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Hattiesburg's Unforeseen Legacies: Industrial Remnants and Their Influence on Historic Districts

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Hattiesburg's Unforeseen Legacies: Industrial Remnants and Their Influence on Historic Districts

by

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Abstract

Contaminated property is a significant limiting factor to urban development, specifically in the old economic centers of cities. This study is a spatial analysis of contaminated property in the Downtown district of Hattiesburg, Mississippi. Historic archives are used to create a land-use history of various sites that are presented as case studies in the thesis. These sites provide a unique historical perspective of Hattiesburg's industrial development while also illustrating the general trends of brownfields in the city. Using a combination of archival information and publicly available spatial data, a series of maps are created that display the source of financial support, contaminants, and assessment status of focus sites. By reconstructing the relationship between past and present land usage, this thesis contributes to a greater understanding of brownfields in Hattiesburg, thereby providing a tool for rehabilitation and redevelopment.

Key words: Brownfields, Historic Downtown Hattiesburg, Land Use, Urban Blight

Dedication

To my mom.

You have always been the one who sees what I can accomplish before I believe I can.

I love you to the moon and back. Oh, and you probably didn't read to me enough.

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Chapter 1

Introduction

Cities are unique in time, place, and culture. We tour relict cities of once-great empires, which are themselves built in and around the ruins of even earlier societies. Humans display power and might through architectural feats and grand productions. Throughout history, cities have been hubs for economic, political, and social activity, as well as symbols of progress and achievement across the globe.

The Industrial Revolution transformed Western society and gave rise to our contemporary global economic system. It shifted the use, layout, and purpose of cities in an unprecedented manner. In the late 19th century, factories with steam powered engines and new manufacturing techniques located themselves near cities for easy access to employees and transportation infrastructure. This trend continued into the 20th century when industry became a highly sought-after boon to communities. Large industries provided employment, an economic catalyst, and, if successful, positive public sentiment towards community leaders who assisted in attracting industries to their cities. Industry was fueled by increased use of automobiles and growing consumerism. These changes brought unprecedented change to urban land use and to cities across Europe and the United States. The benefits of industrial growth and urbanization came with a basket full of negative impacts. Industrial activities involved close contact with poorly understood chemicals, hazardous byproducts, waste water, and fumes. The dangers of such substances were not widely known to most people for the first six decades of the 20th century. With little to no regulation on waste and chemical disposal, many industries released byproducts, polluted water, and untreated chemicals into the surrounding

watersheds and soils. This legacy of industrial pollution, in many cases, persists today. It is likely that every city in the United States whose history dates back to the Industrial Age has vacant lots that once held factories, warehouses, and or other industrial facilities that remain even today as blighted land that poses a potential threat to human health if redeveloped for other uses.

As cities expand to accommodate growing populations and corollary economic demands (e.g. retail, restaurants, entertainment, and finance), many former business districts of cities are left decrepit and barren, spattered with abandoned buildings and vacant lots. In spite of the constant dynamism and reshaping of urban landscapes, most old cities in the United States carry a legacy of former industries that impact contemporary urban development. Through a combination of historic industrial practices and minimal environmental regulation, we find an industrial history told on the landscape of historic districts in the form of brownfields.

Brownfields are defined by the U.S. Environmental Protection Agency (EPA) as properties in which use may be hindered or "complicated by the presence or the potential presence of known contaminants" (EPA 2016). Brownfields are a recent phenomenon of the past century and a half and are solely *created* from human activity (Rafson 1999). Some researchers define brownfields based solely on land usage, while some definitions, including the accepted EPA definition, require the presence (or potential presence) of a contaminant (Hayek et al. 2010). Human perception of contamination, however, is the true limiting factor for the renewed development of brownfield sites. If a site is perceived as contaminated, whether through prior activity or physical appearance, the retail value of the site and the potential for development generally diminishes so much as to be

unprofitable for real estate development (Hollander, et al. 2010). The EPA and other federal agencies currently offer a multitude of competitive grants and loan programs to assist and coordinate site clean-up and redevelopment efforts (EPA 2017; Dennison 1998). The EPA Brownfield Program has been responsible for remediating over 60,000 acres of contaminated land to usable property, as seen in Table 1.1 (EPA 2017). Many states offer voluntary clean-up programs that provide financial and liability incentives to owners to remediate property that did not experience hazardous waste or groundwater contamination (Dennison 1998). The Mississippi Brownfields Program was created by the state legislature in 1998 and gives the Mississippi Department of Environmental Quality authority to coordinate assessments and redevelopment of brownfields throughout the state (MS Legislature 1998, EPA 2015). Responsible redevelopment, or the removal of false perceptions, of these properties presents an opportunity to improve and combat blighted areas and re-establish productive land use.

Table 1.1: Summary of National Brownfields Program Accomplishment (January 1, 2017)

Performance Measure	FY2017 Targets	FY2017 Accomplishments	Cumulative Program Accomplishments
Properties Assessed	1,400	588	25,296
Jobs Leveraged	7,000	1,461	117,525
Dollars Leveraged	$1.1 BN	$561 MN	$22.612 BN
Acres Made Ready for Anticipated Reuse	5,500	2,112.84	63,900

Source: EPA, "Brownfields Program Accomplishments and Benefits" 2017

This thesis identifies and evaluates urban properties in the city of Hattiesburg, Mississippi that have been assessed for chemical contamination. Using environmental assessment reports and historical records, the current contamination status can be

considered alongside land use over time. This will be presented through the spatial representation, spatial analysis, and historical narrative of selected sites. A series of maps will display assessments performed at sites, the type of contamination, ownership, and source funding for assessment activities. Understanding land use and contamination, along with historical activity, can assist with future redevelopment efforts, funding, and urban planning.

The purpose of this thesis is to conduct a geographical analysis of brownfield sites in Hattiesburg in order to assist citizens and law makers in efforts to clean-up hazards, preserve our historical districts, and improve the city. Many brownfield properties in Hattiesburg remain vacant or under-used today. This poses a significant impediment to the revitalization and preservation efforts in the Downtown district as an historical asset to the city and the state. Understanding the location and industrial history of these former sites in relation to the contemporary landscape can assist the community and its residents in understanding what policies, educational outreach programs, or incentives would be beneficial for revitalization and future development in Hattiesburg.

Chapter 2

Literature Review

The body of work that focuses on brownfields, industrial contamination, and remediation is diverse, though not particularly extensive. In terms of reference material, much of the instruction, guidance, and opinions about brownfields in the United States can be found in policy, legislative, or regulatory publications. This literature review will consider several bodies of research. It will focus on the impacts, identification, and remediation of brown fields, as well as the role of brownfields in reinforcing urban blight and hampering historic preservation. The relationship between past land use is most informative when we consider it as a part of the historical narrative of a place, rather than land use as the sole negative that resulted in contamination. This is the importance of historic preservation in the concept of this research: the idea of preserving the causes of contamination in the form of knowledge and history in order to expand our understanding of the problem. By understanding the problem, we are better equipped to find a solution through remediation measures, policy, and future actions.

Impacts, Identification, and Remediation

One popular topic in current research on brownfields considers the effects of contaminated sites on surrounding properties in fiscal terms. Assessing the economics of brownfields will help us better understand the nature of fiscal incentives. One study concluded that publicly assisted brownfield redevelopment was correlated with a small increase in property values, but was not believed to be a sole nor a major contributor to the increase (DeSousa 2009). By analyzing brownfield projects, site attributes, and surrounding real estate, researchers determined that positive spillover effects from

brownfield remediation was not limited to large projects but was seen in multiple types of projects with various funding (DeSousa 2009). A study from the University of Wisconsin verified that property values were impacted negatively by proximity to contaminated property. This study also confirmed that the inverse is true and surrounding property values were positively impacted by the presence of a green field, a site which has no development history or serves as a natural area (e.g. parks, green belts, and recreational areas) (Kaufman 2006). Both DeSousa and Kaufman utilized models to estimate economic value in portions of their research. An increase in property values can be a clear incentive for the redevelopment of brownfield properties, especially for local municipal governments and citizens. Increasing property values brings benefits two-fold: it is a potential real estate catalyst and it leads to increased property tax revenues.

In a study on property sale prices published in the *Journal of Real Estate Research*, Jackson concluded that contaminated industrial properties sold at 30% less than the price of similar, uncontaminated properties (Jackson 2002). Even more notably, Jackson used sales data over a four-year time span to demonstrate that remediated property sold at the same price levels post-remediation as uncontaminated property of equal value and character (Jackson 2002). It is important to recognize the implications of these findings on urban real estate markets. If clean-up of a property can increase the sale price to pre-contamination levels, there is a potential market incentive towards clean-up and remediation of contaminated property.

A study conducted in Baltimore using environmental and real estate data found that contaminated sites sold at significant discounts on the market, including sites suspected of contamination and sites adjacent to known contaminated sites (Howland

2004). This study also identified other causes for depressed sale prices, many related to outdated infrastructure such as truck access, telecommunications, and water and sewer access (Howland 2004). In doing so, Howland identified the government's opportunity and responsibility to improve services near heavily depressed sites with investment potential, through public administration or policy measures.

Alternative methods of identification and classification of brownfields have been explored in order to mitigate the expensive assessment process. One project utilized a geographic information system (GIS) to construct a database of past, present, and potential sites (Hayek, et al. 2010). The database was constructed using fire insurance plans that detailed land use, hazards, and incidents. The database was augmented by various historical documents from city directories, maps, and plans. This method of classification captures the extent of brownfields in a geographic area and allows for comprehensive analysis. However, this method is dependent on historical records and documentation, limited by available records (Hayek, et al. 2010). Another study utilized an economic base analysis to identify the presence and size of brownfields in major urban centers. This study used U.S. Department of Commerce data on employment, housing, and acreage to identify brownfield properties through the decline in economic activity, specifically firms opening and closing through time. The purpose was to identify sites that were not publicly identified as brownfields. The study identified 93,000 acres of industrial brownfields in 31 cities. These sites were identified based on shrinkage of commercial and manufacturing markets surrounding the site with the understanding that a shrinking market leaves behind vacant property. The study was inspired by the lack of a comprehensive database of brownfield sites (Simons 1998). It should also be noted that

such databases as “Cleanups in My Community” attempts to address Simons call for a comprehensive and public list of contaminated properties.

Brownfields, Urban Blight, and Historic Preservation

The second body of research relevant to this project focuses on urban blight – its origins and its impacts. In an article entitled “The Concept and Causes of Urban Blight,” G. E. Breger explains urban blight and its causes. This article, published in *Land Economics* in 1967, may be dated but offers a through explanation of urban blight that we have seen come to fruition over the last half century. Breger argues that the term “urban blight” expanded from referencing slums to include a variety of unpopular property and features disliked in city landscapes. Blight consists of three elements – non-acceptance, depreciation, and real property. From these elements, Breger offers a definition: “Urban blight designates a critical stage in the functional or social depreciation of real property beyond which its existing condition or use is unacceptable to the community” (Breger 1967). More recently, Shlay and Whitman present the idea that blight reflects larger societal obstacles and therefore, acts as a subjective representation of neighborhood decline (Shlay and Whitman 2006).

Breger argues that depreciation, and thus blight, are “diseconomies of urbanization” (374). Breger identifies the causes of blight in three themes: change in land use patterns and technology, rising standard of living, and the repetitive overuse of property (376). These can be starting points for understanding land-use patterns in changing cities. One article in the *International Journal of Sustainable Built Environment* notes that city planners have had a heavy hand in organizing, addressing, and studying

urban blight but that the rate of success of such plans is heavily dependent on citizen input and involvement (Hosseini, et al. 2017).

"Historic preservation engages history through the palpable character of place" (Bluestone 2011, p. 18). By considering property as more than its present status (i.e. contaminated), we can view a larger narrative of the activity, people, and society that lead to what the site we interact with today. This stands equally for individual sites as it does for an entire city block. As Andrew Hurley points out with regard to urban preservation, history can serve as a uniting force for communities. A district becomes part of a shared story for its citizens, lending ownership and investment to a geographic place. Hurley points out that incorporating the history of a place into the future development allows communities to develop their city together with a shared purpose, armed with the stories and activities of previous generations (Hurley 2010, p. x, 53). One purpose of preservation is explained as being a ground for representing and negotiating past use with that of the future (Bluestone 2011, p. 17). In a case study of preservation at two Superfund sites, Bluestone points out the opportunity for reflection and stewardship that is present in preserving the history of contaminated property. He argues that citizens can learn more about their history and the impact of their actions by reflecting on the causes of contamination, rather than forgetting them through remediation that erase all traces. Using the example of the former Fresno Sanitary Landfill in Fresno, California, Bluestone points out that the site was the first to introduce disposal technique that would dramatically change municipal waste disposal and has been listed as a National Historic Landmark, but, yet, lacks on-site information regarding the importance of the area (now capped and used for recreation) (2011, p. 256-63). We see the importance of using

contaminated property, especially large sites dedicated to specific activities, to reflect on our history, accomplishments, and byproducts (the negative and the positive).

Chapter 3

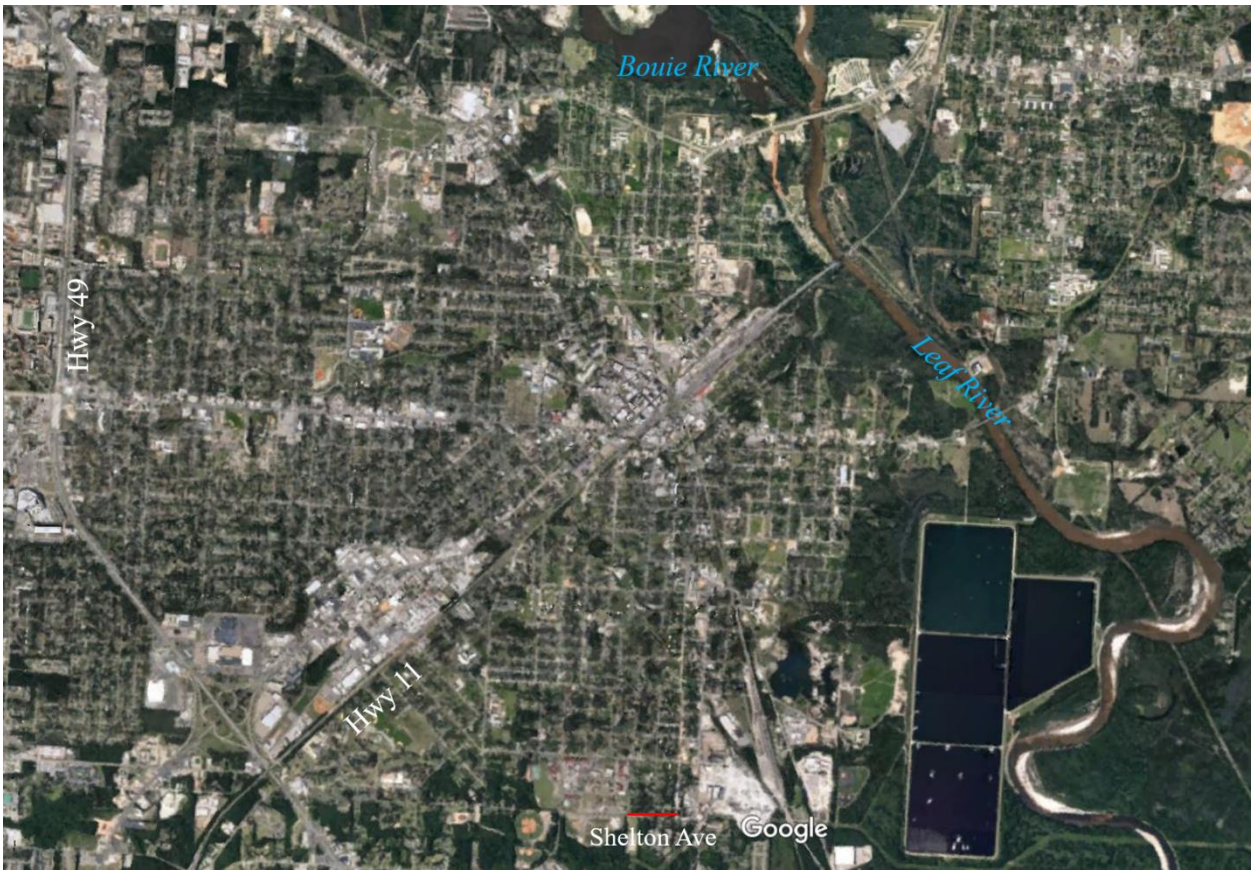
Methodology

Determining Research Area

Before considering any brownfield site, it is necessary to define the geographical boundaries and spatial data used in this project. Sanborn Maps accessed through the University of Southern Mississippi Libraries provided a thorough historical record of Hattiesburg expansion for this portion of the study. The Leaf River provides a natural border for central Hattiesburg along its eastern limit. Similarly, Highway 49 provides a clear western boundary that is much more pronounced than other north-south arteries within the city. The area alongside Highway 49 and encompassing the campus of the University of Southern Mississippi has become known as Midtown and provides a logical border for this project. The northern boundary is easily defined by the Bouie River that flows into the Leaf River just northwest of Hattiesburg proper. The southern boundary of the study area was the most difficult to assign due to lack of clear historical documentation. Drawing from Sanborn maps throughout the 1920s and 1930s, I decided to assign the southernmost boundary to be that represented in the 1931 Sanborn Map (1931, Sheet 2) at Shelton Avenue, just south of William Carey University.

The sample population of this project consists of any sites located east to west between the Leaf River and Highway 49, and north to south, between the Bouie River and Shelton Avenue. This includes the entire commercial district of Downtown Hattiesburg. The research area is displayed in Figure 3.1.

Figure 3.1: Map of Research Area



Source: Google Maps. Labels added by author.

Identifying Sites

The next stage in the research was to identify sites to consider for more in-depth analysis as part of this project. This was done using two databases: Environmental Protection Agency's (EPA) Cleanups in My Community and Mississippi Department of Environmental Quality (MDEQ) Brownfield Inventory (EPA 2017; MDEQ 2017). Both databases are publicly accessible on the web.

The Environmental Protection Agency's Cleanups in My Community (CIMC) is a public service that provides an interactive system that includes data on multiple types of cleanups and brownfield sites across the nation. The service includes a mapping

component, as well as information regarding status, assessment, funding, and rehabilitation for each site. However, the database is limited by what information is actually reported. The database only consists of sites that are legally mandated to be reported to the EPA or are reported from EPA-managed grant programs. At a minimum, each site listing includes the reported geographic location, reported status (assessment, clean-up determined, rehabilitated), and funding (grant amount, state funding, or leveraged funds). Every site can be linked by location to 2010 census data. Most of the sites assessed in the research area received funding under two brownfield projects in the city of Hattiesburg in 2008 and 2010. Complete records on these projects were graciously provided by Jay Estes, AICP at Allen Engineering and Science for my reference in this study. All reference to assessments, reports, and maps from these projects is from their work and documentation.

To ensure that site assessments spearheaded by the Mississippi Department of Environmental Quality were not missed in this study, I cross-referenced the CIMC with the Mississippi Department of Environmental Quality's Brownfield Inventory List. This database is public domain and downloadable from the MDEQ's website. This database consists of site names, location in latitude and longitude, city and county, and, as applicable and available, EPA site identification, managing parties, status, and type of contamination. However, it seems to have not been updated after about 2010 and the file itself is undated. I used this document to match and verify site information from the EPA database, as needed.

For a site to be considered in this study, I used several criteria to limit the sites pulled from the databases discussed above. First, the site must fall within the study-area

boundaries. Second, the site must be deemed by a qualified party as a current or former brownfield or a site in need of assessment for contamination (i.e. regulatory agency). It is important to bear in mind that a brownfield is any site that has the potential for contamination and therefore should be assessed. Many sites in the Hattiesburg area that received grant funded assessments did not reveal any contamination. These sites are considered as assessed with no identified contamination, but were nevertheless included in this project. This will be discussed further in the results chapter. Finally, the related reports on the site had to include, at a minimum, a site location. Though few in number, older records were merely reported as project names. This name would result in a dead-end search with no other associated records or documentation. These isolated projects were not included, as their location in the research area could not be verified.

In summary, to be considered a research site, the following criteria had to be met:

1. The site must be in the research area outlined in Figure 3.1.
2. The site must be deemed as a potentially contaminated property by an authoritative agency (EPA and/or MDEQ).
3. The project records must have, at a minimum, an associated location.

Archive Review

Historical archives, public records, and directories were reviewed for any material related to the sites. This material provides background on contamination, activities, and narrative description related to the focus sites. Notable archives reviewed were the Polk City directories housed at the Hattiesburg Public Library, Hattiesburg Chamber of Commerce records and Hattiesburg Municipal records housed in McCain Library and Archives at The University of Southern Mississippi.

Addresses, dates, company names, and owner names were used as points of reference to match historical record material to database listings. The archives were used in the attempt to discover more information about individual sites using what information provided from the above databases.

Spatial Representation of Hattiesburg Brownfields

The Forrest County tax assessor's office (GIS formatted by TriState Consulting) was used as base map data. Using the Property Index Number (PPIN) number for each site retrieved from the two databases, the sites were identified in ArcMap. After reviewing site assessments, archives, and historical information regarding sites, attributes were linked to the ArcGIS data using the PPIN. These attributes would be used to represent the brownfield situation in Hattiesburg. Using Quantitative Symbology, a spatial representation of the focus sites and various attributes could be created.

A summary of attributes added and identifying variables is listed below.

Table 3.1: Attributes for ArcMap

Project Focus Sites	**Y** --- Yes
	Blank --- Not focus site
Acreage	**Numerical Value**
Phase I Conducted	**Y** --- Yes
Contaminant identified	**Hazardous**
	TPH --- Petroleum
	VOC --- Volatile Organic Compounds
	PCB --- (florescent lightbulbs)
	N/A --- No identified Recognized Environmental Concerns (REC)
Phase II Conducted	**Y** --- Yes
	N --- No
Phase II Recommended	**Y** --- Yes
	N --- No
Ownership	**Private**
	Public

These maps can then be used to conduct further analysis of land use in Hattiesburg. Analysis included percentage of total land that is contaminated, contamination by percentage, and portion assessed with no contamination concerns.

Chapter 4

History of Hattiesburg and Industrial Development

The piney woods region of South Mississippi was home to many hard-working settlers and homesteaders but it did not become a notable economic center until well into the 19th century. Its greatest commodity (timber) was difficult to access and hard to harvest, although this began to change in the final decades of the 19th century.

Prior to rail transit, the sale of timber was small, but lucrative. The earliest reported timber harvesting was limited to small groups of men who would fell trees in the early fall and float the logs to sawmills in Moss Point during the winter (Hoffman 1998 viii). Timbermen used rafts to float Longleaf (also known as Yellow) Pine down the Leaf River as early as 1856 (English 2000 p. 39). Prior to the railways that would quite literally drive South Mississippi into the transportation and industrial age, the riverways crisscrossing the Piney Woods (Leaf River, Pearl River, Pascagoula River, Bouie River, Gordon's Creek, and Black Creek, to name a few) provided a source of transit and revenue. The introduction of the first railway to the Piney Woods in 1880 by William Harris Hardy would be an economic, social, and industrial catalyst but spelled the end of river travel for the region (Watson 1974 p. 8; English p. 45). The birth of the idea for a railway through the Piney Woods came first in 1868 from William Harris Hardy, a lawyer then working in Paulding, Mississippi. He published his idea of a railroad from Meridian to New Orleans in an article run by the *Meridian Mercury*. As he elaborated in his autobiography, Hardy proposed in this article the benefits of such a line. The line,

running to Meridian, would connect to other lines that extended to Chattanooga, Birmingham, and New York. It would offer a profitable trade option for Alabama and Mississippi via rail to New Orleans. And, finally, Hardy recognized the potential of railways to provide a convenient method for moving timber (Hardy 1946, p. 207-8). The idea was quickly undertaken in 1870 by several businessmen located in New Orleans, although they were significantly delayed by the Panic of 1873 (English 2000, p. 49-50).

William Hardy was determined to see the railroad to fruition. In the late 1870s, Hardy relocated the records of the former New Orleans and Northeastern Railroad Company. He led the reorganization of the company and was elected Vice-President. New surveys for the line were started in the spring of 1880 (Hardy p. 211-2). The line would make its first journey from Meridian to New Orleans, across the longest bridge in the world at the time, twenty-one miles across Lake Pontchartrain, in November 1884 with Hardy on board (Hardy p. 214-5). Within the first year of operation, fifty-two saw mills were running alongside the new railroad and two other railroads were quick to follow the New Orleans and Northeastern's lead (p. 216).

A portion of Hardy's responsibilities in the company was selecting and naming sites for stations throughout the survey process. He would put this to good use with the selection of a site along Gordon's Creek, naming it after his wife, Hattie Lott Hardy (English p. 50-1).

As told, Hardy took his lunch along Gordon's Creek on a trip surveying a path from Meridian to New Orleans. This spot is now near present-day downtown Hattiesburg (Watson 1974 p. 8-9). As he recounts it, he sketched a route from the Gulf Coast (eventually Gulfport) through the piney woods, near where he sat, and then north towards

Jackson. He determined, in his lunch ponderings, that one day, "a competent engineer would select the route I had indicated" (Hardy 219-20). It was then that he decided that once this road was built, he would name the junction of the New Orleans and Northeastern line and the Gulf-interior line after his wife (220).

Beyond naming the station at the junction, Hardy purchased 160 surrounding acres and, according to his writings, laid out the plans for the city in 1883 (English p. 56; Hardy p. 220). On March 11, 1884, Hattiesburg, Mississippi was incorporated with 600 residents and fifty-four registered voters (English p. 57; Watson p. 10). Five years later it was upgraded from a town to a city by Governor Anselm J. McLaurin's proclamation (Watson 10). By 1905, it already had four active newspapers (Watson 11).

The growth of the city was driven mainly by the timber industry of the surrounding area. The new rail lines provided for quick and cheap alternatives for reaching timber deep in the piney woods. "Dummy lines," extensions from a rail feeder track, began to sub-divide the landscape of the once impenetrable forest. As technology advanced, the woods became valuable for more than just their lumber. Pine tar and sap became a popular commodity that was manufactured into turpentine and tung oil (Morris 2014, p. 124-5). This resin-based industry would reach into the end of the 20th century for Hattiesburg, with the chemical plant, Hercules Powder Company.

As the timber industry boomed, the city grew along with it. Though much of the development stayed close to the original rail junction, the downtown area soon fed multiple residential areas that housed the growing city's population. Slightly buffeted by the First World War, the timber industry was in a steady decline between 1910 and 1920.

The city saw another economic glimmer during the war from the creation of Camp Shelby in 1917 (Morris, 109-11).

By the 1920s, the timber industry was at its close. Other companies were formed to capitalize on remaining resources left from the clear-cutting. Moving to Hattiesburg in 1922, the Hercules Powder Company would be one of the largest employers in the area for much of the 20th century. Hercules harvested pine resin from pine stumps dotting the area of clear-cut forest. However, the company also had another positive effect. The removal of the large pine stumps provided the ability for some areas, with sandy loam soil, to begin agricultural operations that were before unavailable due to the forest cover (McCarty 1982, p 71). This shift from clear-cutting timber to industry and manufacturing marked the era of industrial development for Hattiesburg.

The economy of Hattiesburg began to diversify from timber during the 20th century. The city government, and eventually the Chamber of Commerce, were the driving force behind providing incentive packages to attract companies through a combination of cheap land, cheap labor, and cheap resources. By 1930, the city boasted three steel production operations and a concrete plant. In 1933, Reliance Manufacturing Company expanded their operations from Indiana to open a clothing manufacturing plant. The company, under the title Big Yank, would eventually expand in the 1960s to Edwards Street (McCarty 1982, p 72). Other companies such as the Vickers Truck Farm and Willmut Gas offered employment and economic security for the city throughout the Depression era. By 1938, the largest of the sawmills closed their doors, marking the true end to the logging era in the Piney Woods (Morris, p 125).

Beginning in 1906 as the Commercial Club of Hattiesburg, the Chamber of Commerce of Hattiesburg was incorporated in 1933. The original charter of 1906 stated the mission of the organization: "to procure by all proper and feasible means, the greatest development of Hattiesburg and this particular section of the State of Mississippi, along commercial manufacturing, agricultural and educational lines…" (Hattiesburg Area Chamber 1906). In my review of the minutes of the organization, I found that the Chamber focused much of its efforts on seeking out interested parties for economic development. From the early 1950s, the Chamber instituted an Industrial Committee that was responsible for contacting desirable companies and proposing incentive packages to various parties in government and administration to attract said companies. The purpose of this committee, as listed in 1957, was "to expand present industrial search and to give more aid and assistance to existing industries in Hattiesburg…" (Hattiesburg Area Chamber 1957). W.T. Russell, chairman of the committee, proposed purchasing land for the use of industrial sites (Hattiesburg Area Chamber 1957). Such purchasing removed the middleman in the acquisition of property for incoming industries, making the land cheaper and more appealing, while expediting the negotiation period. Various reports during the 1950s and 1960s mention members of the Chamber visiting the headquarters of various companies to propose a move to South Mississippi, with varied responses. Some jumped at the cheap alternatives, some feigned temporary interest, while others practically balked at the proposal to expand to the South.

In 1964, the Chamber was involved in the Hattiesburg-Forrest County Joint Committee Report on Industrial Development to improve the area's understanding of industrial appeal and propose improvements. Two main proposals to develop from the

committee were 1) securing land for an Industrial Park and 2) improving the city's sewage processing and disposal system (Hattiesburg-Forrest County Joint Committee 1964). By 1969, the Chamber was considering land options for the eventual construction of an Industrial Park (Hattiesburg Area Chamber 1969).

From a land-use standpoint, the project of an Industrial Park south of the city along Highway 49 moved industry and development from the downtown areas to the outskirts. Ultimately, the city design shifted to clusters of industry and expansion of industry, space, and commercial endeavors. The city continued to expand along Hardy Street, and eventually, Highway 98. The sites discussed here will focus on the former city center prior to expansion, now referred to as Historic Downtown Hattiesburg by the city.

Chapter 5

Discussion

The goal of this thesis is to identify and map brownfields in Hattiesburg, Mississippi and to assess their impact on redevelopment and historic preservation in the downtown district of the city. The first step was to identify sites that were likely the remnants of industrial or hazardous activity. Second, the data on land use and contamination had to be considered. All the sites included in this study were identified and assessed through state and federal funding, which means the data is in the public domain. Finally, historical archives offered extended narrative information regarding sites and activity over the past century. Some sites resulted in more narrative and historical material than others. The historical narrative provides a better understanding of activity at specific sites while also affording us an insight into the industrial development goals of the city over time.

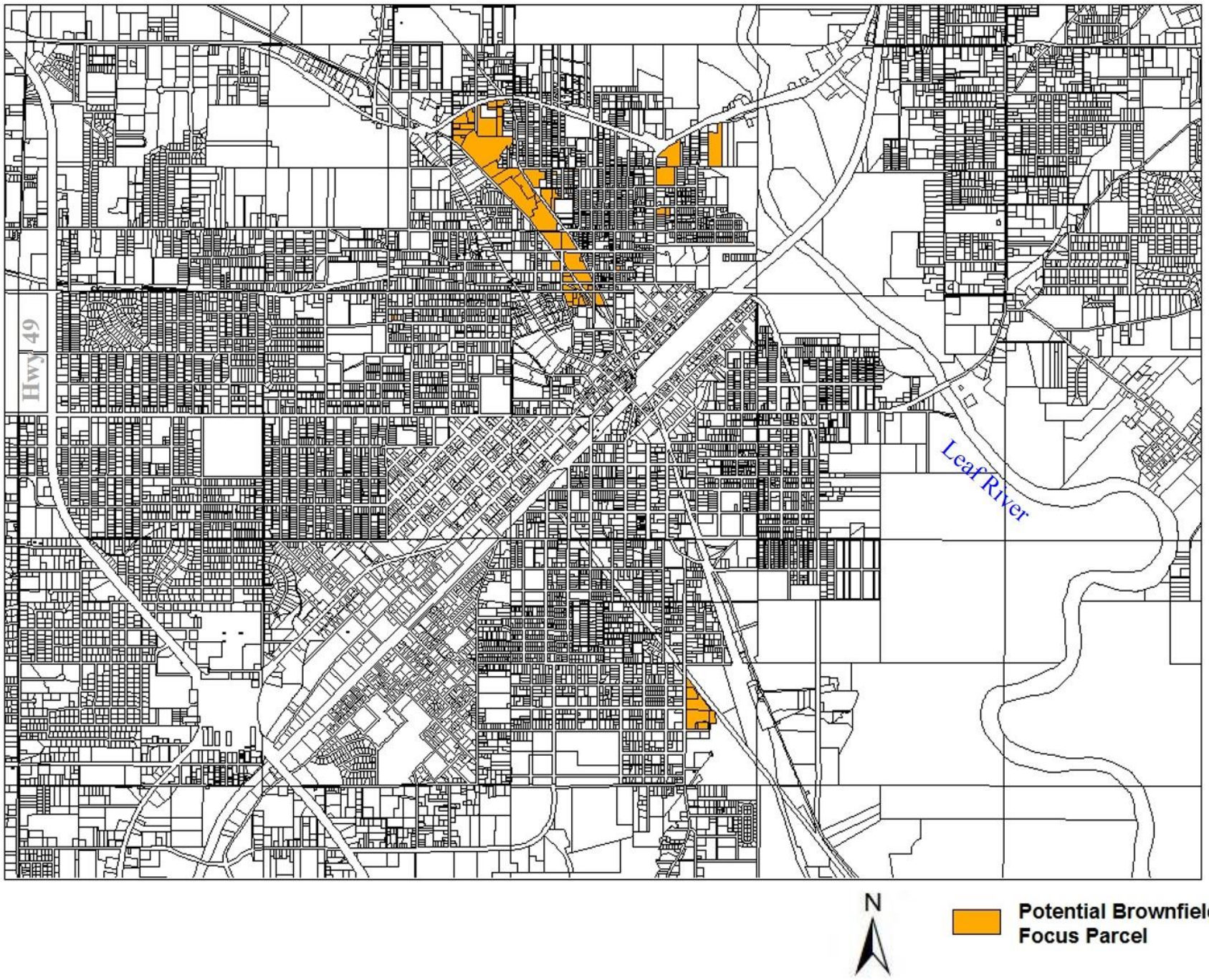
From the EPA's "Cleanups In My Community," 76 sites were identified in the research area. The majority of these (67 sites) came from two grant-funded Brownfield Projects in 2008 and 2010 coordinated by the city. The purpose of these programs was to identify and assess sites for contamination issues. The grant provided for Phase I assessments and some Phase II assessments, as specified in the respective application. Both programs were led by consulting firm, Allen Engineering and Science. The handful of other focus sites were assessed and managed by other sources of funding. In the 2011 project, four sites were a combination of mixed-use properties that were assessed as the same location. For clarity and accuracy, the original maps of sites that will be discussed

are displayed alongside the narrative of that site. Figure 5.1 identifies the other focus sites of this project.

The sites selected for the 2008 project were selected from sites in the Historical Mobile-Bouie district with the larger goal of revitalizing the historically African-American area of central Hattiesburg (Mobile/Bouie Neighborhood Assessment 2005). Mobile-Bouie corresponds to the large cluster of sites in the northeast quadrant of the map. In project documents, all sites are identified by their Parcel PIN (PPIN) assigned by the Forrest County Tax Assessor. The 2011 Co-Operative grant included sites from Hattiesburg, Petal, and the greater Forrest County area. These sites focused on sites that were vacant or under-used. These sites were larger in size and identified by site names related to former or present activity. Using project records and tax collector's maps, I identified the PPIN for as many of the 2011 sites as possible. Others without identifiable PPIN are represented in separate maps constructed by the project team. Many of these areas are located along the river and consist of multiple parcels (site specific maps to follow). A listed goal of the 2011 Brownfield Co-Operative was a riverfront development along the Leaf River, specifically in Petal and Hattiesburg.

The Targeted Brownfield Assessment program was the source of two sites for this project. This program at the state level is used to identify at risk sites and assist in gaining funding for assessments. The assessments of these sites were funded by the State and Tribal Assistance Grant (STAG). Figure 5.2 highlights the source funding for the assessment of the focus sites in this project.

Figure 5.1: Focus Parcels of Project on Full Research Area



- interviews with any related parties, including past and present owners, former employees, and fire department personnel.

At the completion of a Phase I assessment, the investigating party may determine the property does not reveal any signs of contamination or that the property does require further investigation due to questionable activities or evidence revealed in the assessment. A third result is “down gradient property status” in which certain steps taken by owner would prolong the necessity of clean-up on site (Rafson and Rafson 1999; Hollander, et al. 2010). This down gradient determination was not reported for any of the sites studied. All seventy-six sites had a Phase I assessment. This assessment is the first documentation of action, usually required by any state or federal funding.

The next action, if signs of contamination are revealed during Phase I, is a Phase II Assessment. This comprehensive assessment attempts to identify and quantify any contamination that may be present. The Phase II assessment consists of a variety of sampling measures to identify contamination, to determine extent of contamination, and to recommend the appropriate clean-up. Methods test and monitor soil, ground, and surface water (Hollander, et al. 2010). The most common methods used in the sites presented was sample collection, such as soil bores, and temporary monitoring wells. Every site included in this study underwent a Phase I environmental assessment as a part of each respective grant or projects. Figure 5.4 represents the results of these assessments in terms of further investigation (Phase II) not required, recommended, or conducted. Figure 5.5 showcases the results of assessments (both I & II) in terms of contamination identified.

Figure 5.2: Funding Sources of Assessment Proceedings

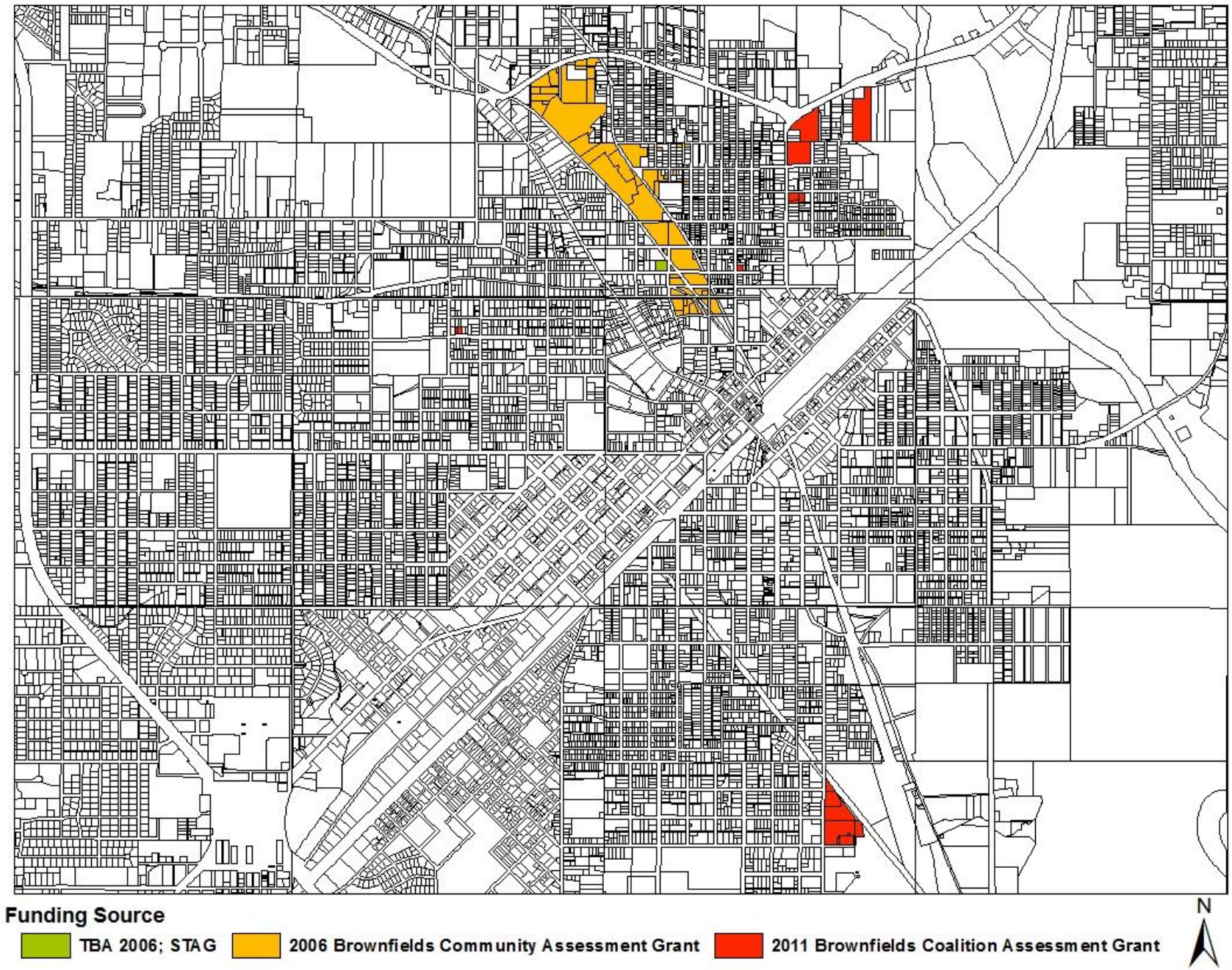
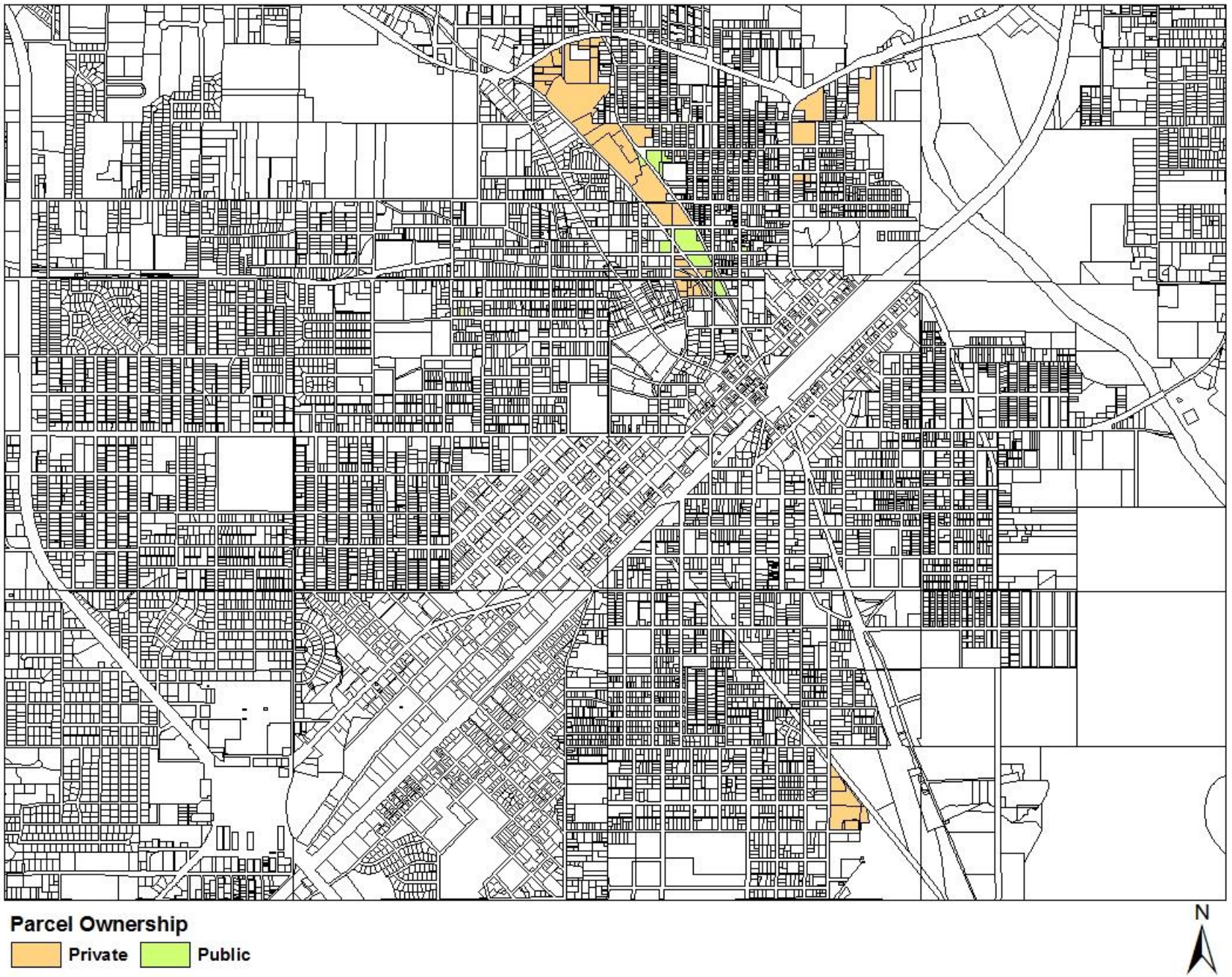


Figure 5.3: Ownership of selected parcels



Some of these sites displayed signs of contamination in Phase I, but were not verified in Phase II. Not represented on the map are the bulk sites assessed in 2003, three of which recommended further assessment and portions of two were subject to a Phase II assessment. The assessments and findings at these sites will be discussed in further detail separately.

Out of seventy-six sites, nearly forty percent revealed signs of contamination qualifying for further assessment. The other sites did not reveal any contamination concerns. Only five percent (four sites) underwent a Phase II assessment. The main cause for this lack of further investigation is resources. Phase II assessments are costly and public funds at the state and local levels are scarce.

The summaries of the project from 2008 reveal that Phase II was not pursued at sites with suspected petroleum contamination. At the time of the application and awarding in 2006, the Brownfield law included a clause reserving the determination of petroleum contamination at a site to the federal or state environmental agency. In a grant application, the budget had to include the specific amount allotted for petroleum assessment and a separate application of the suspected sites to the state agency (EPA 2003, p. 17). Upon the Phase I assessments in this project, more sites than were expected revealed signs of petroleum contamination, thus limiting the ability to assess these sites further without state determined eligibility.

Petroleum contamination can result from hydrocarbons associated with buried tanks, oil products, or leaking storage tanks or drums. Sixteen sites were found to have evidence of petroleum contamination and Phase II was recommended. Sites with petroleum (or total petroleum hydrocarbons (TPH)) are identified in Figure 5.6.

Figure 5.4: Results of Phase I Assessment

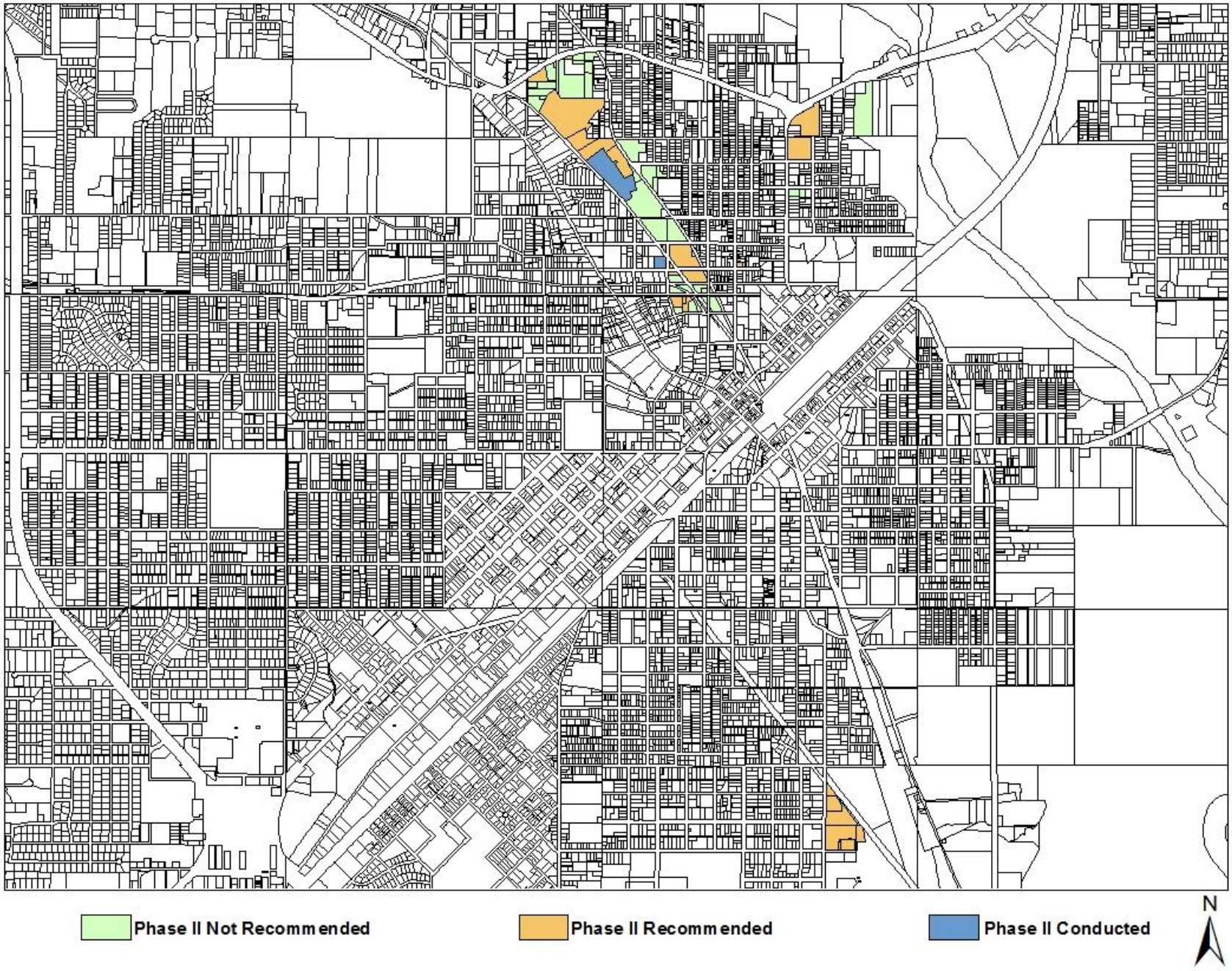
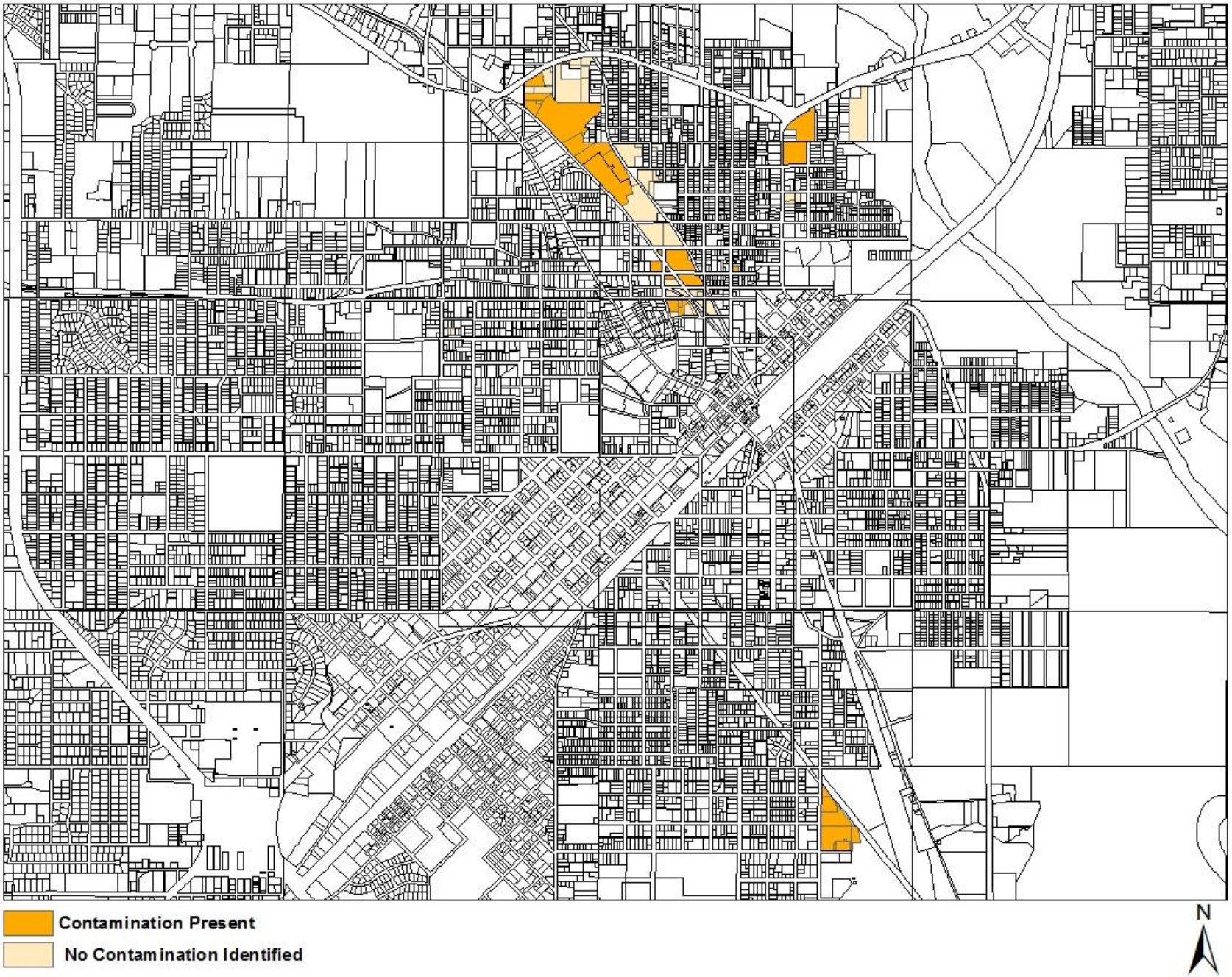


Figure 5.5: Suspected Contamination Present



Contamination suspected in Phase I is speculative. There is no quantitative evidence or samples collected to prove the contaminant is on site. However, from investigation, specifically a study of former activity, materials used/stored on site, and the on-site interview, the type of contamination can be suggested, then identified in phase II. A hindrance to presentation of contamination is the reporting of assessments done at different times by different parties.

In the 2008 Brownfield project, Phase I assessments identified the type of contamination as petroleum-related or hazardous. In the other projects, the assessments were more specific in their assignment of hazardous waste. We see in Figure 5.7 all sites that hazardous waste was identified at in the Phase I assessment. However, the label of contamination from the Phase I assessment should be considered alongside the Phase II recommendation and, if available, results.

For sites in which the assessment summary was more specific, a separate map was created identifying these (shown in Figure 5.8). Hazardous waste is not identified in Figure 5.8 since a handful of sites reported hazardous waste in addition to the contamination displayed in this map. The causes of the specific contamination are discussed specifically in the following narratives. The most common contamination present in assessed sites in the region is petroleum. Hazardous waste is the next most common form of contamination.

One site with arsenic contamination stands out on Figure 5.8. This site, assessed in 2008, was the former site of the Meridian Fertilizer Company in Hattiesburg, thus, its initial inclusion for assessment. Arsenic was the only reported chemical higher than target levels. According to the Phase I Report, the soil in the area is known to naturally

contain high arsenic levels. Since arsenic was the only compound found, the site is not considered to have any contamination that poses a health concern. Other sites also reported high levels of naturally-occurring arsenic.

One site reported volatile organic compounds. Again, it is important to keep in mind that other sites reported as "Hazardous" may have also had volatile organic compounds on site, but was not reported using the same metrics or detail.

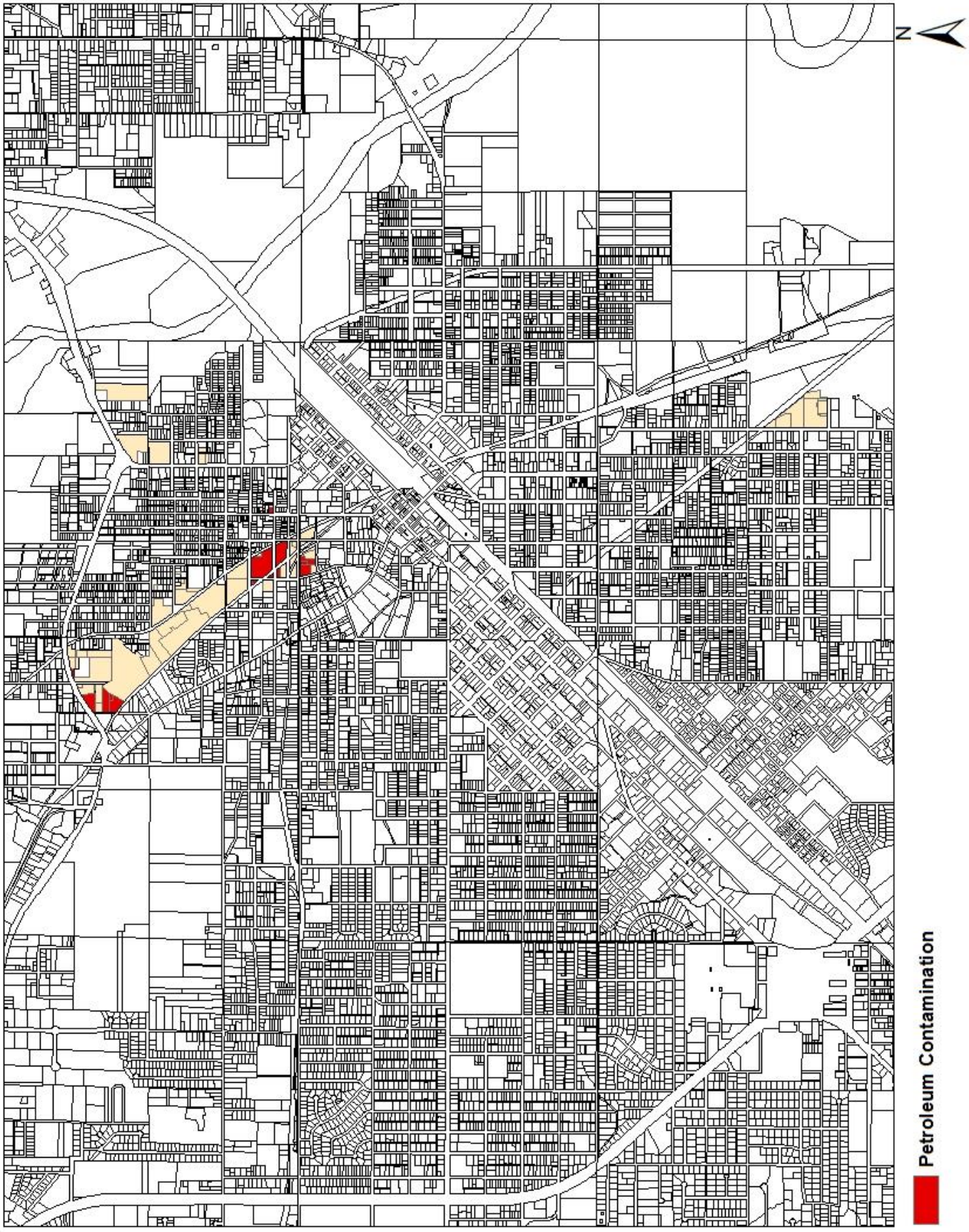


Figure 5.6: Petroleum Contamination Suspected

Figure 5.7: Hazardous Contamination Suspected

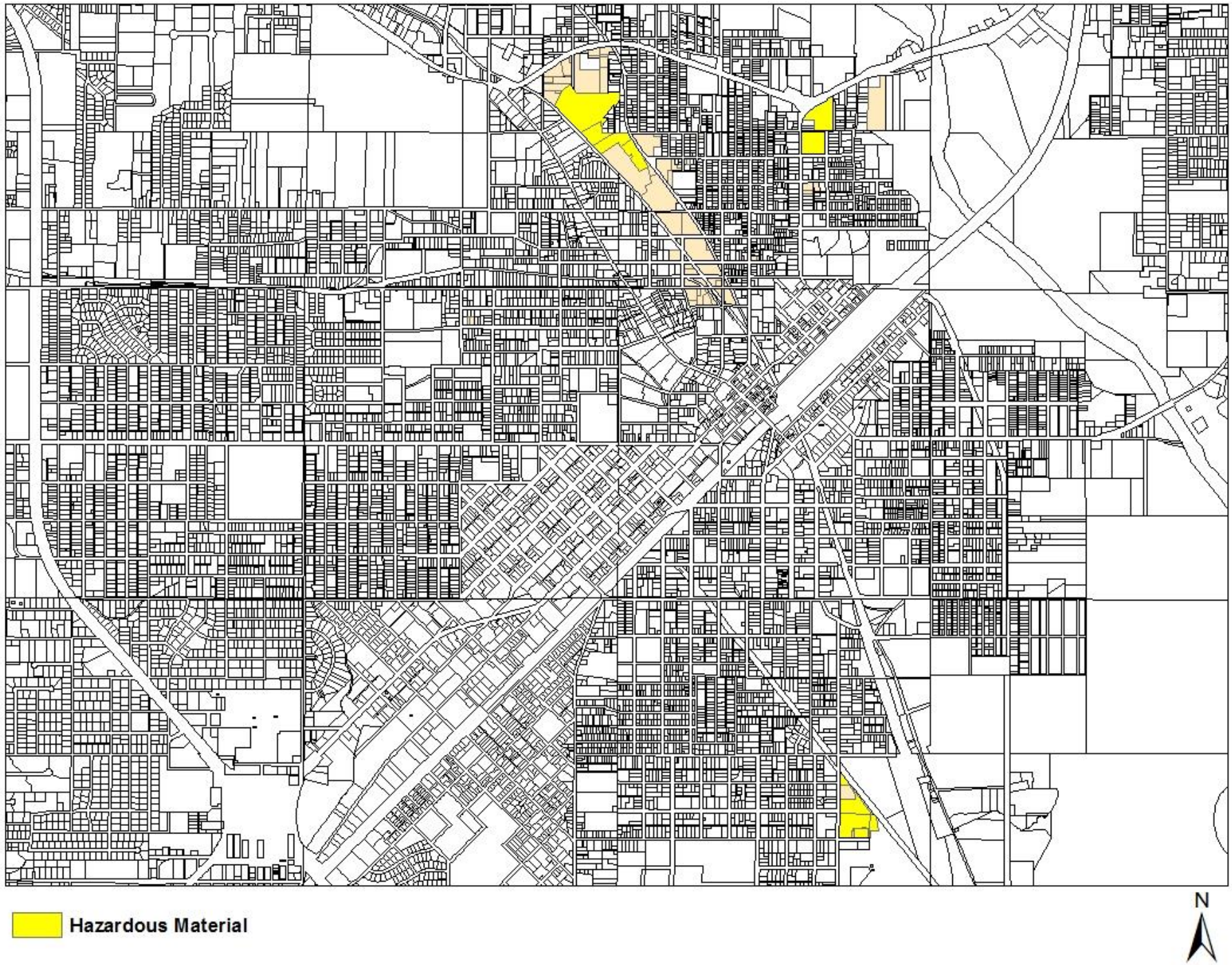
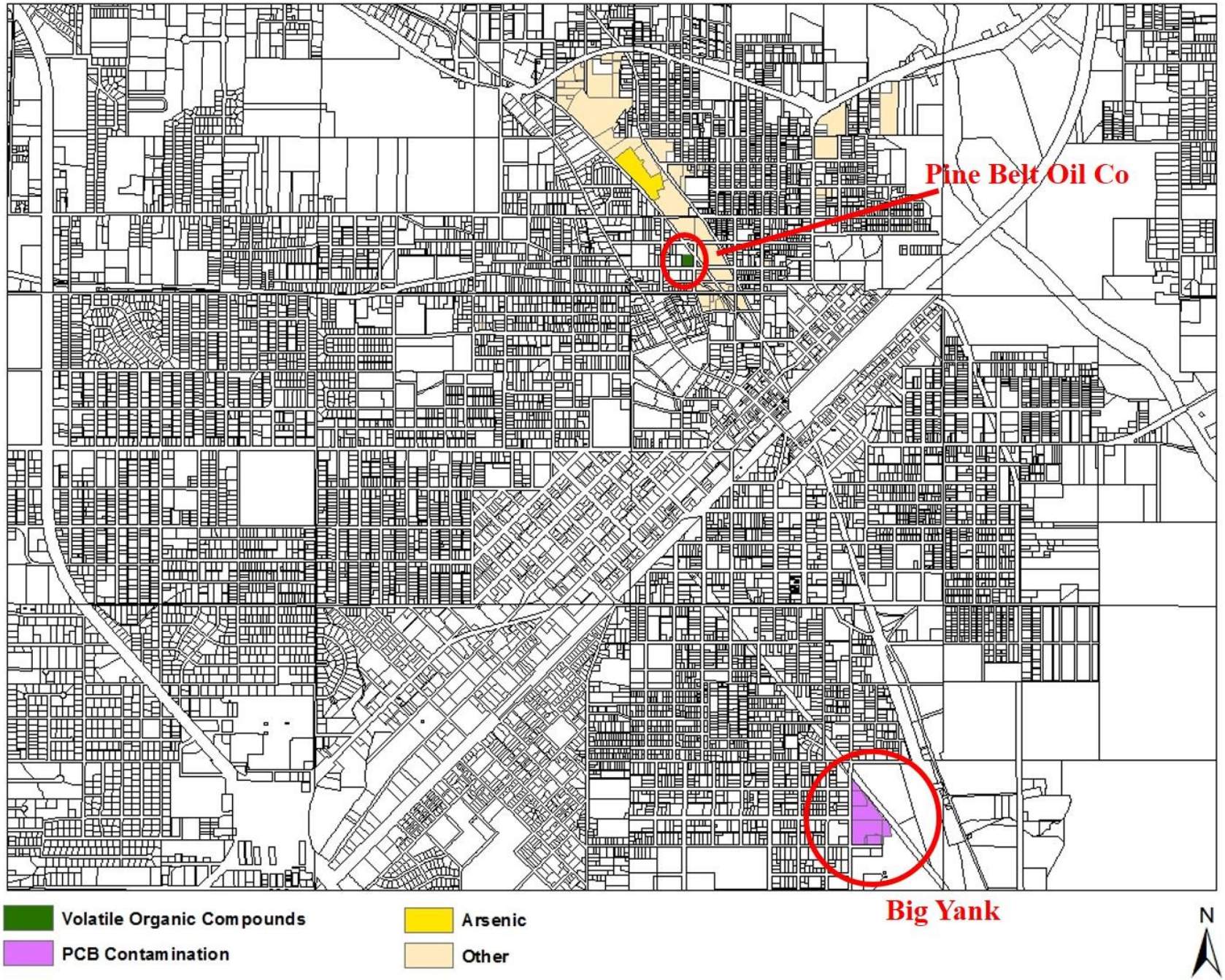


Figure 5.8: Other Contamination Suspected w/ Identified Sites



Case Studies

The following sections will focus on individual sites that represent case studies for the general findings of this study. Each site has unique variables that allow for an extended narrative section supported by assessment records and historical archives. These examples are used to demonstrate the characteristics and associated land uses of brownfields in Hattiesburg.

Pine Belt Oil Company

The Pine Belt Oil Company site was purchased in 2005 by the Forrest County Board of Supervisors to be used as a fueling station for their fleet and storage for natural disaster preparation following Hurricane Katrina. Labeled in Figure 5.8, this site underwent a Phase II assessment using $22,250 of STAG funding awarded to the Mississippi Department of Environmental Quality, with $37,500 of leveraged funds (EPA, CIMC). The assessment reports indicate that the site was used for fuel storage and wholesale distribution dating back to the 1950s. However, after reviewing the street address provided in the Polk City Directories, listings involving oil and fuel date back to 1918. The site was formerly a wholesale and storage facility for motor fuels, under various companies, including: Gulf Refining Company, Gulf Oil Corporation, B.K. Oil Company, and Pine Belt Oil Company. The initial Phase I assessment prior to the purchase did not reveal any compromising issues from the on-site storage tanks. According to the MDEQ's 2010 Community Engagement Annual Report, the County never fulfilled its intended vision to use the tanks for disaster preparation but only used the site for administration offices (MDEQ 2003). This is supported by the Polk City Directory entry for 2012 locating the Forrest County Election Commission on site. After

the purchase, a Phase II assessment conducted by MDEQ's Targeted Brownfield Assessment (TBA) program revealed that there was a release of oil products on site, with minimal impacts off-site. This assessment, dated as complete in January 2008, led to both the prior owners, Pine Belt Oil Company, and Forrest County compiling a plan for clean-up under the Voluntary Evaluation Program. This site stands out due to the successful completion of both a Phase II assessment and a work plan for clean-up of a site containing petroleum. The significant difference in this site compared to others with suspected petroleum contamination is the grant recipient of funding (MDEQ) and the ownership (county).

Big Yank Corporation Property

The Big Yank site (identified in Figure 5.8) was assessed under the Brownfields Co-Operative Grant awarded in 2010. The site currently contains five parcels under various ownership totaling 10.5 acres. According to the Phase I Environmental Site Assessment produced by Allen Engineering and Science, two monitoring wells were identified on-site indicating a potential impact on groundwater, flooded storage containers with unknown contents, as well as a multitude of broken fluorescent light bulbs, which can be a source of PCB contamination. A Phase II assessment was recommended but has not been reported. The buildings on the site are reported as in disrepair. Though PCB contamination could be possible if the broken bulbs were dated, the most significant cause for concern is the monitoring wells. The wells are reported as being presumably associated with a railroad switch boarding the property but the status of

the wells or the groundwater remains unknown. The wells are evidence that there once was a concern of some form of water contamination.

The historical information on this site was linked by the street address reported in the grant. The first mention of industrial use of this site came in 1956. At a May 1956 meeting of the Hattiesburg Area Chamber of Commerce, it was reported that the Dixie Aluminum Corporation of Rome, Georgia, a manufacturer of aluminum tubing, was interested in expanding in the South and was considering Hattiesburg (Hattiesburg Area Chamber May 1956). By the next month's meeting, the site title was being cleared and the city and chamber was reviewing the financial documents of Dixie (Hattiesburg Area Chamber June 1956). In October of 1956, a bid date for the bond election had been set for Dixie and their target date for production was June 1, 1957, in Hattiesburg (Hattiesburg Area Chamber June 1957). In the Hattiesburg Mayoral Records of Mayor Moran M. Pope, the legal agreement with Dixie Aluminum (dated 1956) states that Dixie would pay rent to the city for the custom building on site while the city maintained the ability to revoke the lease were Dixie to default on payments. The agreement also stated that the City of Hattiesburg agreed to obtain the site and build the building (Hattiesburg Municipal Records 1956). It is important to notice the appeal this agreement would have to industry. The city became responsible for the purchase, the construction, and the legal process to attract the company to their city.

In 1957, under new Mayor Gary Sutherland, records indicate that there was a conflict between the city and Dixie regarding insurance on the building. On July 1, 1957, a letter from Sutherland to the building contractors indicates aggravation at the contractors granting Dixie access to the rented building prior to the city's approval (Hattiesburg

Municipal Records). What is interesting about this correspondence in 1957 is the new Vice-President of Dixie Aluminum Corporation is former Mayor Moran M. Pope. But even with the complications, Dixie Aluminum Corporation began operations in Hattiesburg at the site on October 24, 1957 (Hattiesburg Area Chamber October 1957).

Dixie was listed on the Annual Membership report of the Area Chamber of Commerce from 1957 to 1959. However, in an undated report in the mayoral records, Dixie Aluminum abruptly shut its doors and left the building vacant in 1958, after just a year in operation. According to several special meetings called on the subject, the Chamber of Commerce minutes reveal that the city and the Chamber encouraged Dixie President Brett Holmes to accept an offer from another industry to take over the lease of the building. Over two years of negotiations, the building stood vacant and Holmes was reported as making "impossible demands" on offers received (Hattiesburg Area Chamber 1960). In a Chamber memo dated May 25-26, 1960, the Corporations problems and current situation were reported as thus: major debt; President Holmes currently working from a high-end downtown office in Rome, GA; Holmes determined to make profit on Hattiesburg site; Holmes confident of growth in industry (Hattiesburg Area Chamber 1960). As reported from a phone call between Holmes and chamber members date July 14, 1960, Holmes was adamant that he would not liquidate the equipment on site and that the company was not facing bankruptcy (Hattiesburg Area Chamber 1960). Bankruptcy proceedings were filed in the fall of 1960 in the Federal District Court of Georgia (Hattiesburg Area Chamber November 1960).

Following the sad state of affairs that was Dixie Aluminum Corporation, the building on site (finally freed from the lease with Dixie) held The Merchant's Company meat

packing plant between 1961 and 1962 (Hattiesburg Municipal 1961). According to the Polk City Directories, the site was home to Puritan Fashions Corporation in 1969 and Big Yank Corporation in 1970 to 1986, both of which were extensions of Reliance Manufacturing Corporation that first located to Hattiesburg in 1933. The company made work shirts, overalls, and other attire and employed over 300 people (McCarty 1982, p 72).

With these historical documents, we can see that the site assessed as Big Yank property, from 1956 to present, held an aluminum manufacturer, a meat packing and wholesale grocery operation, and a clothing manufacturer. The unknown storage tanks could be empty or could hold leftover chemicals and dyes associated with Big Yank operations. This is speculative. Additionally, this site is an example of land-use in Hattiesburg as the economy diversified after the timber boom.

Chain Park South

The site identified as Chain Park South is displayed in Figure 5.9. This site was assessed under the 2010 Co-Operative Grant as a part of riverfront development along the Leaf River. The site consists of 110 acres of multiple uses including residential, active commercial, and forested areas with multiple PPIN identifiers. For that reason, it was separated from the other maps produced here and represented separately. The Phase I assessment reported five Recognized Environmental Concerns. Two locations of concern received a Phase II assessment under the same grant. In addition to these two sites, the Phase I assessment reported one area previously assessed as a LUST site (leaking underground storage tank) with high benzene levels, uncontrolled petroleum tanks, and

broken florescent light bulbs. The final two RECs were that of the Gordon's Creek Landfill and the Hattiesburg Asphalt Plant that underwent further assessment.

Gordon's Creek/Hattiesburg Landfill: Phase II

The area assessed as Gordon's Creek Landfill is shown highlighted in Figure 5.9. The Phase I assessment was conducted under the larger site of Chain Park South.

According to the Phase II report, the site was used historically as a municipal landfill. However, formal operations ceased at the site prior to the Subtitle-D regulations, which is the federal code on waste management and requires certain safety standards on site. There was evidence of historic landfill activity (buried waste) as well as more recent, unpermitted dumping. Some of the waste listed in the report is as follows: "paint cans, electrical equipment, building materials, tires, medical waste, drums and other chemical containers, assorted household garbage, and fluorescent light bulbs" (Hattiesburg Area Brownfields 2011).

Figure 5.9: Boundaries of Chain Park South with Landfill Labeled and Asphalt Plant

Source: Chain Park South Phase I Assessment Report. Map created by: Allen Engineering and Science. Labels added.

The Phase II activities revealed soil levels of arsenic and lead to be above state Target Levels, which were attributed to naturally occurring minerals for the area. No Volatile Organic Compounds were found above target levels. Five Semi-Volatile Organic Compounds were found above target levels. These five were identified as all used in oil and creosote production. The report speculated that the landfill likely accepted creosote coated timbers as a part of its normal operations due to the creosote operations in the area. There was not detection of soil vapors traditionally associated with buried landfills. There were minute levels of "leachate" in the groundwater associated with landfills; however, due to the trace concentrations, the report determined that the declining amounts did not require remedial action (Hattiesburg Area Brownfields 2011). A protective cap over the landfill area was recommended, but, to date, none has been reported.

Hattiesburg Asphalt Plant: Phase II

The area assessed as the Hattiesburg Asphalt Plant is a 5-acre parcel identified in blue in Figure 5.9. The Phase I assessment was conducted under the site assessment of Chain Park South. At the time of the assessment, the parcel was owned by the City of Hattiesburg and was the formal location of the city's Asphalt Plant. Phase II assessment was recommended to assess soil and groundwater contamination connected with the historic activity and recent unpermitted dumping. The only structure reported on site is an earthen loading ramp connected with plant activities. Contaminants found in the soil include several semi-volatile compounds (SVCs), trace amounts of petroleum compounds, and above-target levels of lead and arsenic. Though the exact source of these

compounds is reported as unknown, most of them are suspected to be associated with the asphalt operations. Arsenic is suspected to be from naturally occurring sources in the area. Barium was detected at above target levels in the groundwater samples of the sight. Overall, the contaminants found were all connected with expected amounts associated with the historical use. The Phase II report recommended a cap to minimize further leakage from the site.

Forty acres of the Chain Park South site was determined to be greenspace, while the remainder was targeted as a public waterfront development. According to the most recent report to the EPA dated 2011, the city was pursuing further grant funding to assist with remedial procedures at the landfill and asphalt plant. To date, no further funding has been reported for this project.

Outliers: Hercules and Gulf State Creosote

Two sites of importance to the brownfield picture of Hattiesburg is the site of Hercules, Incorporated, located on W 7th Street, and the former site of the Gulf State Creosote plant. Both companies were large employers for the area in the early 20th century and both have presented their own contamination and clean-up concerns. The purpose for isolating them from the other analysis is the project is for the sake of clarification. Both sites presented significant hazards to human health due to the chemicals used on site during periods of operation, significantly more so than any other sites discussed here. Compared to the other sites discussed here, these sites were not assessed and cleaned up under grant funding or programs but out of concern for human health and, in the case of Hercules, in violation of the Resource Conservation and

Recovery Act. To include them in the above descriptions would be limiting to the data available on these sites and distract from the information provided about the other sites. However, for the purpose of an accurate historical narrative, a brief summary regarding contamination and clean-up measures is presented here for each site.

The Gulf State Creosote facility spanned approximately 100 acres surrounding West Pine Street. The site produced creosote-treated timber from the early 1900s to 1960. The compounds used to produce the wood preserver can be toxic to humans when exposed on contact or through ingestion (ATSDR 2006). In the early 2000s, the MDEQ began a clean-up process to remove contaminated soil in the area and prevent further contamination (MDEQ October 2003). The cite was reassessed in 2010 due to citizen concern and was reported to no longer pose a risk to human health (MDEQ 2010).

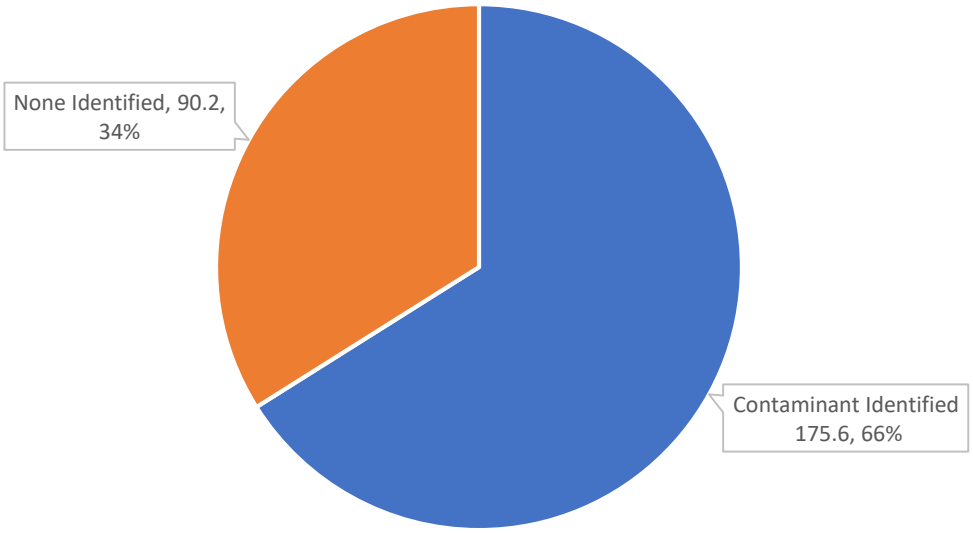
Hercules Incorporated, formerly known as Hercules Powder Company, was one of the largest employer's in South Mississippi for much of the 20th century. Opening in Hattiesburg in 1922, the plant produced a wide array of 250 chemical products including resins, pesticides, and rubber products (McCarty 1982; EPA 2014). Due to the discharge, storage, and improper disposal of many of these chemicals, Hercules was found to be in violation of federal law regarding hazardous waste. In 2014, an order was agreed to by the EPA and Hercules mandating assessment and clean-up estimated to cost $1 million under the Resource Conservation and Recovery Act (EPA). According to the EPA's Facility Report, Hercules is still in violation of the RCRA as of September 2017 (EPA, "Detailed Facility Report").

Quantitative Analysis using Acreage

To summarize the findings of this thesis, the final data presented will be the Hattiesburg brownfields situation in term of acreage affected of the sites considered previously. This is presented to serve as a numerical quantification of the brownfield situation.

As we see in Figure 5.10, out of the total of approximately 266 acres assessed in Hattiesburg, a majority contained evidence of contamination. Roughly 90 acres of this was not found to be contaminated. The official Phase I assessment report for these sites documents these findings for every site. Essentially, finding no signs of contamination removes a significant portion of the blighted impression on these sites that can negatively impact real estate sales and future development.

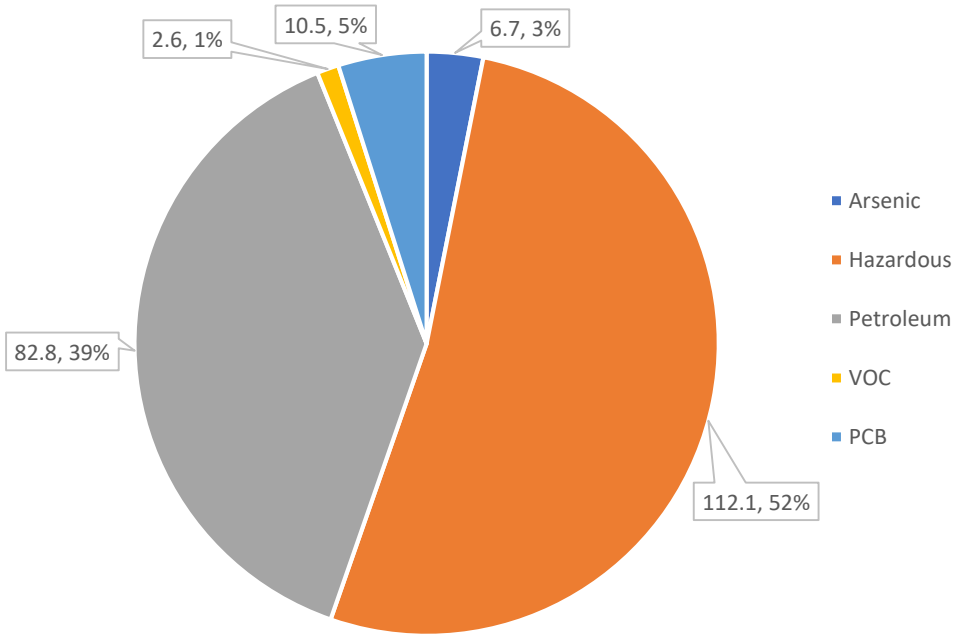
Figure 5.10: Acres of Identified Contamination Graph



Source: Created by the author using Microsoft Word

Out of the 176 acres with identified contamination, five main contaminants were explicitly identified. These five contaminants and the corresponding acreage is displayed in Figure 5.11. Though petroleum was the most common contaminant by number of sites; by acreage, hazardous waste was found to be more prevalent. This can lead to two conclusions, petroleum sites were more frequent, but on average smaller and, sites with evidence of hazardous waste tended to be larger sites of either mixed use or large former industrial activity (i.e. factories such as Big Yank).

Figure 5.11: Type of Contamination in Acres Graph



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Chapter 6

Conclusion

Brownfields are a hindrance to the development of cities and communities around the United States. The industrial phenomenon of polluted property plagues city centers and historic economic districts, many of which are now considered to be districts deserving of protection and preservation. Many brownfields are the remnants of former industries that once brought jobs and prosperity to a city, but these properties now stifle development and economic growth. Brownfields speak to a legacy that extends beyond the operations of an industry or business.

As discussed in Chapter 1, the EPA defines brownfields as properties in which the presence (or potential presence) of a contaminant limits the use or development of the property. The underutilization of a site is often linked to perception, rather than evidence, thus limiting development for a site and the surrounding properties. We see that property that was once an economic catalyst is now an economic drain without the needed assessment and subsequent redevelopment. Without intensive scientific tests and monitoring, many former industrial sites are left vacant and underused due to the lack of information regarding the actual presence of contamination.

This project revealed the benefits of environmental assessments. Sites chosen for evaluation were those with significant evidence of contamination or those that were significantly underused due to perceptions of contamination. Assessments determine if contamination is present and then, the form of contaminant. Those assessments that found no contamination concerns now serve as a public record, clearing the path to future development for said property. This can manifest itself in higher property value, real

estate transactions, or economic investments (i.e. new businesses). It is important to note that the sites considered here were only sites that have been assessed. This leaves many other sites in Hattiesburg that pose environmental concerns but have not been assessed. The contamination situation for the specific contaminants here could look significantly different were it possible to assess every brownfield in Hattiesburg.

For the sites that did have contamination, we see the need for remediation efforts that are difficult to execute due to funding and legal obstacles. Successful revitalization and regentrification for historic districts depends on the ability to execute remediation and redevelopment to recover underused property for the benefit of citizens and the economy.

As demonstrated through the case studies included in this thesis, the Hub City has a rich history that we can experience in part by considering its past. This history – of industry, politics, and economics – are illustrated through the property considered here. By understanding this history, we better understand the brownfield landscape of Hattiesburg, Mississippi.

The first step to finding a solution is conceptualizing the problem: the cause, the scope, the nature. By combining records, assessments, and archives, this project attempted to create a tool to accomplish that for the city of Hattiesburg. These may prove useful in future city policies, community projects, and citizen's investments and economic endeavors. Hattiesburg is a city rich with business, creativity, and history. Brownfields are a part of that story – from the history of former industry to future redevelopment projects.

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Appendix

Site Name/PPIN	Acreage	Ownership	Phase I conducted	Contaminant Identified	Phase II Co	Phase II Recommended
13280	0.861	Private	Y	Hazardous, TPH	N	Y
14295	0.155	Private	Y	N/A	N	N
14334	2.105	Private	Y	N/A	N	N
14335	1.524	Public	Y	N/A	N	N
14338	1.353	Public	Y	N/A	N	N
14340	0.071	Public	Y	N/A	N	N
14343	0.101	Private	Y	N/A	N	N
15038	13	Private	Y	N/A	N	N
15440	17	Private	Y	N/A	N	N
15670	1.069	Public	Y	N/A	N	N
15713	1.248	Private	Y	N/A	N	N
15714	0.461	Private	Y	N/A	N	N
15715	0.636	Private	Y	TPH	N	Y
15716	0.17	Private	Y	TPH	N	Y
18842	0.523	Private	Y	N/A	N	N
18843	1.267	Private	Y	N/A	N	N
18844	0.206	Public	Y	N/A	N	N
18846	1.28	Public	Y	TPH	N	Y
18847	0.685	Private	Y	N/A	N	N
18848	0.331	Private	Y	TPH	N	Y
18849	0.141	Private	Y	N/A	N	N
18900	0.2	Public	Y	Hazardous, TPH	N	Y
18957	3.126	Public	Y	TPH	N	Y
18958	0.182	Private	Y	TPH	N	Y
18972	0.16	Public	Y	N/A	N	N
18980	0.086	Public	Y	TPH	N	Y
18981	0.036	Public	Y	TPH	N	Y
19016	2.811	Private	Y	N/A	N	N
19017	1.587	Private	Y	N/A	N	N
20646	0.459	Private	Y	N/A	N	N
20651	0.532	Private	Y	N/A	N	N
20653	6.528	Private	Y	N/A	N	N
20654	0.275	Private	Y	N/A	N	N
20655	0.587	Private	Y	N/A	N	N
20656	0.08	Private	Y	N/A	N	N
20657	1.338	Private	Y	N/A	N	N
20662	0.117	Private	Y	TPH	N	Y
20707	0.104	N/A	Y	N/A	N	N
20709	1.035	Private	Y	N/A	N	N
20710	0.122	Private	Y	N/A	N	N
20711	1.213	Private	Y	TPH	N	Y
20712	0.391	Private	Y	N/A	N	N
20713	1.006	Private	Y	N/A	N	N
20714	1.134	Private	Y	TPH	N	N
21974	0.317	Private	Y	N/A	N	N
25787	0.143	Public	Y	N/A	N	N

Site Name/PPIN	Acreage	Ownership	Phase I conducted	Contaminant Identified	Phase II Co	Phase II Recommended
25791	0.128	Public	Y	N/A	N	N
25796	0.076	Public	Y	N/A	N	N
25845	2.593	Private	Y	Hazardous	N	Y
25847	2.472	Private	Y	Hazardous	N	Y
25848	3.078	Private	Y	Hazardous	N	Y
25849	6.011	Private	Y	N/A	N	N
25850	0.668	Public	Y	N/A	N	N
25851	6.681	Private	Y	Hazardous	Y	Y
25950	0.736	Private	Y	TPH	N	N
25951	0.127	Private	Y	TPH	N	N
25956	10.768	Private	Y	Hazardous	N	Y
33397	0.123	Public	Y	N/A	N	N
39334	0.004	Private	Y	N/A	N	N
BIG YANK (26860, 26861, 45338, 31892, 26857, 45487)	10.5	Private	Y	PCB	N	Y
BOUIE STREET & 8TH STREET (17492, 17493, 17494)	1.5	Private	Y	N/A	N	N
BOUIE STREET & HIGHWAY 11 (15008, 15772)	6.8	Private	Y	Hazardous	N	Y
CHAIN PARK NORTH	40	Multiple	Y	N/A	N	N
CHAIN PARK SOUTH - HATTIESBURG LANDFILL	70	Multiple	Y	Hazardous, TPH	Y	Y
GORDON'S CREEK CORRIDOR	15,162 linear feet, 139 acres	Multiple	Y	TPH, Hazardous	N	Y
HATTIESBURG ASPHALT PLANT	5	Public	Y	Hazardous	Y	Y
HATTIESBURG DOWNTOWN TRUCK ROUTE	47.5	Multiple	Y	Hazardous	Y	Y
MILLER STREET PROPERTY (19726, 19723)	0.349	Multiple	Y	N/A	N	N
PINE BELT OIL CO (18978)	2.6	Public	Y	TPH, VOC	Y	Y