy statements on environmental justice with regard to each planning element (City of Commerce, 2008). Some of Commerce City’s statements include: 1) identifying and addressing adverse impacts of future public

facilities, 2) distributing all future industrial benefits and disadvantages regionally rather than concentrating them locally, and 3) participating in regional planning activities to represent the City of Commerce in siting future public facilities (City of Commerce, 2008). Although California's guidelines are not mandatory (Office of Planning and Research, 2003), they help communities address EJ in their plans to acknowledge the problem and think of ways to mitigate the problem, specifically focusing on procedural and geographic inequities.

Cumulative impact screening has also been recommended as a proactive means to reduce industrial siting next to vulnerable communities because it shifts the burden of demonstrating cumulative impacts of exposure from the community to government and industry (Morello-Frosch et al., 2011). Cincinnati requires industrial facilities to demonstrate that they will not cause an adverse cumulative impact on nearby communities in order to receive a permit (Morello-Frosch et al., 2011). Los Angeles performs community impact screenings to inform plans, permits, and enforcement strategies for neighborhoods already affected by industrial activity (Morello-Frosch et al., 2011).

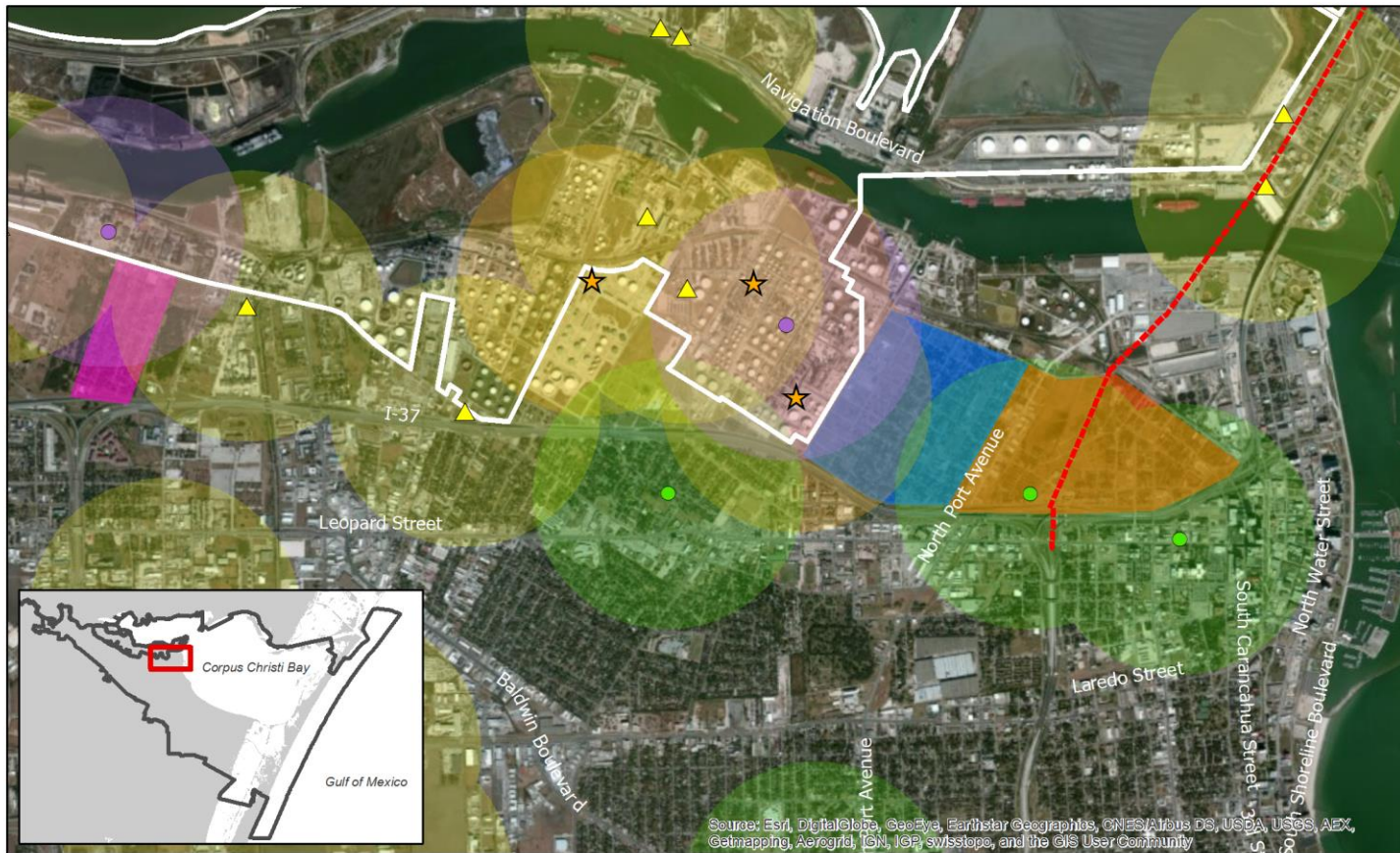
Cities have implemented a variety of policy guidelines to address public health impacts of industrial facilities on residential communities. When reviewing Corpus Christi, plans could address environmental justice problems directly with specific strategies of how to overcome them. Plans could also call for ample buffer zones to protect residents from spills and explosions and zoning documents could codify these buffers.

## **ENVIRONMENTAL JUSTICE IN CORPUS CHRISTI**

Most industrial facilities in Corpus Christi are located in an industrial district infamously named Refinery Row, which runs the length of the north side. Seventeen of the 28 Toxic Release Inventory sites regulated by the EPA are located in or near Refinery Row.

The five sites with the biggest releases or disposal of TRI regulated chemicals are also located within this district. These sites include Flint Hills Resources East and West plants, Valero Refining's East and West plants, and CITGO's East plant (EPA.gov, 2013). Three brownfields, three permitted hazardous waste sites, and one Superfund site on the National Priorities List are also located along the industrial district. Industrial sites may locate and expand here due to their proximity to Interstate 37 and the Port of Corpus Christi. Interestingly, Refinery Row is just outside of the city limits, as shown in Figure 2, meaning they are not subject to city zoning and planning regulations, let alone property taxes. In lieu of taxes, the City signs an agreement with industries in the district every ten years, primarily ensuring district industries that they 1) will not be annexed and 2) sewer and water will be provided by the city in exchange for levying 100% of taxes on land and 60% of taxes on land improvements (Tex. Local Gov't. § 42.044). The agreement ensures that Refinery Row is not subject to zoning. In Texas, zoning is not allowed outside the city limits (Tex. Local Gov't. § 212.003).

In addition to industrial facilities, the north side will also be home to a new highway alignment. TxDOT recently decided to realign Harbor Bridge, a highway currently east of Washington-Coles, through the middle of the historically minority neighborhood (Fig. 2). The transportation agency hired an architectural historian to conduct oral histories and collect community memorabilia of the north side neighborhoods due to the expectation of the project displacing as much as 23% of the population (Ramirez, 2014). TxDOT expects the new Harbor Bridge to change the area "dramatically," expecting their project to adversely affect area residents to the point of displacing them.



### North Side Neighborhoods, Corpus Christi, Texas

Sources: Census 1960 Tracts, EPA TRI Sites (2015), Brownfields (2012), Superfund Sites (2014), TCEQ Hazardous Waste (2013)



- |                    |                           |  |
|--------------------|---------------------------|--|
| <b>Communities</b> | ★ TRI Top Emitters        | ● Permitted Hazardous Waste Facilities |
| ■ Dona Park        | ■ Top TRI 0.5 mile buffer | ■ Hazardous Waste 0.5 mile buffer      |
| ■ Hillcrest        | ▲ TRI Sites               | ● Brownfields                          |
| ■ Washington-Coles | ■ TRI 0.5 mile buffer     | ■ Brownfield 0.5 mile buffer           |
|                    |                           | — City Limits                          |
|                    |                           | — Proposed Highway                     |

Figure 2. Location of north side communities in Corpus Christi.

Historically significant neighborhoods are present on the north side: Washington-Coles, Hillcrest, and Dona Park (Fig. 2). Washington-Coles was a part of the original city area when incorporated in 1852 has been predominantly been an African American and Mexican American neighborhood. Hillcrest was platted as an exclusive country club community in the early 1900s and annexed in the 1930s (Malan, 2010). Prior to the 1940s, it was primarily a White neighborhood, but when it was opened to African American renters in 1944, it quickly turned into a majority-minority neighborhood (Housing Authority of the City of Corpus Christi, 1944). Dona Park was annexed in the 1950s, also becoming a majority minority community over time (Fig. 3).

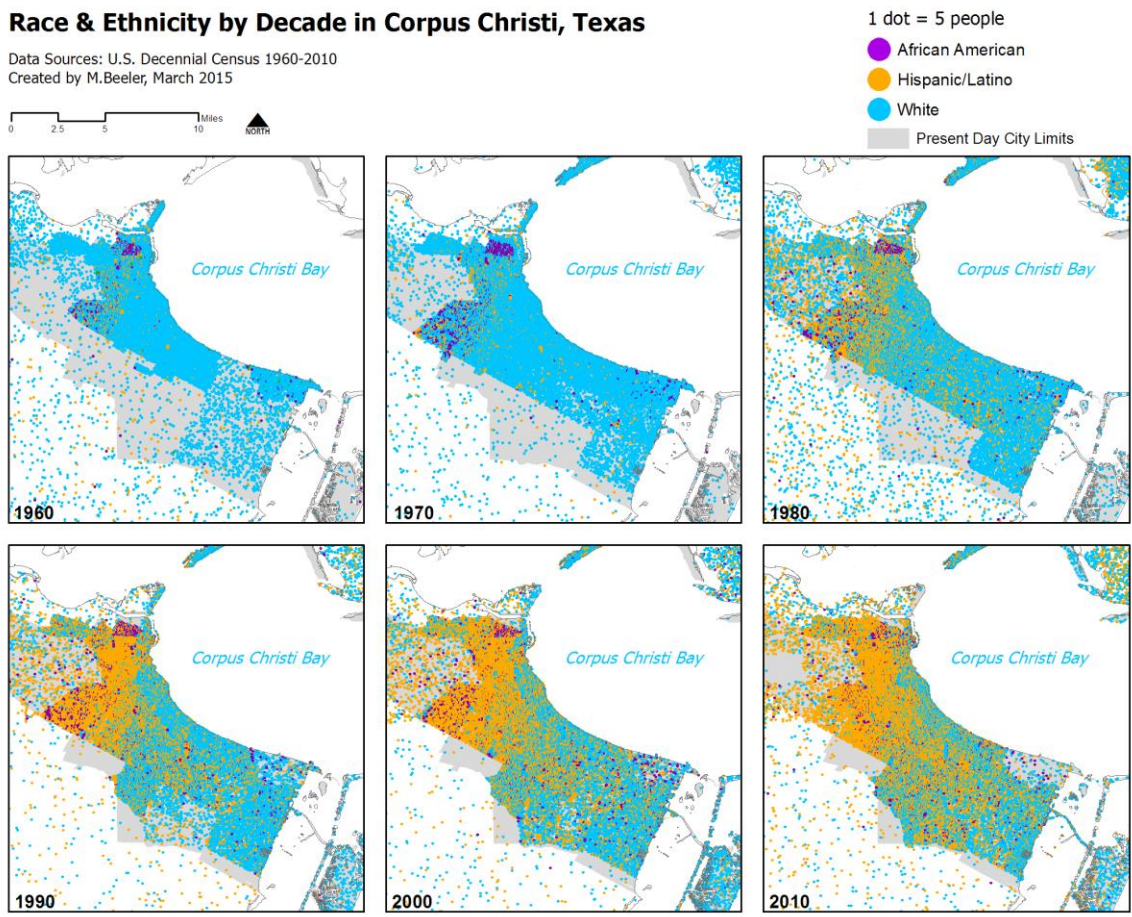


Figure 3. Distribution of race and ethnicity over time in Corpus Christi.

Table 2 compares the demographics of the three north side neighborhoods to the city’s demographics in 2010. All three neighborhoods have higher minority concentration and lower median household income levels than the city overall. Hillcrest and Washington-Coles have much higher poverty rates than the city’s average. The high poverty level in Washington-Coles may be due to the D.N. Leathers public housing facility being located in the neighborhood. The public housing facility has since been relocated just south of I-37, out of the neighborhood.

	Dona Park (CT 7, BG 1)	Hillcrest (CT 5, BG 1)	Washington- Coles (CT 64, BG 1 & 3)	City of Corpus Christi
White Non-Hispanic (%)	21.2	5.84	9.4	33.3
Hispanic (%)	73.0	57.8	60.2	59.7
African American (%)	4.6	35.8	30.8	4.3
Median Household Income	\$25,104	\$22,647	\$9,686	\$47,481
Poverty Rate (%)	13.6	31.3	63.48	18.2

Table 2. Demographic comparison of north side communities at the city (Source: Census 2010 via Social Explorer).

To estimate the characteristics of a population living within a certain distance of an environmental hazard, distance-based analysis has been used frequently in studies (Maantay et al., 2010). Accepted distances have ranged from 100 yards to 3 miles, with most analyses using 0.5- and 1-mile buffers (Maantay et al., 2010). While this method is more advanced than others, it is subject to its own limitations, such as uniform dispersion of emissions in all directions of a facility and equal-sized buffers for all facilities (Maantay et al., 2010).

This study maps half mile buffers around EPA Toxic Release Inventory (TRI) sites, TCEQ permitted hazardous waste sites, and brownfields (see Figure 2). Minority proximity to the top five largest emitters of TRI chemicals were noted to address this limitation of buffer analysis. Although not definitive, data suggest that environmental hazards are sited closer to minority areas and higher poverty areas than non-minority areas and non-poor areas.

Demographics in block groups with the majority of their area within half mile buffers of environmental hazards were calculated and compared to block groups outside of the buffers. The results are shown in Table 3. Block groups within half a mile of an environmental hazard have fewer White non-Hispanics than block groups farther from hazards but still within city limits. Minority concentration is also higher in block groups near hazards than the city averages for both African Americans and Hispanics. The poverty rate is also higher near hazards than the city average.

	City of Corpus Christi	Block Groups over 0.5 miles from a hazard	Block Groups within 0.5 miles of a hazard
White Non-Hispanic	32.6	34.0	20.4
African American	4.1	3.8	6.8
Hispanic	60.2	59.2	70.3
Poverty Rate	18.2	18.4	21.5

Table 3. Demographic proximity to all mapped environmental hazards (ACS 2009-2013).

Minority concentration was most pronounced for block groups within half a mile of top TRI emitters, with only 6% of the population being White non-Hispanic near these sites (Table 4). The poverty level was significantly higher than the city average, with 48% of the population near top TRI emitters earning incomes below the poverty rate. Block groups near brownfields had the second highest minority and poverty concentrations,



followed by permitted hazardous waste sites and all TRI sites. Figures 4 and 5 show the distribution of all mapped environmental hazards throughout the city. Note that most are clustered on the north side within the industrial district just outside of the city limits.

Another cluster is located just south of the industrial district.

	Within 0.5 miles of Top TRI Sites	Within 0.5 miles of TRI Sites	Within 0.5 miles of Permitted Hazardous Waste Site	Within 0.5 miles of Brownfields
White Non-Hispanic	5.6	27.6	19.6	14.2
African American	26.9	4.5	4.2	6.2
Hispanic	67.5	63.8	74.5	78.7
Poverty Rate	47.7	13.6	2.1	23.8

Table 4. Demographic proximity to specific hazards (ACS, 2009-2013).

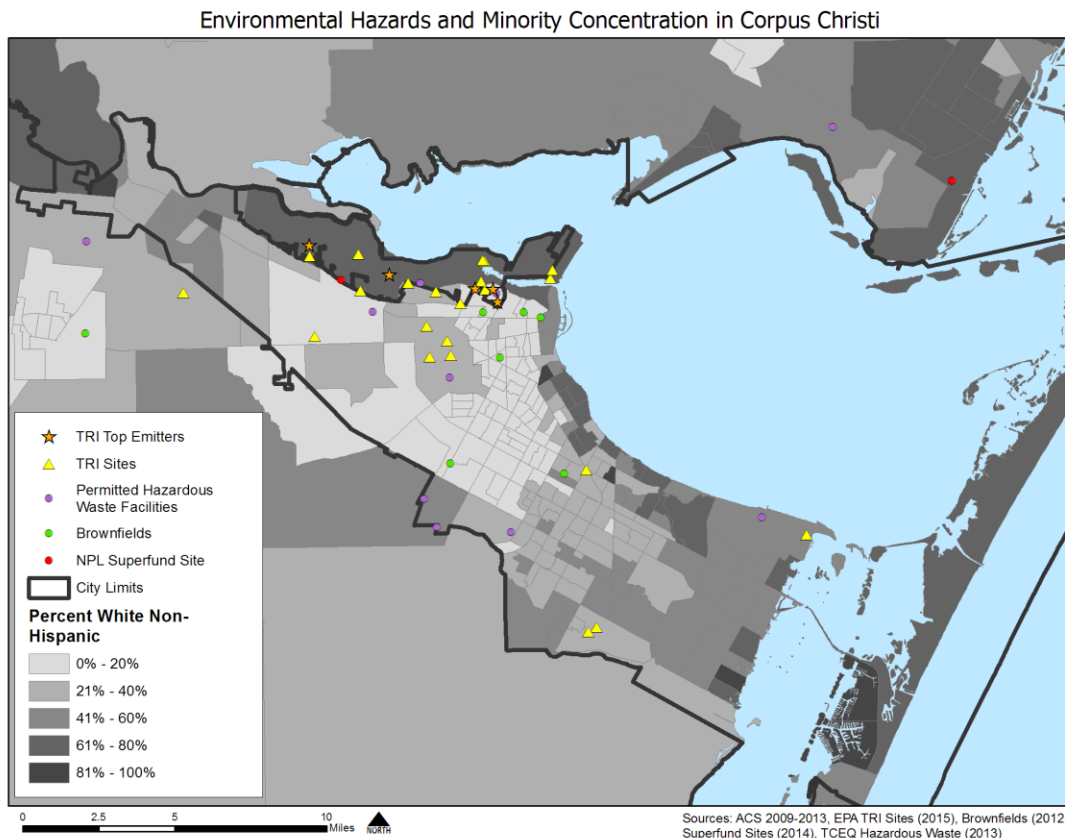


Figure 4. Proximity of environmental hazards in non-minority populations.

Environmental Hazards and Poverty Concentration in Corpus Christi

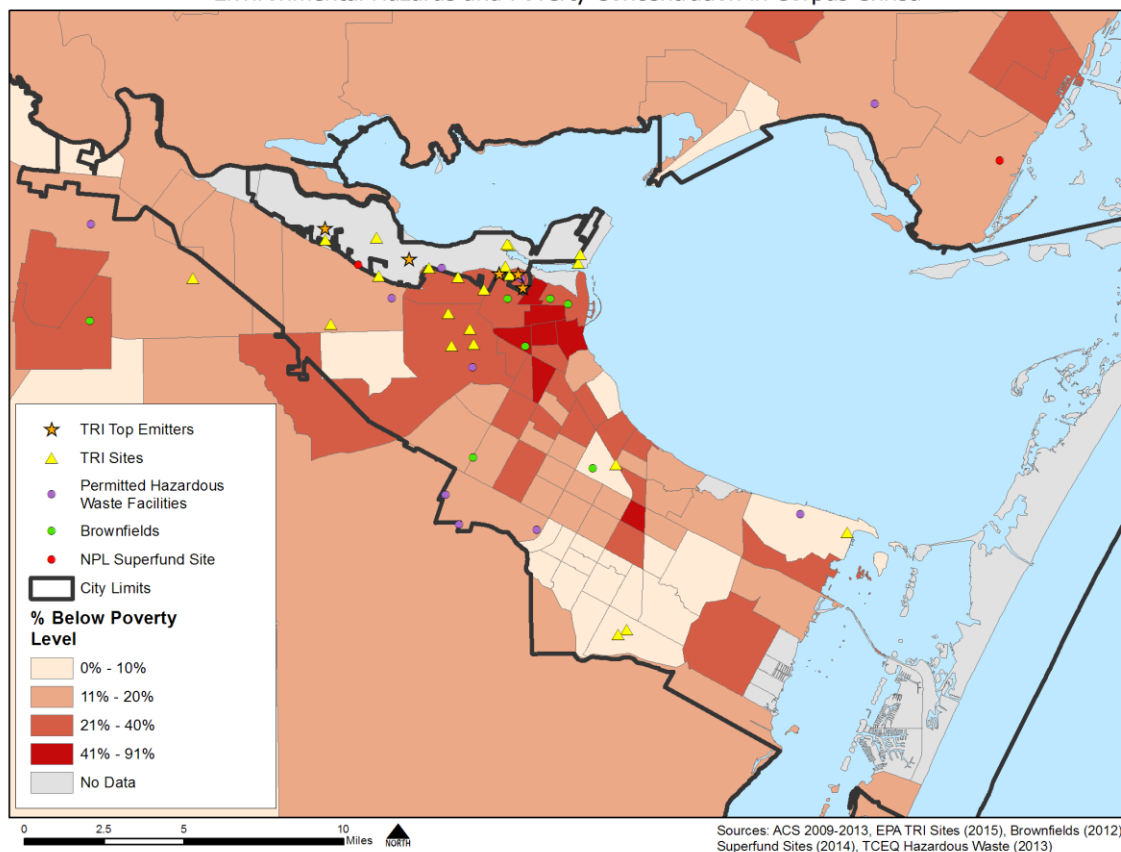


Figure 5. Proximity of environmental hazards to poverty concentrations.

Like communities around the nation, minority residents near Refinery Row have experienced public and mental health impacts due to their proximity to environmental hazards. At least as early as the 1970s, Corpus Christi has had numerous isolated events of explosions and fires at industrial facilities involving a natural gas station, oil refinery, and tank farm, often resulting in nearby residential evacuations (Corpus Christi Caller Times, 1978). Refinery fires, chemical spills, and tank explosions sometimes require dozens of homes to be evacuated (Averyt, 1992; Huff, 1993). Although direct injuries and deaths from industrial accidents have been relegated to workers at the scene (Corpus Christi Caller Times, 1981; Carrico, 1982; Harrill, 1989; Averyt, 1992; Baird, 2008), residents often

experience considerable worry and stress, sometimes likening a pipeline explosion to a plane crash or bomb explosion (Meighan, 1992). Some industrial facilities, such as Flint Hills East Plant next to Hillcrest, send automated calls to nearby residents to warn and update them about an accident. However, some residents do not always receive the call (Kelley, 2009).

In recent years, Hillcrest residents have been studied to determine impacts to their health due to their proximity to industrial activity. When CITGO was convicted in 2007 of violating the Clean Air Act by operating tanks without proper emission control devices, the Department of Justice ordered the courts to identify potential victims of the violations (United States v. CITGO Petro. Corp, 2014). Hillcrest organized to collect evidence of their health impacts. A 2008 study conducted by Texas A&M Health Science Center detected benzene in blood samples of Hillcrest residents (Texas Commission on Environmental Quality, 2012). This finding spurred a study by TCEQ in 2010 to test soil and groundwater for harmful chemicals in the neighborhood. However, the study found only pollution below screening levels for human health (Texas Commission on Environmental Quality, 2012). Although hundreds of individuals submitted statements to be declared victims and reported vomiting, dizziness and shortness of breath, the court declared the neighborhood was unable to show a causal connection between their claims and CITGO's offense.

Other neighborhoods have also showed evidence of contamination. In 1996, the Dona Park neighborhood tested positive for cadmium and lead contamination in the soil and residents experienced higher-than-average cancer rates (Center for Public Integrity, 2012). The Housing Authority found a future public housing site contaminated with petroleum hydrocarbons in Washington Coles in 2009 (Meyers, 2011).

The data above show that environmental hazards in Corpus Christi are correlated more with higher poverty and minority status than low poverty and non-minority status. However, previous environmental justice studies urge going beyond present-day demographic analysis to understand how these problems manifested (Boone & Modarres, 1999). The following sections explore whether planning and zoning actions taken by the City of Corpus Christi contributed to present-day environmental justice problems on the north side.

### **Chapter 3: Methodology**

I conducted archival research to understand whether city planning and zoning may have led to present-day environmental injustice by allowing or encouraging the parallel growth of the north side neighborhoods and industrial sites over time. Archived news articles and city maps helped me understand whether industrial or neighborhood land uses came first on the north side, an important component to understanding present-day environmental injustice (Mohai, Pellow & Roberts, 2009). News articles and city reports indirectly related to land use planning helped in tracing the growth and decline of industry and residential neighborhoods. These resources helped contextualize zoning maps and city land use plans to identify when the city may have attempted or failed to address north side resident problems. City plans, reports and zoning maps relating to the north side were reviewed to understand whether the City contributed to the neighborhoods' proximity to industrial sites. Table 5 shows planning documents reviewed for this study. This not an exhaustive list of all planning documents produced or commissioned by the City. The scope and selection of documents reviewed for this report were largely based on availability.

Year	Document
1937	First zoning map and ordinance
1939	Zoning map and ordinance
1948	Zoning map and ordinance
1953	Comprehensive Plan
1957	Zoning map and ordinance
1961	Zoning map and ordinance
1966	Comprehensive Plan
1969	Zoning map and ordinance
1975	Zoning ordinance
1980	Comprehensive Plan
1989	Westside Development Area Plan (Amend. 1995)
1999	Northside Plan
2003	Northside Redevelopment Plan (not adopted)
2008	Northside Renewal Plan (not adopted)
2013	Central Business District Area Plan
2014	Zoning map and ordinance

Table 5. Timeline of plans and zoning ordinances reviewed in this report.

The discussion that follows is not intended to be a systematic review of each planning document in the context of neighborhood growth and decline. Rather, it is a summary of main points in Corpus Christi planning history that have affected industrial or neighborhood growth.

## Chapter 4: Findings

To understand how present-day environmental justice problems occurred on the north side, it is important to trace the development of industrial and neighborhood growth to understand which came first. For simplicity, industrial and neighborhood growth are described individually. Figure 6 provides a timeline of highlights in industrial and residential growth alongside city milestones.

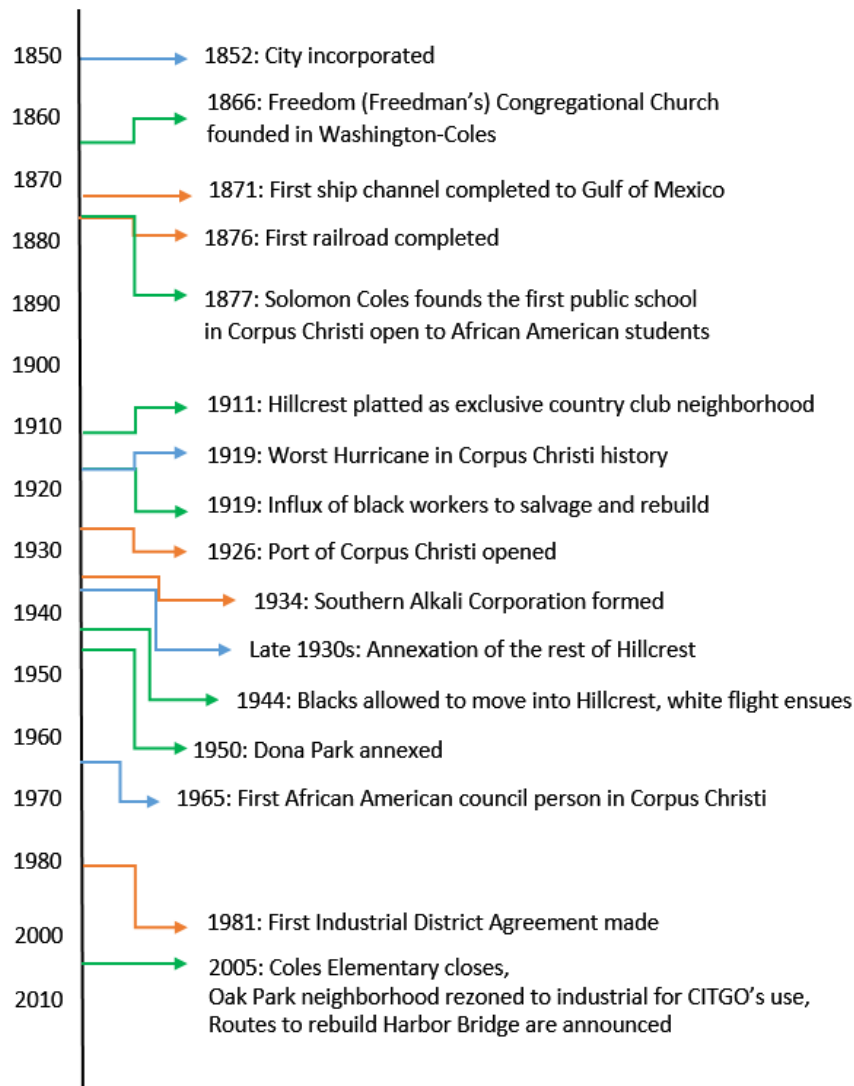


Figure 6. Timeline of industrial (orange), residential (green), and city (blue) growth highlights.

## **INDUSTRIAL DISTRICT GROWTH**

Corpus Christi was not always an oil and gas town. From its incorporation in 1852 until the 1930s, the city's economy was largely agricultural, relying heavily on cotton production and commercial fishing, even upon establishment of several railroad lines and the Port of Corpus Christi (Fig. 7; Miller, 1937). The first major industrial facility in Corpus Christi was established in 1934, following successful gas exploration in the early 1930s and the official opening of the Port of Corpus Christi in 1926 (Miller, 1937; Savage, 2012). Regional oil discovery by 1937 spurred the construction of four pipelines and eight refineries, with more on the way (Miller, 1937). Industrial development catalyzed population growth for the city, doubling population each decade from 1930 to 1950 (Harland Bartholomew and Associates, 1952a). Cost-efficient transportation and labor were cited as reasons for further industrial relocation and expansion in the city (Miller, 1937).



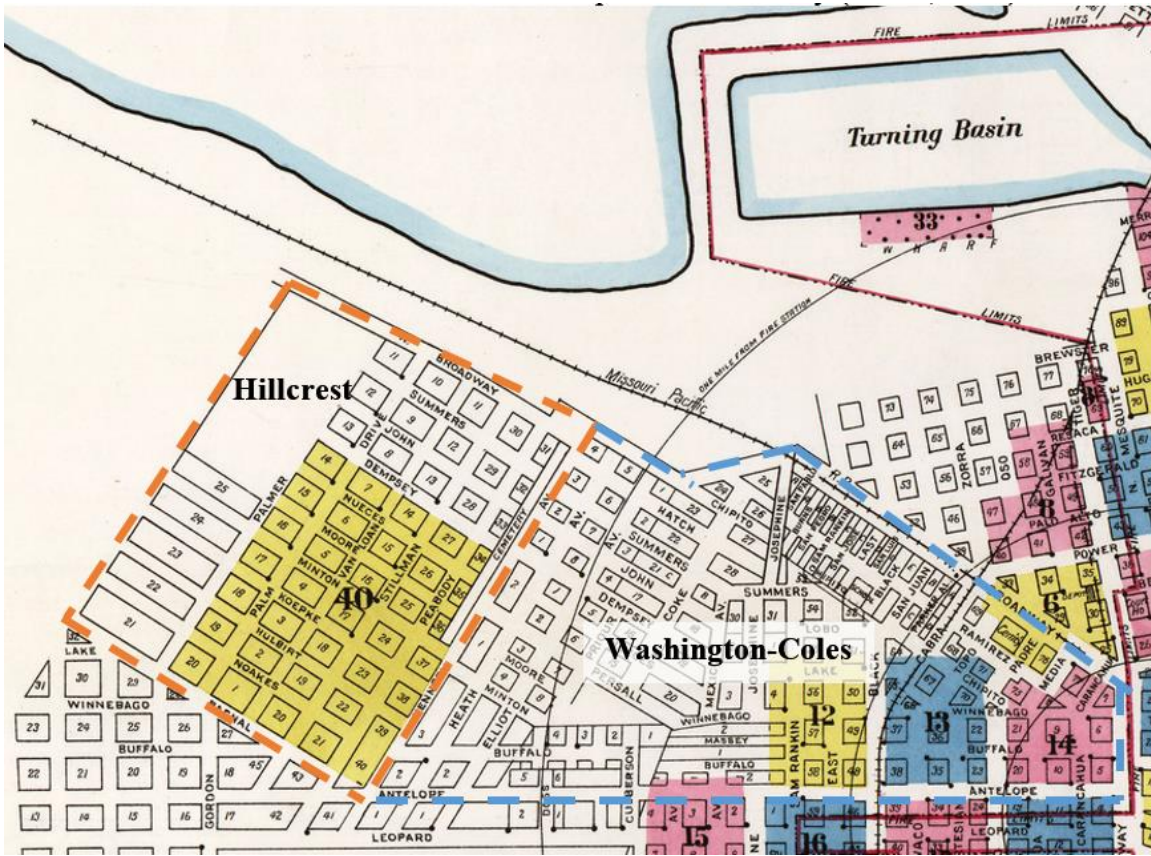


Figure 7. Location of the Port in relation to the north side neighborhoods (Sanborn map, 1927).

Industry located near the Port, mostly likely for transportation efficiency, which quickly surrounded Hillcrest by undesirable land uses. By 1940, nearly all land in the present-day industrial district had been bought by many industrial companies. Hillcrest was hemmed in by Barnsdall to the west, Houston Oil Co. to the north, and General American Transportation tank farm to the east in Washington-Coles (Fig. 8).

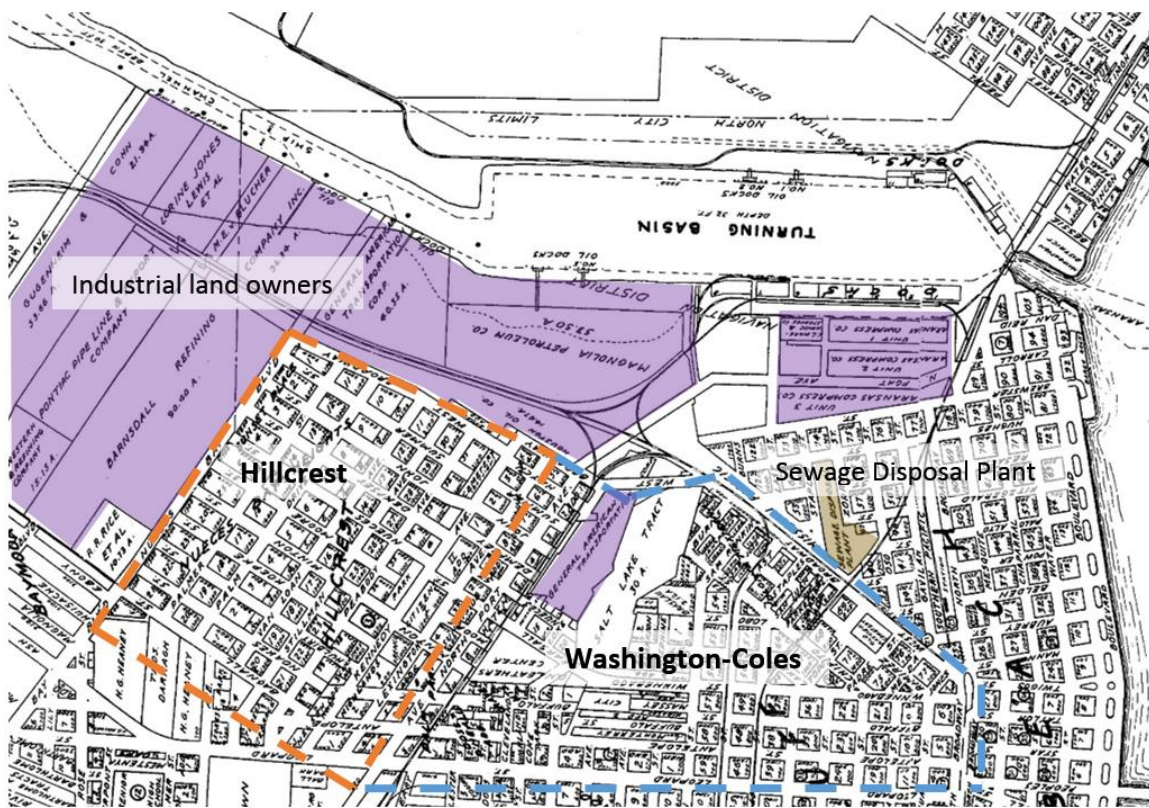


Figure 8. Tract ownership, 1940 (Blutcher, 1940).

More industrial development was actively recruited by Central Power & Light Company (CPL) for continued economic growth. CPL conducted a survey of industrial possibilities in the South Texas area "to determine the proper location of different industries...and then to persuade the industries themselves to locate where their success had been all but assured in advance" (Miller, 1937). In this way, industrial development had not been "haphazard" but "intelligently planned" (Miller, 1937). CPL planned to recruit six major industries to the region: petroleum development, basic chemicals, glassware manufacturing, meat packing, soap manufacturing, and canning. All of these industries were chosen for Corpus due to the availability of raw materials, inexpensive labor, or transportation advantages (Miller, 1937).

By the 1950s, the industrial trend seemed to be expansion of existing refineries rather than relocation of more refineries, as no significant refinery infrastructure had been built since the turn of the century (Harland Bartholomew and Associates, 1952a). A 1952 planning map of employment centers in the city and ETJ showed that three refineries and one chemical plant existed near Hillcrest and other annexed residential neighborhoods in the north (Harland Bartholomew and Associates, 1952a). Industrial facilities were located adjacent to Hillcrest and Washington-Coles by 1950 (Fig. 9).

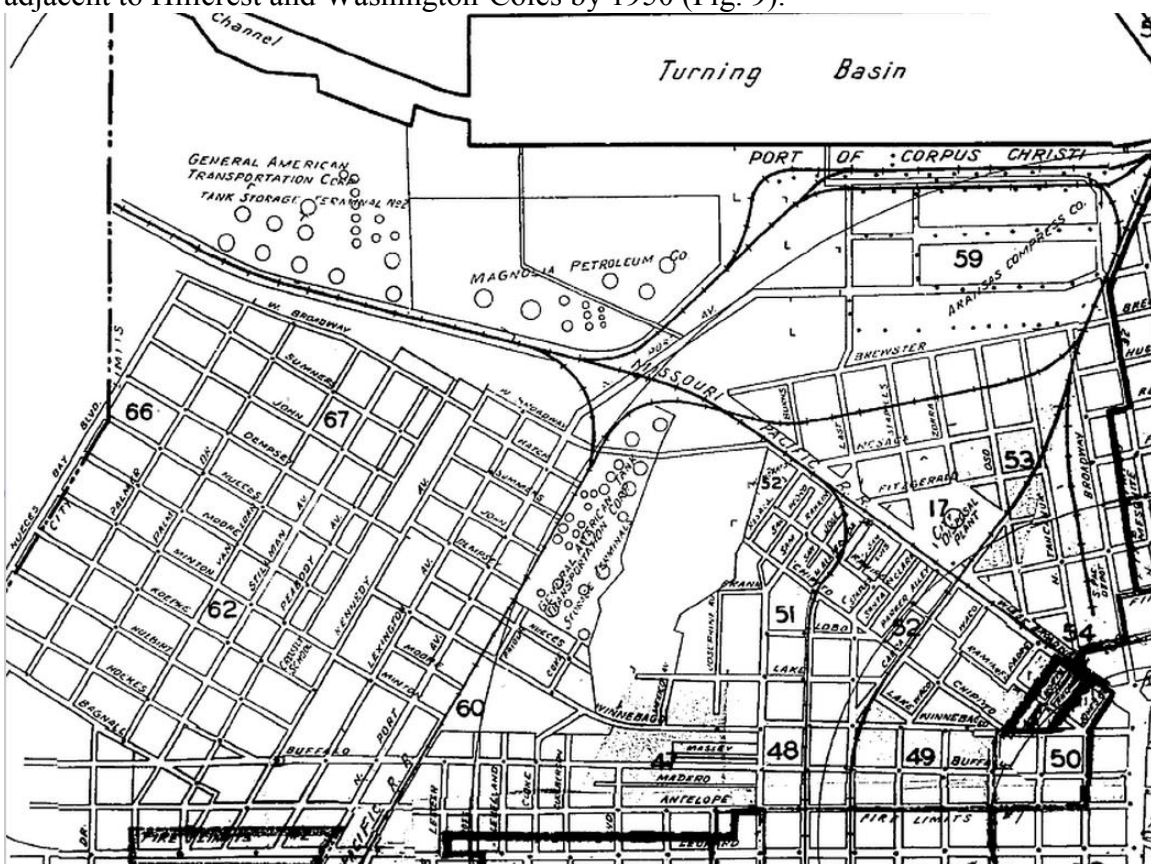


Figure 9. Proximity of industry to Hillcrest and Washington-Coles (Sanborn map, 1950).

Aerial imagery since the 1950s reflects industrial encroachment into each north side neighborhood over time. In 1955, industrial development next to the Port seemed fully

built out (Fig. 10a). Tanks can be seen immediately up to the neighborhood boundaries on both the north and west sides of Hillcrest. By 1978, Interstate 37 was fully constructed, while some tanks were removed in the industrial properties west of the neighborhood (Fig. 10b). It is unsure whether these tanks were relocated elsewhere in the north side. Several tanks were still directly across the street from homes. A few decades later, it becomes apparent that the tanks were replaced with refinery facilities and smoke stacks (Fig. 10c). By 2002, a buffer had been created approximately two blocks into the neighborhood, created by a buyout from Flint Hills East Plant (Flint Hills Resources, 2012). These two blocks closest to the western industry were used for office space and parking. A few tanks were also removed north of Hillcrest. Today, the industrial activity to the west of Hillcrest remains fully built out. However, several tanks north of the neighborhood have been removed since 2002 (Fig. 10d).



Figure 10. Hillcrest, (a) 1955, (b) 1978, (c) 2002, and (d) 2011 (Texas General Land Office & U.S. Geological Survey via Google Earth).

Though difficult to discern from aerial imagery, Washington-Coles residents also dealt with industrial siting within their neighborhood. As early as the 1950s, a storage tank facility owned by General American Tank Transportation Corporation was sited between Hillcrest and Washington-Coles (Fig. 11a). A wastewater treatment plant was also sited east of the neighborhood, and a couple of industrial facilities were also located along the main highway and railroad tracks east of Washington-Coles (Fig. 11a). The tank farm persisted until 2002 when the tanks were removed and the site remediated (Fig. 11b). The wastewater treatment plant still exists today.

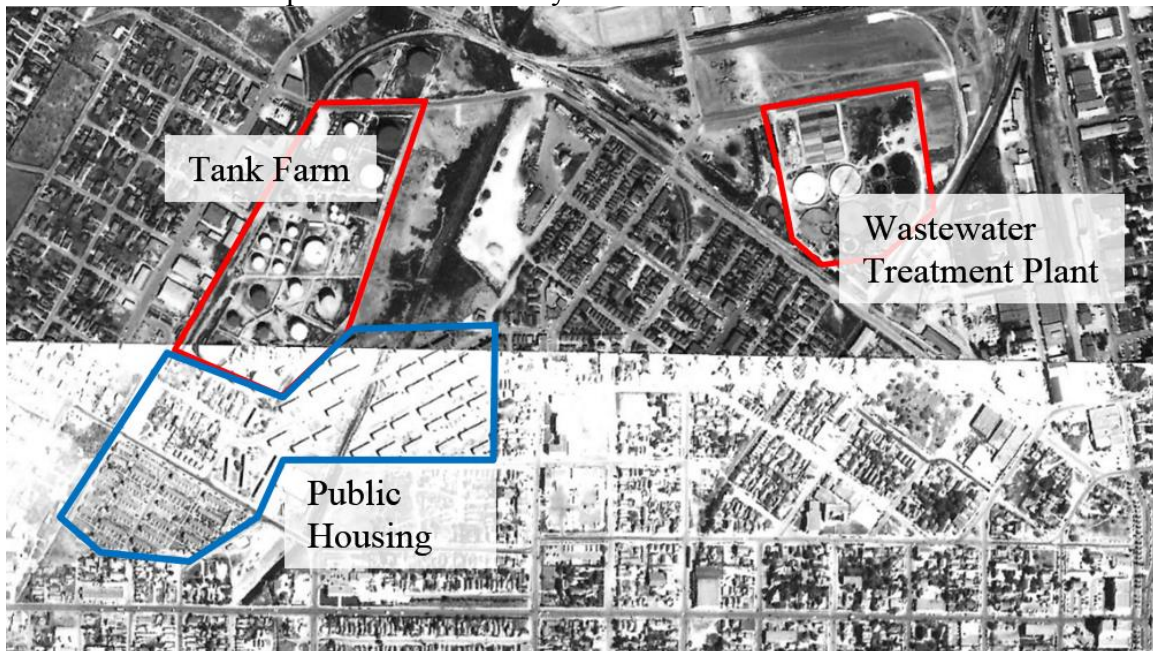


Figure 11a. Washington-Coles, 1955 (Texas General Land Office & U.S. Geological Survey via Google Earth).

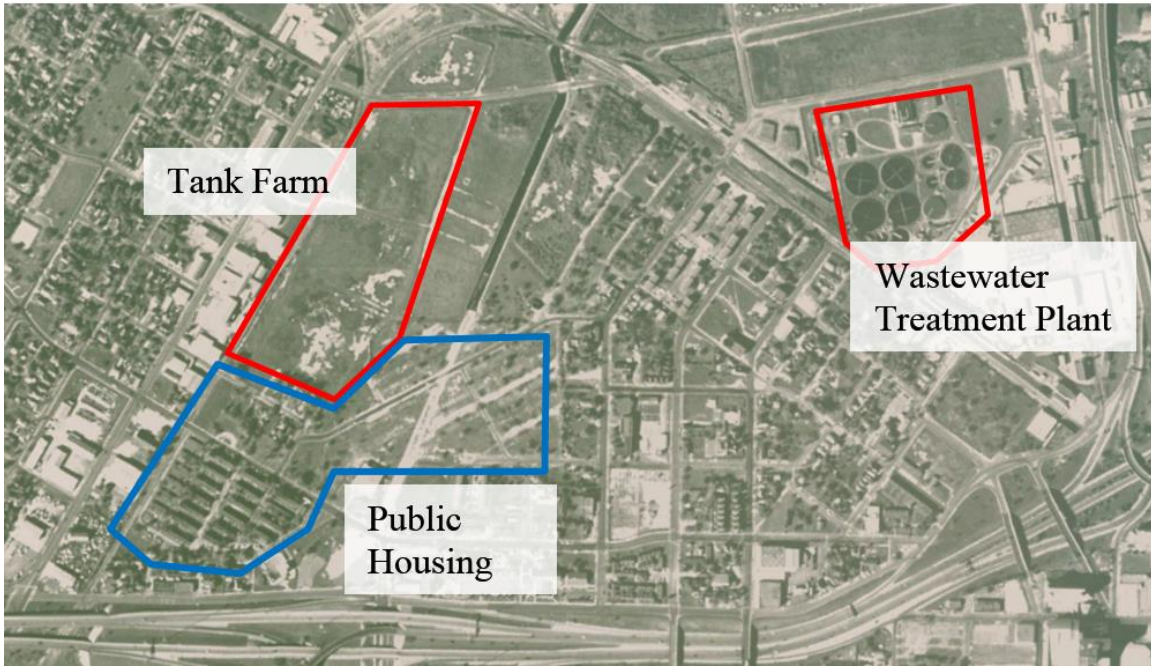


Figure 11b. Washington-Coles, 2002 (Texas General Land Office & U.S. Geological Survey via Google Earth).

When Dona Park was annexed in the 1950s, the subdivision was in close proximity to the industrial district. Storage tanks existed to the east of the community in addition to an ASARCO facility directly to the north (Fig 12a). The zinc smelter facility operated from 1941 to 1985 and in 1988, a waste management facility operated at the ASARCO site (TCEQ, 2013). TCEQ has investigated the possibility of zinc, cadmium, and lead contamination in the neighborhood since 1994, recently finding lead and cadmium contamination in the yards of Dona Park residents (TCEQ, 2013). Nearby tanks adjacent to the neighborhood were removed as of 2004 (Fig. 12b). As of 2011, the ASARCO facility was dismantled (Fig. 12c).



Figure 12. Dona Park, (a) 1955, (b) 2004 and (c) 2011 (Texas General Land Office & U.S. Geological Survey via Google Earth).



The industrial district (AKA Refinery Row) became official in 1981 with the city's first industrial district agreement (CITGO, 2006). Industrial district agreements protect industrial facilities from annexation and thus from permitting and platting requirements. They also provide cities an opportunity to negotiate payment in lieu of property taxes. Industry can also negotiate for fire protection from the city (Corpus Christi Regional Economic Development Corporation, 2007). Agreements have been renegotiated every 7-15 years, each time renewing the clause that protects the industrial district from annexation.

### **NEIGHBORHOOD GROWTH**

Long before industrial development moved into the city, Washington-Coles and Hillcrest were home to minority residents. Among the first neighborhoods established in Corpus Christi, it was shared by African Americans and Mexican Americans with segregated churches that can be seen on maps as early as 1887 (Glasrud et al., 2012; Koch, 1887). Railroad lines ran through what is today Washington-Coles, with some factories and other facilities along the railroad closer to downtown, but not in the present-day boundaries (Koch, 1887). The first African American schools in the city were established in the late 1800s in Washington-Coles (Glasrud et al., 2012). Hillcrest was platted in 1911 as an exclusive community for the city's country club that was located farther west (Malan, 2010). In 1919, the destruction caused by the worst hurricane in Corpus Christi history brought an influx of black workers to the city to salvage and rebuild (Glasrud et al., 2012). By the late 1930s, all of present-day Hillcrest was annexed along with other residential communities south of the industrial district, according to city annexation maps. Recall by this time, the Port was established and industrial facilities were locating in the present-day industrial district.

Neighborhood growth on the north side can be largely attributed to segregation and redlining policies. Prior to 1944, African Americans were only allowed to live in Washington-Coles' Census tract, where slum conditions were occurring in dilapidated "shotgun houses," shoddily constructed at a time when there were no construction regulations in the city (Housing Authority of the City of Corpus Christi, 1944). In other areas of the city high concentrations of Hispanics were also living in slum conditions, with poverty and disease. Slum conditions and blight were further exacerbated by the Federal Housing Authority's refusal to insure mortgages due to existing blight or commercial land use (Figure 13). Meanwhile, unscrupulous land speculators were preying on poor African Americans. (Housing Authority of the City of Corpus Christi, 1944).

Home ownership of the type which is promoted by many operators in this section, whereby well-meaning but improperly informed people 'purchase' land at high prices for small down payments and monthly payment of usually \$5.00, should be discouraged or controlled. The 'owner' can afford to build only a small dwelling of scrap lumber or an ordinary 'shotgun' house, and often ends up by losing the lot and house to an unscrupulous mortgagor because of default in payments. (Housing Authority of the City of Corpus Christi 1944)

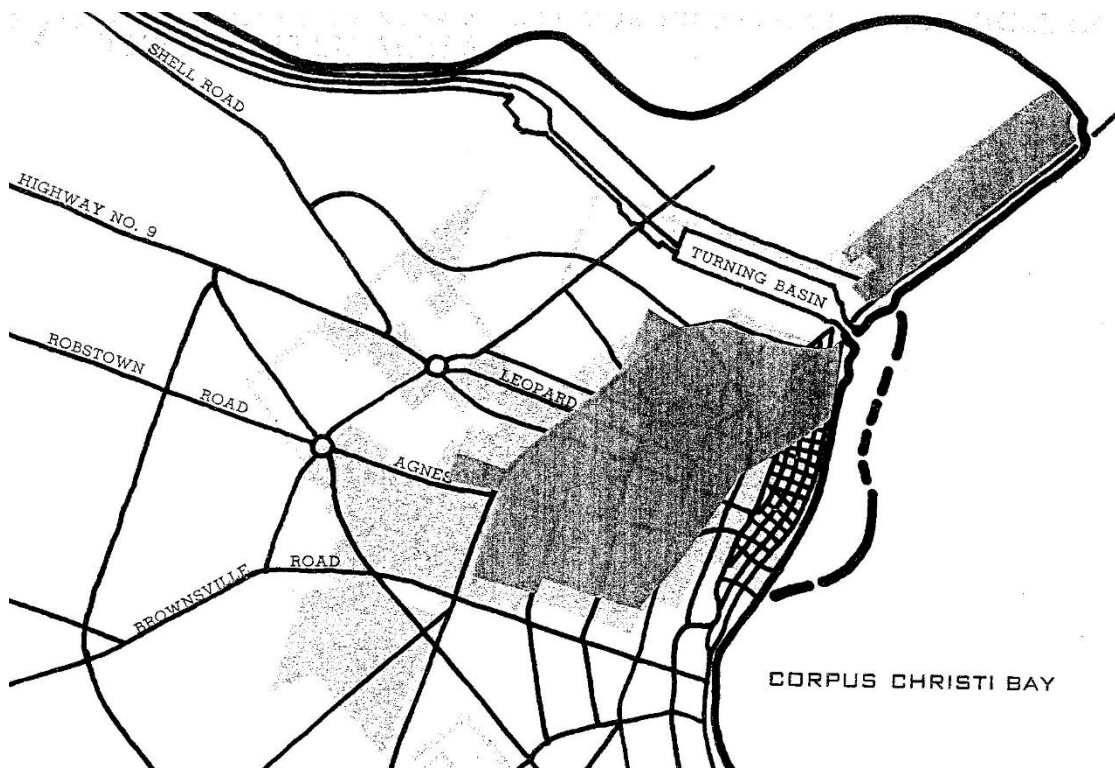


Figure 13. Slums areas designated by Corpus Christi Housing Authority (dark gray) and slum and commercial areas in which the FHA will not insure mortgages due to blight or commercial use (light gray) (Housing Authority of the City of Corpus Christi 1944).

The 1944 Corpus Christi Housing Authority Report “strongly” recommended expanding the overcrowded African American enclave in Washington-Coles into the Hillcrest neighborhood and southwest near the airport. Although the Housing Authority acknowledged that the north side was becoming “overrun” with industry and minorities, instead of relocating public housing, it continued to encourage redevelopment in the same area. The agency valued housing minorities close to centers of employment, stating “it is more economical from every standpoint to keep ‘the little man’ close to the central section of the city, rather than spread throughout the metropolitan area” (Housing Authority of the City of Corpus Christi, 1944). According to the 1944 report, the Hispanic community had

better luck with housing. They tended to be more affluent than African Americans and were able to own homes. However, there was still demand for moderate-income rental housing and homeownership opportunities.

When Census tract 5 was opened to African Americans shortly after the report, white flight from Hillcrest ensued just as the Housing Authority predicted. Despite the poor housing conditions in Washington-Coles, neighborhood commercial thrived in the 1940s and 1950s. The neighborhood provided everything for the African American community including schools, churches, stores, and nightlife (Strasburg, 1998a). Since businesses were segregated, black-owned businesses were concentrated in this area and doing quite well, but when the city became racially integrated, the black population dispersed and businesses suffered. A longtime resident of the north side recalled its heyday:

During the 1950s and 60s, the northside was known for the top-name entertainment featured in such establishments as the Cotton Club...after integration, some blacks moved to other areas, and the churches and bars went with them...Some businesses relocated, but others died (Cardenas, 1983).

By 1960, only half of the black population in Corpus Christi lived on the north side (Strasburg, 1998a). Those who could move away from the industrial area did so, leaving behind those living in poverty and public housing. Although the black population in the city increased between 1960 and 1970, there was an 8% decline in the black population living in Hillcrest and Washington-Coles over the decade (City of Corpus Christi Long Range Planning, 1974). As the neighborhoods declined, vacancies rose and attracted drugs traffic and other criminal activity.

Witnessing the neighborhoods' decline, former and current residents took action in the 1980s and 90s to preserve and restore the neighborhoods. Many of the projects addressed physical revitalization and major issues such as crime and drug trafficking. The Northside Business Association worked to improve the appearance of businesses and

increase security in the neighborhoods (Cardenas, 1983). The Northside Manor Tenants' Association formed a neighborhood watch (Ramsdell, 1984). Residents and local preservationists also worked to salvage the theatre, cemetery, and public housing complexes in Washington-Coles (Strasburg, 1998b). Hillcrest, with many single parent households, invited the mayor to visit their neighborhood park and urged him to help reduce break-ins and revitalize the playground (Cardenas, 1984). In the early 1990s, a former resident of Washington-Coles proposed to repurpose Leathers Drug Store, where much of the drug dealing and loitering in the neighborhood was taking place (Williams, 1992). She envisioned a cultural arts center for the neighborhood and black and Hispanic communities, hosting traveling art exhibits, history libraries, and meeting spaces for community organizations. Area businesses donated to support the project, but the physical renovations may have proved to be too much. There is no Leather Cultural Arts Center on the north side today.

City officials also began to fund cosmetic improvements to revitalize the north side in the 1980s, but seemed to overlook the deep-seeded issues the community was working to solve. City Council adopted programs to renovate north side homes, apartments, and businesses. Funded by Community Development Block Grants, the City offered grants and loans to low-income residents and businesses for exterior paint (Tumiel, 1983). The programs prioritized owners with code violations, vacant properties, and struggling businesses. The city also helped fund yardwork and tree-trimming to establish neighborhood pride (Tumiel, 1983).

Despite some municipal efforts to revitalize the north side, disinvestment and out-migration from the community continued. To reduce crime and blight, the City focused on enforcing building standards and issuing orders to repair or demolish structures (Cardenas, 1983b). Old nightclubs and abandoned homes were demolished in the 1990s, removing

places for drug dealers to hide from the police but losing a lot of history in the process (George, 1996). During this time, several residential buyouts also occurred near to industrial facilities in the north side, leaving current communities hoping for the same.

Between 1980 and 2000, industry bought an estimated 750 to 1000 homes on the north side (Foley, 2011). Buyouts created an opportunity for new industrial growth. Oak Park, a subdivision adjacent to the industrial district, was rezoned to industrial use for CITGO's gasoline and diesel treatment facilities (Santos-Garza, 2005). That same year, the population decline in Washington-Coles spurred the closing of Washington-Coles Elementary, indicating further decline and disinvestment for the community. In a third blow to the north side, plans to rebuild Harbor Bridge were announced, with TxDOT's preferred route going directly through Washington-Coles (Santos-Garza, 2005). In the past, residents who remained on the north side hoped for a neighborhood rebound, but felt that the city would simply not invest: "City administration, along with public housing officials and state and federal resources, could come in and redesign the whole Northside. But there's no genuine interest in revitalization" (Averyt & Strasburg, 1998). Today, Hillcrest's Citizens for Environmental Justice organization continues to work for a buyout that will allow residents to purchase safe housing away from pollution (Malan, 2010).

#### **PLANNING ACTIONS AND IMPACT ON THE NORTHSIDE**

The city's first zoning ordinance in 1937 neglected to provide north side neighborhoods with a residential distinction, allowing them to remain susceptible to industrial encroachment (Zoning Ordinance, 1937). The zoning ordinance used Euclidean II zoning, which orders traditional classifications such as residential, commercial, and industrial in a nested fashion that allows multiple classifications in a zoning district. For example, the zoning ordinance allowed dwelling districts to have one- and two-family

dwellings, churches, schools, and other neighborhood facilities. Apartment districts could have multifamily dwellings as well as all dwelling uses. Retail districts allowed offices, stores, and restaurants as well as uses allowed in Apartment and Dwelling districts. Commercial allowed for larger commercial establishments, plus uses allowed in Retail, Apartment, and Dwelling. Lastly, Manufacturing districts allowed for all of the above plus light and heavy industrial activity.

Nested zoning categories foster mixed use but can provide better health and safety protection for some more than others. With this Euclidean II zoning classification, residents living in single-family zoning districts are the most exclusive zoning category, thus arguably the most protected from commercial and industrial uses. According to the 1937 zoning map, Washington-Coles was zoned entirely in Commercial and Manufacturing districts, even though it is known that residential subdivisions existed in this area. Apartment districts were used as a buffer between Dwelling and Commercial districts. In 1939, new subdivisions annexed west of Hillcrest along the north side were also zoned Dwelling or Apartment (Fig. 14). Dona Park was zoned single family once it was annexed in 1948 (Zoning Ordinance, 1948).

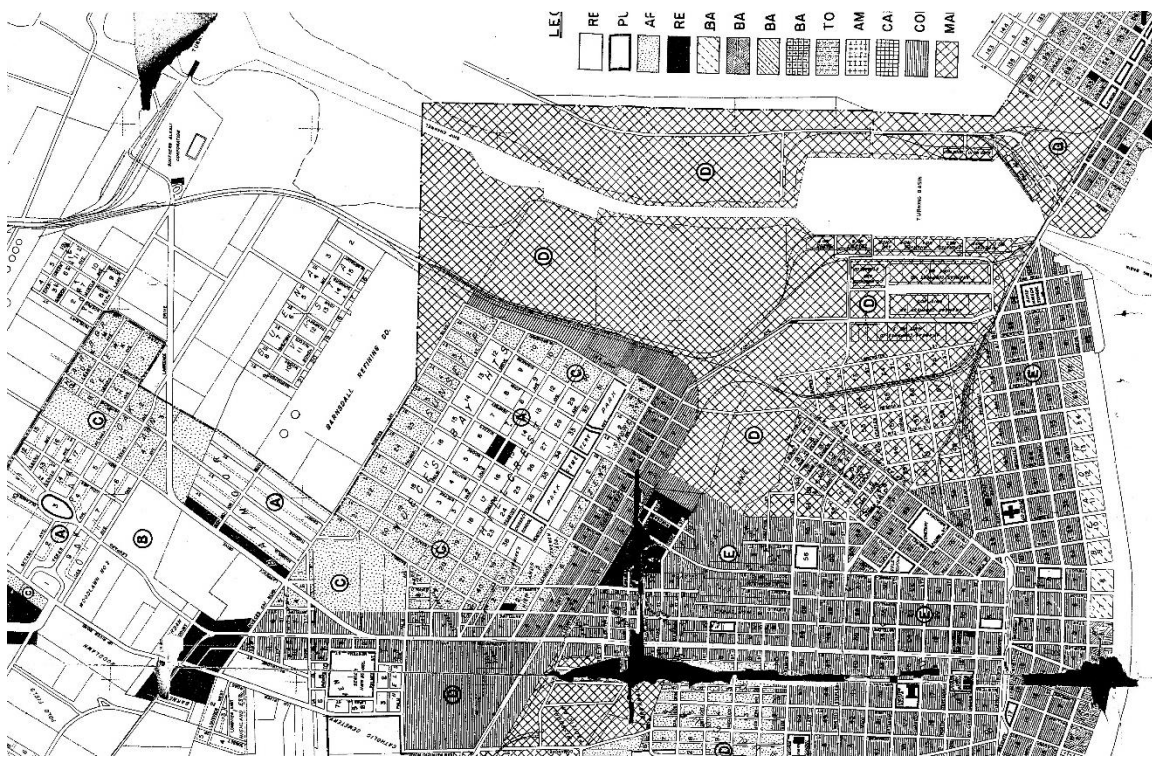


Figure 14. 1939 zoning map (Corpus Christi Zoning Map, 1939).

New zoning changes and public housing investment in the 1940s made it clear that living relatively near industry did not concern decision makers. In fact, as discussed above, the Corpus Christi Housing Authority favored locating housing for industrial workers close to their employment (Housing Authority of the City of Corpus Christi, 1944). The 1940s brought three new public housing projects to Corpus Christi, one of which was D.N. Leathers for the African American population in Washington-Coles (Corpus Christi Caller Times, 1941). With the addition of D.N Leathers, multi-family dwellings, hospitals, and churches were also added to the neighborhood's zoning map, among other uses. Land along Port Avenue was zoned Heavy Industrial, which expressly prohibited housing (Fig. 15). Further in the neighborhood, land was zoned light industrial, which allowed all other uses



in previous classifications except Heavy Industrial. The eastern half of the neighborhood was zoned for multi-family dwellings and commercial activity.

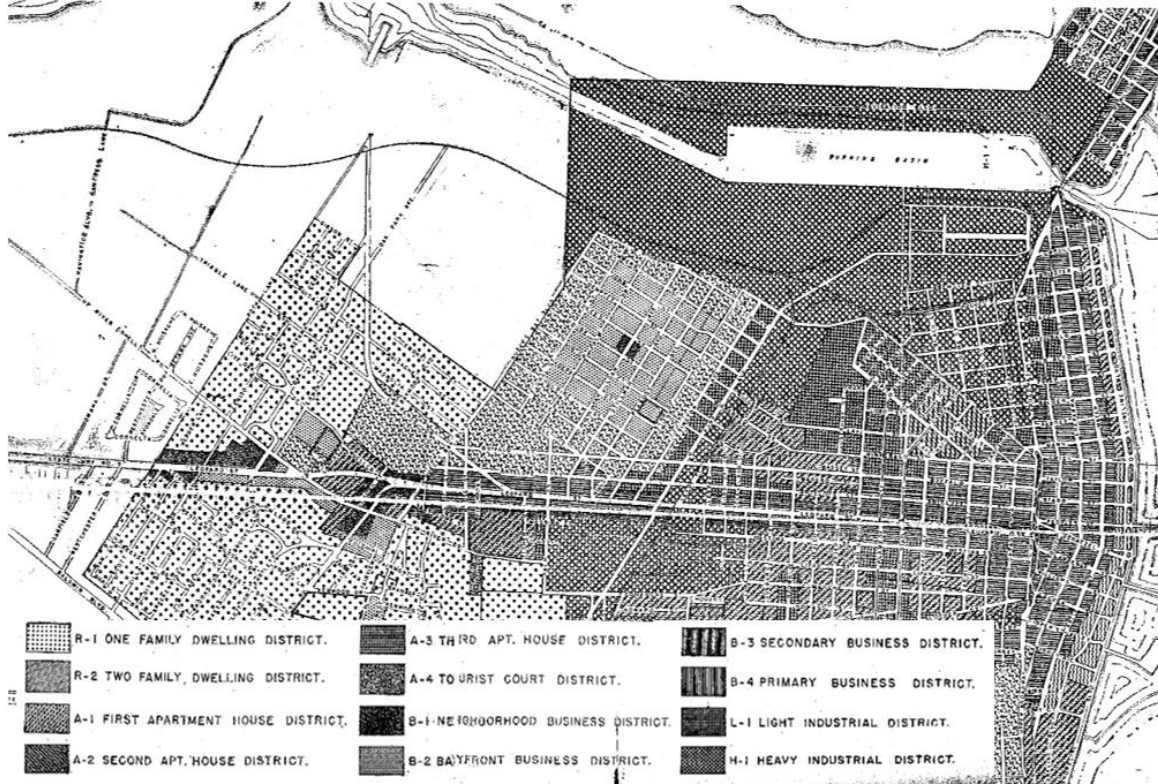


Figure 15. 1948 zoning map (Corpus Christi Zoning Map, 1948).

Although slum clearance was a component of the public housing projects in the 1940s, plans for Urban Renewal in Corpus Christi occurred primarily in the 1950s. A planner from the National Resources Planning Board was funded by the most powerful people in the city (including the mayor, bank president, head of Southern Alkali Corporation, real estate board members, and oil and gas representatives) to create a plan to demonstrate the effectiveness of the federal urban redevelopment program (Weiss, 1980). The city encouraged a citizen group to be formed by those who donated to the study in order to ensure the plan would not be shelved after completion (Corpus Christi Caller

Times, 1950). Yet, NRPB was notorious for neglecting to solicit participation from minority and low-income residents, especially groups who would be impacted by their plans (Weiss, 1980).

Expressway plans announced in the 1940s spurred more planning for slum clearance. In 1955, the city sought federal funding to plan the redevelopment in Washington-Coles that would impact 1,500 households (Corpus Christi Caller Times, 1955). The next year, federal funding for the redevelopment plan was approved, making Corpus Christ was the first city in Texas to obtain federal urban renewal funding (Corpus Christi Caller Times, 1956). FHA loans would be offered to residents displaced by the development, while a “trailblazing” project from the National Association of Home Builders built an undetermined number of “low-cost” homes (Lakeland Ledger, 1956). The 1957 zoning map showed the extent of highway construction and displacement, but no major differences in zoning classifications for north side neighborhoods (Fig. 16; Corpus Christi Zoning Map, 1957).

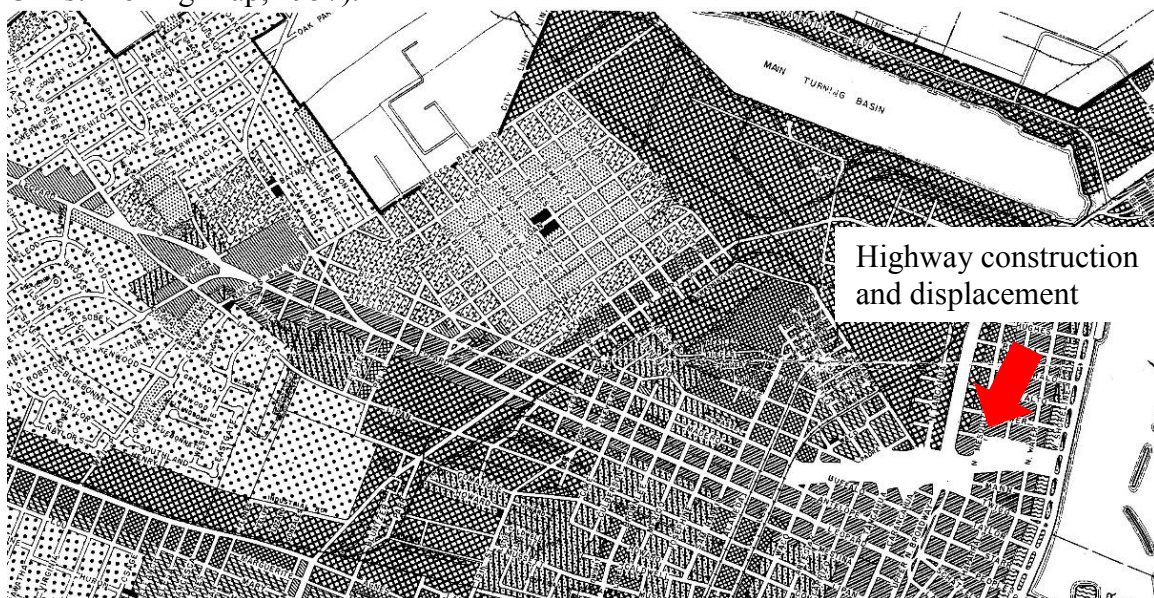


Figure 16. 1957 zoning map (Corpus Christi Zoning Map, 1957).

In 1953, the first comprehensive plan adopted by the City of Corpus Christi provided concrete strategies to rehabilitate the north side, but these strategies were not codified in the zoning ordinance that followed (Harland Bartholomew and Associates, 1953). Among other strategies, the plan recommended creating an amortization scheme to eliminate scattered commercial and industrial buildings in neighborhoods, protect neighborhoods through more restrictive zoning, and redevelop areas that cannot be rehabilitated (Harland Bartholomew and Associates, 1953). The zoning map, however, expanded I-2 Light Industrial district further east into the Washington-Coles neighborhood. I-2 districts allowed for all nested uses as well, including residential uses, which resulted in the same mix of commercial and light industrial uses among low-density residential uses, the exact problem the comprehensive plan sought to eliminate. Only after the 1975 zoning ordinance were dwellings and permanent or temporary housing of people finally excluded in light industrial zones (Zoning Ordinance, 1975). The zoning ordinance also required objectionable uses in I-3 Heavy Industrial districts, such as petroleum refining, to attend a board hearing before expansion. However, facilities in the large, established I-3 district located immediately north of the north side neighborhoods were exempt from this process (Zoning Ordinance, 1961).

In an effort to reenergize the economy during a growth plateau in the 1960s, the City created another comprehensive plan, which recommended the expansion of heavy industrial facilities in the north side (Lessoft, 2008). The downtown element of the plan designated the area immediately east of Washington-Coles for heavy industrial use due to proximity to the freeway and existing industrial facilities. However, only 1-2 blocks were currently used by industrial facilities in that area (Harland Bartholomew and Associates, 1966). The land use element of the comprehensive plan recommended expanding the industrial district west and south of Dona Park (Harland Bartholomew and Associates,

1966). At a neighborhood level on the north side, single-family housing was allowed to persist south of the industrial district and multifamily housing was emphasized for Washington-Coles. Parks were expanded or added for every neighborhood in the city.

The housing element of the plan shifted the burden of improving slum-like conditions to communities, recommending they establish neighborhood improvement associations to support redevelopment. Washington-Coles had been an “obsolete area requiring redevelopment” since before 1950 while Hillcrest had only become blighted by 1960 (Harland Bartholomew and Associates, 1966). Urban renewal principles of displacement and redevelopment were still largely recommendations in the new comprehensive plan, but neighborhood associations were emphasized as vehicles for the protection of existing neighborhoods from further decline in property values. Code enforcement was suggested for blighted areas such as Hillcrest. There was also considerable emphasis on community involvement through informing and involving neighborhoods in the process. However, the consultants note that recommendations in the plan are only the beginning of the program and will not have a major impact on slum areas.

The 1980 comprehensive plan was the first to explicitly require buffers and screening when industrial and commercial facilities were near residential areas. When areas were converted from residential to industrial activity (as was often the case after a buyout), the plan recommended “actions” be taken to protect the remaining residents on the north side, but no specific actions were identified. The plan noted that developing industrial areas were not suitable for long-term housing, thus making a judgement that housing should eventually be removed from the north side. However, there was no mention of how this would be accomplished. The plan acknowledged that the cumulative nature of zoning classifications in Corpus Christi was not preventing low-density residential and intensive commercial/industrial uses from being placed near each other. Therefore, the plan

called for a phasing out of the cumulative zoning ordinance and its replacement with more exclusive zoning classifications.

In 1989, the Westside Area Development Plan grouped Hillcrest and Washington-Coles with the industrial westside rather than the neighboring central business district. The plan called for buffers between industrial land use and residential land use, as well as screening, landscaping, and industrial property layout strategies to reduce adverse impacts for residential areas. The plan also identified Hillcrest and Washington-Coles as a priority area for a Targeted Code Enforcement Program to be initiated by a citizen/staff task force that would identify structures in need of code enforcement, as well as non-conforming uses and areas needing street clean-up (City of Corpus Christi, 1989).

In 1998, city planners proposed the first redevelopment plan conducted by the City's planners to provide concrete recommendations in a spatial format to address industrial impacts on the community. However, it was not adopted by City Council. First, the plan recommended three transitional buffer zones, shown in Figure 17 as A, B, and C. Areas A and C were to be used for commercial use, while Area B was offered by industrial firms as an area for outdoor storage. Other recommendations included rezoning parcels immediately north of Hillcrest from heavy industrial to light industrial (the current use at that time). Apartments north of Hillcrest were to be rezoned light industrial to remove residents from this transitional area. The plan also offered visual screening around most of the perimeter of Hillcrest. Rezones along Port Avenue were also recommended, changing zoning designations from heavy industrial to business and light industrial uses. Although this plan was not adopted, by 2000 some of these changes occurred, including the two-block wide buffer proposed by Koch Industries. However, the recommended rezonings were never implemented.

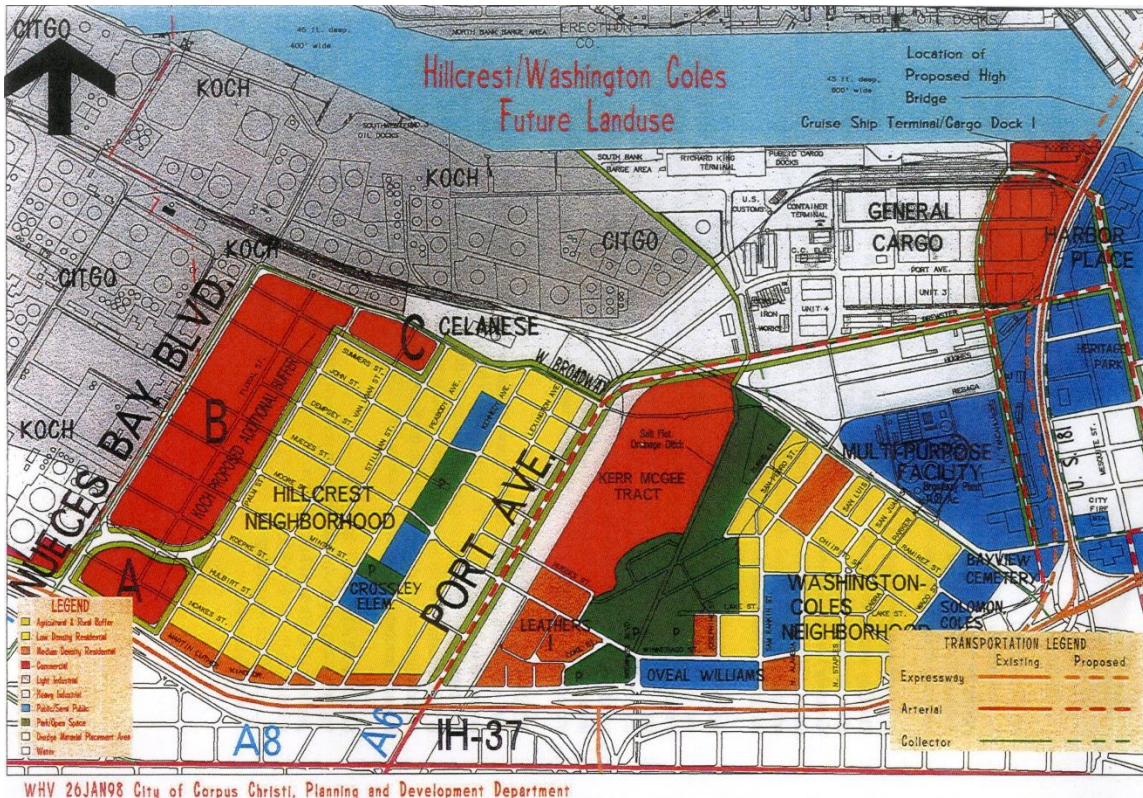


Figure 17. Future land use map (City of Corpus Christi, 1998).

For Washington-Coles, the redevelopment plan recommended a massive park along the old salt lake tract that has only been suitable for drainage. The plan noted that if the tank farm (Kerr McGee tract) could have its groundwater contamination remediated, portions of the site could be used for open space and business incubators (City of Corpus Christi, 1998). East of the neighborhood, the City’s wastewater treatment plant was scheduled for closure by 2004. The planners recommended a multi-purpose facility or outdoor recreation center for the site to help connect the neighborhoods to the successful recreation and tourism sites downtown, such as Heritage Park and festival areas. Further tourism and visitor uses were recommended between downtown and Washington-Coles.

In 2003, city planners worked with business, religious and civic leaders on the north side to create another redevelopment plan that would rezone residential property to light industrial, by creating a research and technology park (Ross, 2003). Washington-Coles would be rezoned for neighborhood business, allowing a mix of commercial uses (Fig. 18).

Since the land was valued higher as a commercial or industrial use, rezoning residential areas could raise property values for residents and provide them with higher buyout offers. Figure 18 shows the future land use map from the plan, the dashed black lines indicating proposed routes for the new Harbor Bridge. The plan was never implemented, possibly due to a glaring omission in the city’s participatory process. No residents physically living in the neighborhood were engaged in the plan. Planners believed the residents were only going to be satisfied if a buyout was proposed (Ross, 2003). Moreover, the plan lacked the political support and leadership needed to be implemented.

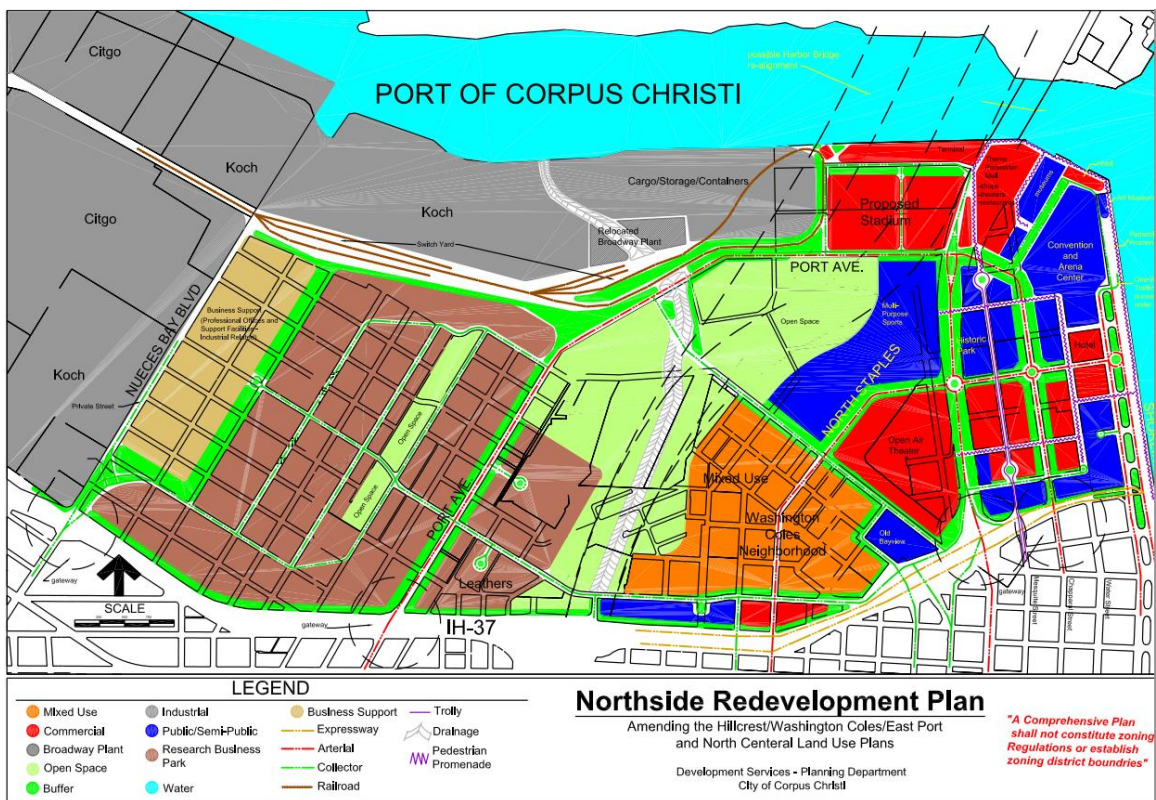


Figure 18. Unadopted future land use map, 2003.

In 2008, the city hired a consultant to do yet another redevelopment plan for the north side neighborhoods. The plan was not adopted and instead criticized because it relied heavily on private investment to spur growth (Wilson, 2008). However, the plan did have some interesting elements. It recommended increasing the buffer zone between the

refineries and Hillcrest, as well as consolidating and relocating certain occupied homes to a core area within the neighborhood. Additional homes could be built with the help of Habitat for Humanity. The plan also recommended a different route for the Harbor Bridge, putting the highway between Hillcrest and the industrial sites to the west, which would provide for an addition barrier between the neighborhood and industry.

An adopted future land use map created in 2010 show little impact of city planning efforts in the north side neighborhoods. Some aspects in Figure 19, eliminate existing buffers created by industry, such as the two-blocks of vacant land that Koch bought in 2000. Current zoning for the buffer is still for single family and multi-family uses.

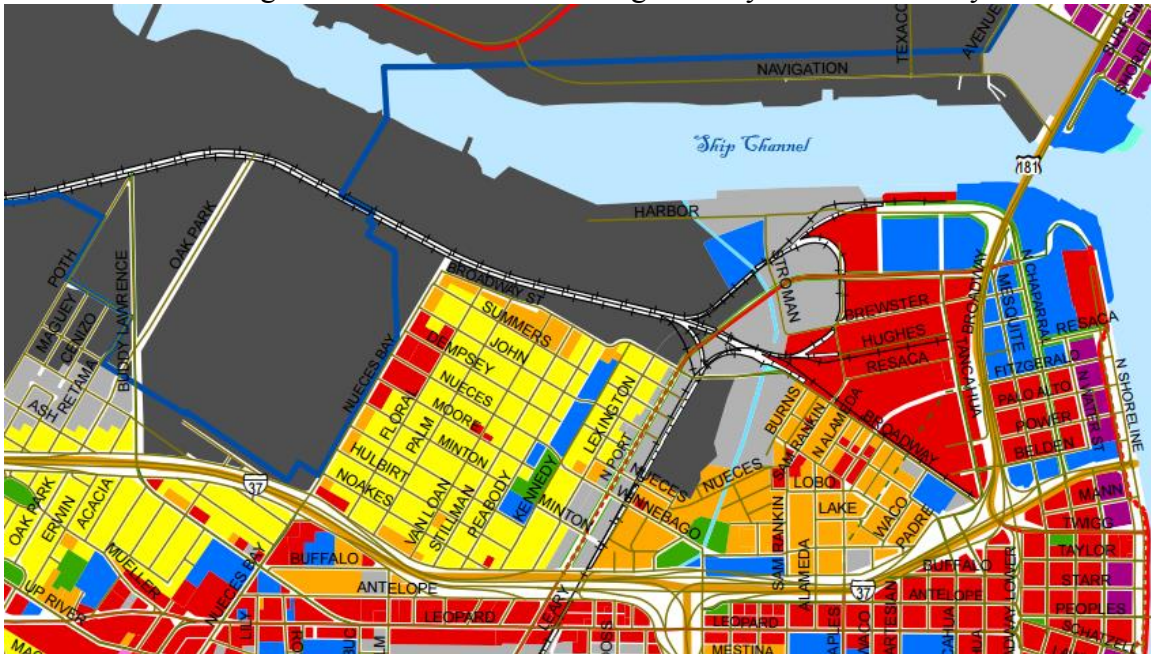


Figure 19. Adopted future Land Use Map (City of Corpus Christi, 2010).

Another Central Business District Area Plan was created and adopted in 2013, this time including Hillcrest and Washington-Coles as part of the CBD planning area, which seems to illustrate a new vision for these neighborhoods when compared to previous plans. The future land use map primarily emphasized mixed use and higher density residential. In



Washington-Coles, the plan called for non-residential mixed use and office in parcels closer to downtown. A large park was called for within the neighborhood as well. In Hillcrest, medium-density residential was added, as well as several parcels of non-residential mixed use and office space (Fig. 20). Additional parks are recommended in the northwest corner of the neighborhood. However, the existing open space buffers would be commercial, light industrial, and office uses. The plan also allows one large parcel north of Hillcrest to remain heavy industrial (dark gray).

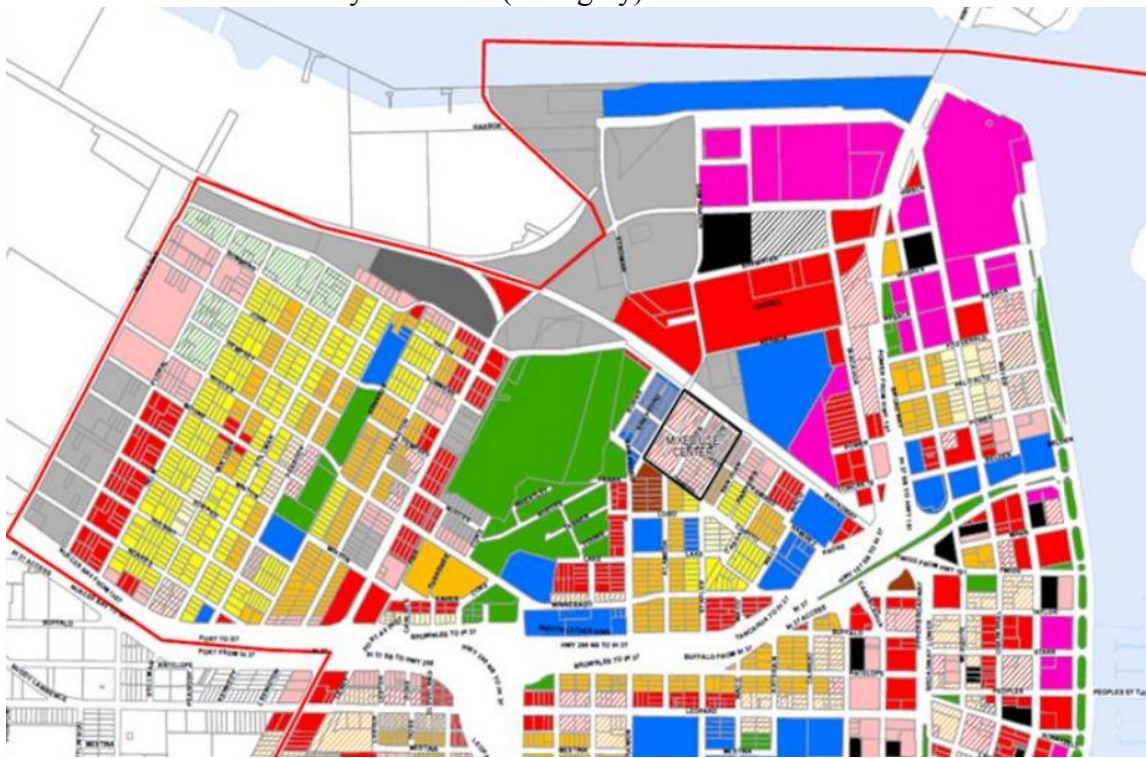


Figure 20. Future land use in the Central Business District (City of Corpus Christi, 2013).

The City of Corpus Christi transitioned to a unified development code in 2011, replacing all previous zoning ordinances with one code (City of Corpus Christi, 2011). Corpus Christi's zoning classifications today are more specific and still provide for a variety of uses and building types. However, little has changed when applied to the north

side neighborhoods. In Hillcrest, the west buffer created by industry is zoned single family, general commercial (limited), and office (Fig. 21). Parcels immediately to the north of the neighborhood are still zoned heavy industrial, as are parcels on the east side of Port Avenue and the Kerr McGee tract. The vast majority of Washington-Coles is zoned for various types of multifamily residential with some individual parcels designated neighborhood commercial. Light industrial still exists in both of these communities, but it is relegated to major arterials around the community or along Port Avenue.

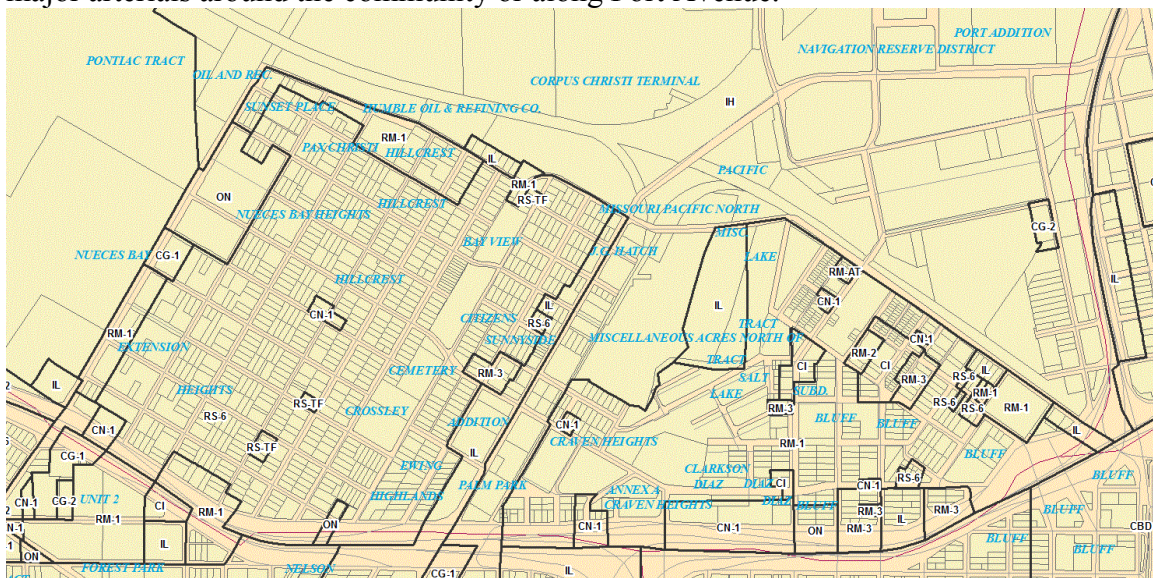


Figure 21. Current zoning (City of Corpus Christi, 2014).

Maintaining a stable planning department has been a challenge for the City and has had implications for north side communities throughout history. In 1945, the planning engineer and planning department assistants quit when the mayor unexpectedly (and illegally) replaced all members of the city’s planning commission (Bynum, 1945). The department left a lot of work behind, including a plan to address the problem of manufacturing and industrial use in the “negro residential sections, which are converging upon each other to the saturation point.” It took over a year to reinstate the planning

department (Caller Times, 1945). In the recent past, history seems to have repeated itself. In 2013, City Manager Ron Olson was concerned with completing a new comprehensive plan as fast as possible. Olson contracted a consulting firm to lead the planning process and, in turn, laid off nine planners. The planning department was absorbed by other municipal departments (Dietrichson, 2013). Planning in Corpus Christi continues to be absent at times when some communities need it the most.

## **Chapter 5: Conclusion**

City planning and zoning actions have had some role in the minority neighborhood's proximity to environmental hazards and the current situation of environmental injustice. Early zoning encouraged industrial growth on the north side, particularly in Washington-Coles, which contained established Mexican-American and African American neighborhoods before the industrial boom. During Jim Crow era housing segregation, African Americans were only allowed to live in undesirable areas, such as near industrial uses and the airport. The City displaced blocks of residents to make way for the Interstate highway in the 1950s and 60s. Comprehensive plans up until the 1980s implied that the north side was more suitable for industrial uses than existing residential uses. Industrial growth followed and expanded into the city from the industrial district, further encroaching on residential homes.

As industrial growth crept into the neighborhoods, the city took neither a proactive nor reactive zoning approach to relocate or restrict housing growth on the north side and protect minority neighborhood home values, as well as general public health and safety. No buffer zones were attempted on behalf of the city even though they were recommended in adopted general plans and unapproved area plans. Buffers that have been established in the north side were created through residential buyouts by industrial facilities. Industrial districts agreements have prevented the city from annexing the industrial facilities, making the city incapable of any zoning and planning interventions around the neighborhoods. The neighborhoods have been left by the city to determine their own fate, as they have been for decades, since plans to fully revitalize or relocate the neighborhoods have never received the political support needed to reach implementation.

## **RECOMMENDATIONS**

Despite the bleak past and present of the north side, there are still some opportunities for change. The City of Corpus Christi could adopt progressive policies to reduce the burden on residential communities near the industrial district. As mentioned in the literature review, cumulative impact screening could be used to shift the burden of demonstrating cumulative effects of pollution from the communities to local government or industry by requiring new industrial expansion or relocation to demonstrate they will not cause an adverse cumulative impact to receive a permit (Morello-Frosch et al., 2011).

The Industrial District Agreement is another opportunity for the community. Since Texas cities do not have zoning power in their ETJs, the agreement could be used to negotiate with industries in the district to devote some of the funds they pay to the city instead to adjacent residential communities to either revitalize the area or move out. The City should work with the residents of the north side to decide how to spend the funds. Examples might include renovations, buyouts, economic development, or additional screening and landscaping for the community. Although the agreement has already been renewed this year, the fund may not explicitly need to be addressed in the industrial district agreement. The City could instead channel a portion of the taxes from the industrial district to fund revitalization in neighboring communities.

Perhaps a more idealistic recommendation is to develop and adopt a comprehensive community plan to address environmental injustice, public health problems, crime, and blight in the north side. With TxDOT's recent decision to realign the Harbor Bridge through Washington-Coles, the City is already thinking of ways to redevelop and reconnect the eastern portion of the neighborhood to downtown. Now is an ideal time to create a plan informed by the history of the north side and ensure that any redevelopment will benefit

those who live there. Reviewing previous plans illustrated several lessons learned by city planners and city officials regarding planmaking:

- Community relocation and revitalization. For public health reasons, Hillcrest should not remain where it is. It will also only become more isolated after the new Harbor Bridge is built. Since the city will be reinvesting in the portion of Washington-Coles nearest to downtown (east of the proposed bridge), existing north side residents should be relocated there in a planned community.
- The planning process must provide deep and meaningful participation for residents who will be affected by the plan.
- There must also be a willingness on behalf of decision makers to adopt a plan backed by residents. With these lessons in mind, a community plan could be created to direct investment to the community in an equitable way.

A community plan should include several components:

- Historic preservation and designation. The African American population is shrinking in many Texas cities, but that does not mean their history should be forgotten and destroyed. More needs to be done to preserve the memories of long-time residents and the work that leaders of these communities have done to preserve what is left of these communities.
- Mixed use and neighborhood commercial, similar to what existed in Washington-Coles' heyday. A walkable, vibrant historic community near downtown would be an attraction in and of itself.
- Mixed-income and subsidized affordable housing. Future development should ensure the existing community will have the ability to stay if they wish to retain the character and cultural identity of the community. Nonprofit developers could aid in

this endeavor. Low-income housing tax credits projects could also be considered if the area is considered a community revitalization area.

- Community development to provide youth development activities, crime watch, and neighborhood beautification developed by the community and supported in part by the city. The City tried to do this in the 1990s by suggesting extensive rezoning, but the community engagement process was severely lacking and there was still a lack of political will to implement the plan.

There is still a question of who should initiate the plan. Industry is unlikely to have a reason to initiate a community plan, as they have said they do not have interests in expanding or buying out any more properties (Wilson, 2008). The city could initiate the planning process but the process should resemble a partnership with the community. The community, with the most to lose, is likely the best to initiate this planning process. North side communities can increase their capacity by starting a non-profit to gain access to grants and donations. Capacity could also be increased by partnering with community organizers, a planning consulting firm and/or the city planning department to create a plan of action for the community. No matter who initiates the plan, city decision makers should be incorporated into the planning process to help ensure the plan will not be undermined in the future and will be an adopted plan recognized by City Council.

North side community leaders and organizations should look for inspiration in communities who have organized for better neighborhood conditions after being marginalized for decades:

- Colony Park is a neighborhood in Austin suffering from concentrated poverty, failing schools, and a lack of jobs and neighborhood amenities such as grocery stores, parks and public transportation (Beeler, Kim & Peris, 2014). When the City of Austin received a HUD Sustainable Communities planning grant, the community

partnered with the city and urban design firm Farr Associates to create a master plan (City of Austin, 2013). The plan was adopted in late 2014 by City Council. Since then, Colony Park has started a community development corporation to continue to give an organized voice to their community. They also worked with the City to create an implementation plan to ensure future community input in the implementation of the master plan (City of Austin, 2014).

- The Dudley Street Neighborhood Initiative grew out of the Roxbury/North Dorchester neighborhoods in Boston to address arson, dumping, and disinvestment in their community (DSNI, n.d.). The community organized around persistent issues in the community, at first focusing on small, winnable goals such as cleaning up vacant lots and working with the city to ensure lots stay clean. DSNI has since developed affordable housing on vacant lots in their community and created dozens of partnerships with other nonprofits, businesses, religious organizations, and government agencies to revitalize their community and retain its character (DSNI, n.d.).

## **FUTURE RESEARCH**

Other researchers who have conducted similar historical analyses of city documents and their contribution to environmental inequity, such as Boone and Modarres (1999), recognize that industrial siting has more components than the city's zoning and land use policies. In addition to land use and zoning, researchers recommend a thorough examination of historical economic development incentives and activities. Future research could document economic development activities undertaken by the City and Chamber of Commerce to better understand how the city may have had marketed and incentivized industrial uses in and near minority communities.



Future reports could also focus on a participatory strategy for the north side neighborhoods. A researcher could design an effective engagement strategy to create a plan for the north side and build relationships between the community and the city in the process. Mediation between the communities, planners, decision makers, and industrial representatives may also be valuable to reduce tensions and move toward an agreed solution for the north side.

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