RUBBERTOWN CORRIDOR ECONOMIC DEVELOPMENT STRATEGY

ACKNOWLEDGEMENTS

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SPECIAL THANKS TO:

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Leonard Watkins , West Louisville resident and former City Councilman

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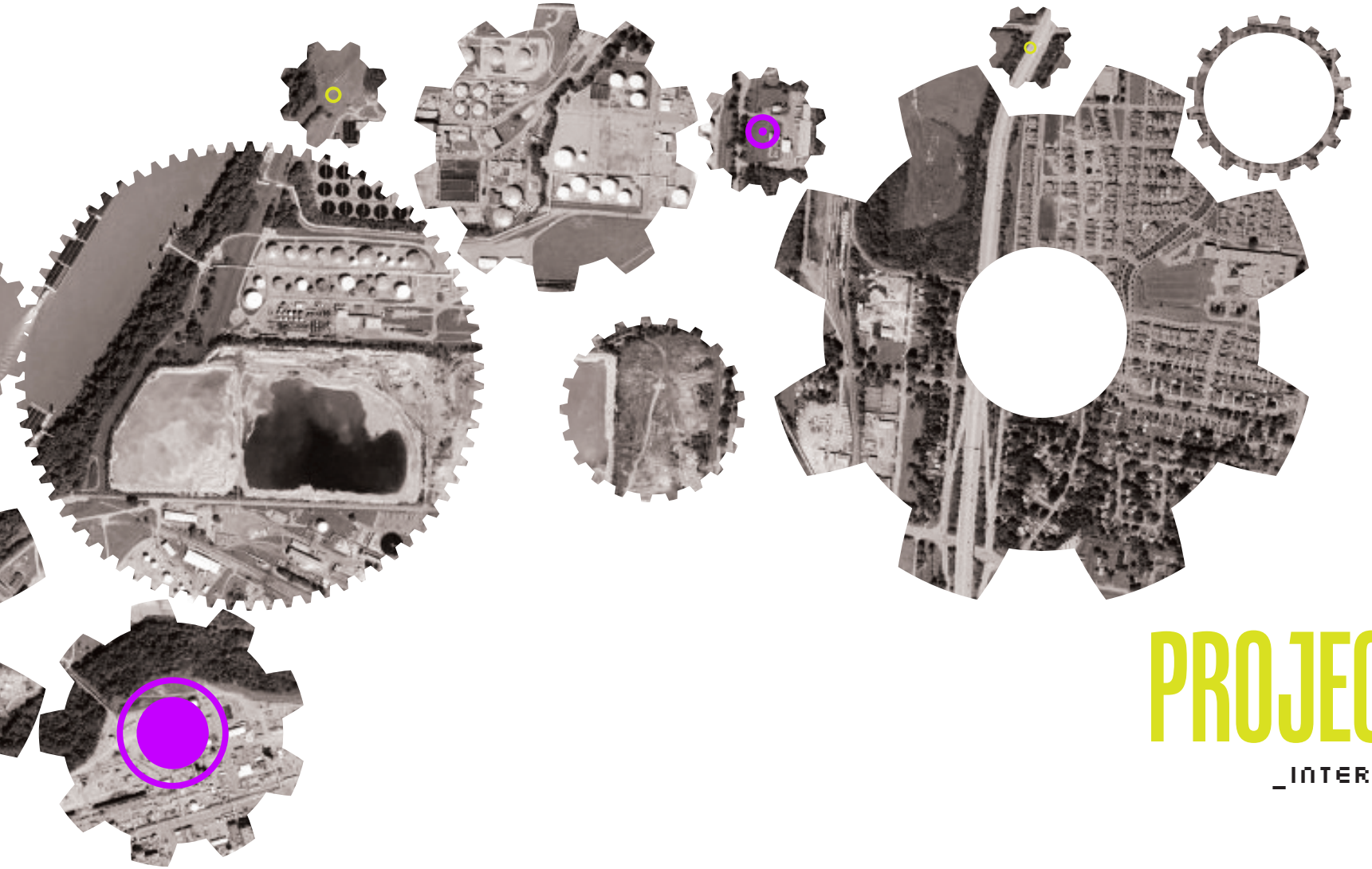

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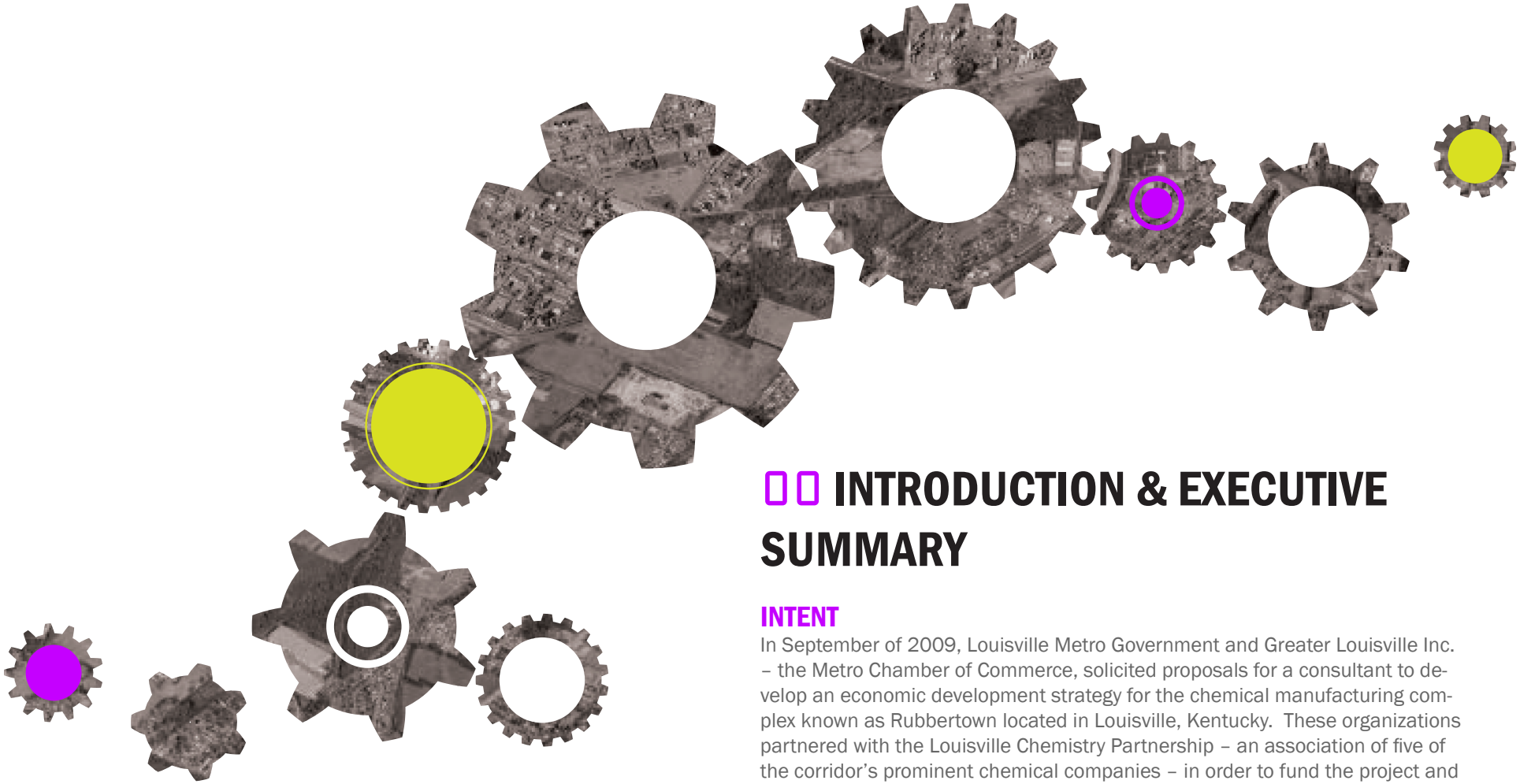


00 INTRODUCTION & EXECUTIVE SUMMARY

INTENT

In September of 2009, Louisville Metro Government and Greater Louisville Inc. – the Metro Chamber of Commerce, solicited proposals for a consultant to develop an economic development strategy for the chemical manufacturing complex known as Rubbertown located in Louisville, Kentucky. These organizations partnered with the Louisville Chemistry Partnership – an association of five of the corridor's prominent chemical companies – in order to fund the project and hired a team led by Interface Studio to perform the work.

The intent of this study is to increase the understanding and awareness of the current conditions and future needs of the area, and to generate a coherent plan of action aimed at achieving a balance between sustainable economic growth and the needs of adjacent neighborhoods. Improving the quality of life for corridor employees and residents, achieving growth in stable employment opportunities for West Louisville residents, and transitioning the manufacturing complex toward ecological sustainability and increased competitiveness are core objectives of this study.

The scope of the Rubbertown Economic Development Strategy is intended to provide targeted, achievable recommendations tailored to the specific realities and functions of Rubbertown. For the purposes of this Strategy, Rubbertown is defined by the area between Gibson Lane to the north, Lees Lane to the south, the Ohio River to the west, and I-264 and the Norfolk Southern freight rail line to the east. While Rubbertown is examined in the context of the greater Louisville region – especially in terms of demographic, economic and market trends – the study area itself was subject to a detailed parcel-by-parcel survey. The survey has resulted in the production of a customized "atlas" visualizing both the physical and economic characteristics of the district. This has allowed the team and the project partners to better understand and articulate the interrelationships of the district and develop the most targeted and specific recommendations possible.

PROJECT PARTNERS

The following organizations have partnered together to sponsor and facilitate the development of the Rubbertown Economic Development Strategy:

THE LOUISVILLE CHEMISTRY PARTNERSHIP (LCP)

The Louisville Chemistry Partnership is a voluntary association of chemistry-based companies dedicated to mutual cooperation among members and neighbors, promoting the health, safety, environmental and economic well being of the industry and surrounding communities.

GREATER LOUISVILLE INC. (GLI)

Greater Louisville Inc. is the Metro Chamber of Commerce for the Greater Louisville, Kentucky metro region. Through advocacy efforts, networking opportunities and cost saving initiatives, GLI provides a wide range of programs and services that support our member businesses, encourage entrepreneurial enterprises and contribute to business and community growth and prosperity.

LOUISVILLE METRO GOVERNMENT, ECONOMIC DEVELOPMENT DEPARTMENT (EDD)

The department encourages and assists economic development by promoting job creation, meeting workforce needs, creating amenities within the region, and balancing growth by enhancing the environment, in order to improve the quality of life in Louisville region.

In conjunction with the project partners, an **Advisory Committee** was formed to oversee and guide the development of the plan. The eight-member committee was comprised of **Earl Beason** – West Louisville resident, **Arnita Gadson** of the Kentucky Environmental Quality Commission, **John Gant** – General Manager at Carbide Industries, **Tom Gettelfinger, Carl Hilton** of the West Jefferson County Community Task Force (WJCCTF), **Brad Karas** of American Synthetic Rubber Corp., **Alice Simpson** of the Lubrizol Corporation, and **Leonard Watkins** – West Louisville resident and former City Councilman. **Bill Simpson** and **Tom Herman** of Zeon Chemicals and **Rich Robinson** of American Synthetic Rubber Corp. also contributed to committee discussions.

In addition to the project Advisory Committee, several one-on-one **Interviews** and **Focus Groups** were organized in order to solicit input on the Strategy from a broad cross-section of stakeholders early in the planning process. These Interviews and Focus Groups included local residents & community activists, plant managers & employees, area business owners, developers, and City departments.

Finally, the consultant team selected for the development of the Strategy is composed of **Interface Studio LLC** of Philadelphia, PA and **AECOM Economics**, who (as ERA) previously conducted the Park Hill Real Estate Market Analysis in 2008.

PUBLIC INVOLVEMENT

The following meetings and interviews were used to gather input for the Rubbertown Corridor Economic Development Strategy.

JANUARY 19-21: Initial thoughts and background information

> 1st Louisville Metro Government Department Focus Group
> Stakeholder Interviews with MSD, Riverport, residents, GLI and private developers
> Louisville Metro Department Directors Focus Group
> Greater Louisville Inc. Manufacturing Businesses focus group
> Rubbertown Business Focus Group
> Neighborhood Focus Group meeting
> 1st Rubbertown Strategy Advisory Group meeting

MARCH 2-3: A review of data and analysis to date

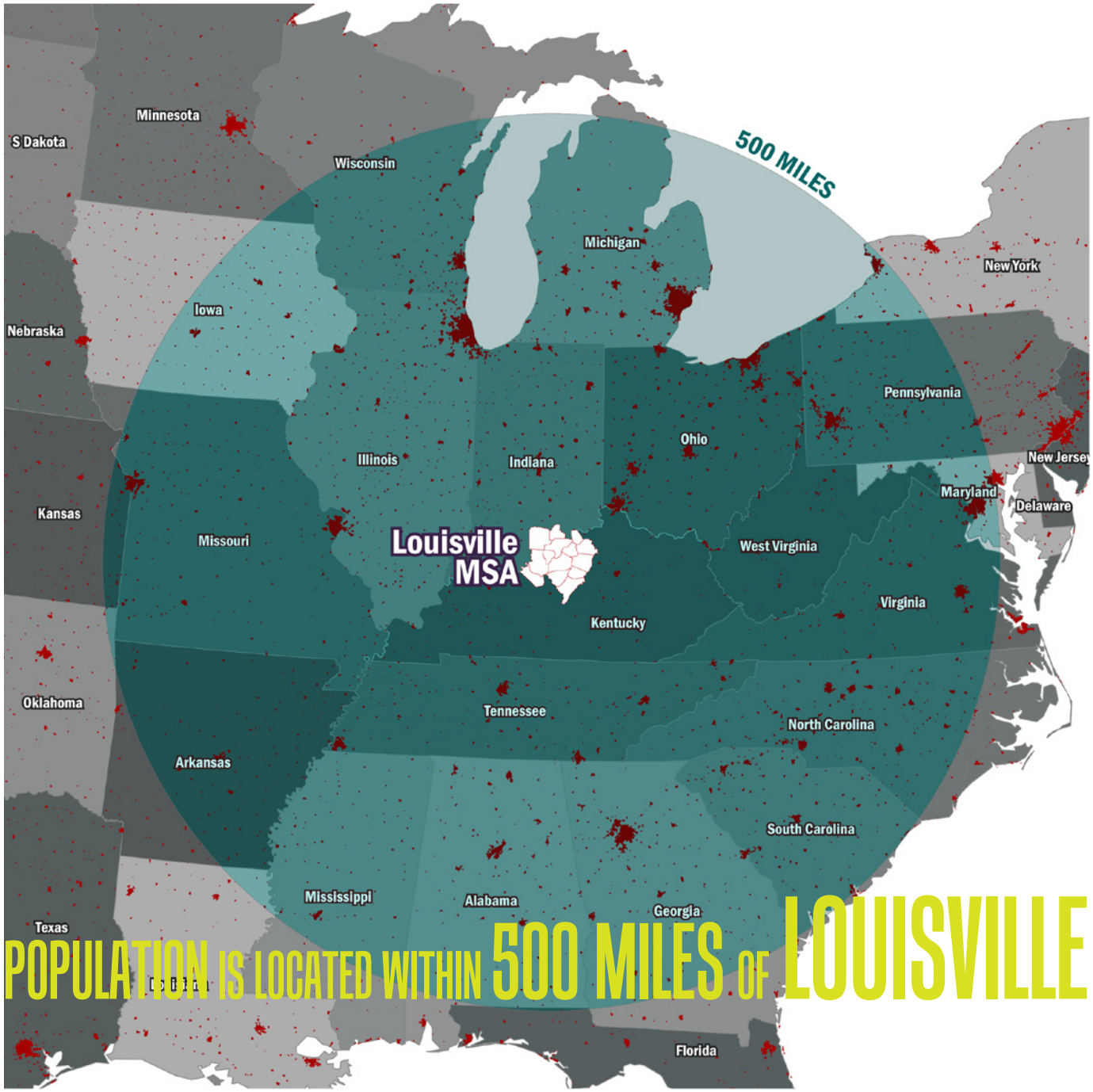
> Public Meeting
> 2nd Rubbertown Strategy Advisory Group meeting

JUNE 2-3: A presentation and discussion of preliminary recommendations

> Louisville Chemistry Partnership meeting
> 2nd Louisville Metro Government Department Focus Group
> 3rd Rubbertown Strategy Advisory Group
> Public Meeting

CONTEXT

The Louisville Metropolitan Statistical Area (MSA) is a fourteen-county region comprising more than 1.2 million people and is the 42nd largest MSA in the nation. The MSA includes Jefferson, Bullitt, Henry, Meade, Nelson, Oldham, Shelby, Spencer and Trimble Counties in Kentucky and Clark, Floyd, Harrison, Scott and Washington Counties in Indiana. The MSA is centrally located to the major population centers of the U.S. – lying within 500 miles of nearly half of the U.S. population – and UPS Worldport is located only six miles east at the Louisville International Airport. The area is bisected by the Ohio River and well-served by both interstates and freight rail.



NEARLY HALF OF THE US POPULATION IS LOCATED WITHIN 500 MILES OF LOUISVILLE

FIG 1 LOUISVILLE MSA source: greater lousville inc

PREVIOUS PLANS

Over the last decade, several economic studies have been undertaken relevant to the development of this Rubbertown strategy. The studies have addressed topics of regional economic competitiveness, urban industrial redevelopment, and industrial cluster strengthening. This study builds on these previous efforts by incorporating relevant findings, and translating high-level findings into district-specific strategies.

- Wired65 Regional Competitiveness Strategy (2009; TIP Strategies, Inc.)
- Park Hill Corridor Micro-Cluster Analysis (2009; Initiative for a Competitive Inner City [ICIC] – Update of 2001 West Louisville Competitive Assessment)
- Park Hill Industrial Corridor Revitalization - Market Analysis (2008; Economic Research Associates [ERA])
- West Louisville Competitive Assessment and Strategy Project (2001; ICIC)

STRATEGIC TOXIC AIR REDUCTION PROGRAM (STAR)

BACKGROUND

The Strategic Toxic Air Reduction (STAR) Program of the Louisville Metro Air Pollution Control District (APCD) is a regulatory program enacted to monitor and reduce harmful contaminants and to protect citizens' health and quality of life. The program was created in response to studies which indicated that Louisville had unacceptably high levels of toxic chemicals in the air. A monitoring study in 2000-01[1] documented that there were high concentrations of harmful air toxics, including cancer-causing chemicals, in specific neighborhoods. A study by the U.S. Environmental Protection Agency[2] that included modeling of reported emissions concluded that Louisville's air had the highest potential risk for adverse effects of all of the counties in the eight southeastern states. The threat to public health from toxic air contaminants was deemed sufficient to warrant action on the part of local government.

There are three main components to the STAR Program:

- The listing of toxic air contaminants (TACs) and establishment of a framework for estimating risks, generally prohibiting emitting TACs in a harmful amount or duration. (Regulations 5.01 and 5.23.)
- Requiring about 170 companies that emit the largest amounts of chemicals to determine through modeling whether they are exceeding the health risk goal for each of the targeted chemicals. Companies that exceed the goal are required to present a plan to reduce emissions over the next six years. (Regulations 5.21, 5.20 and 5.22.)
- Developing a plan of action to reduce emissions from other sources with the help of interested stakeholders in the community. (Regulation 5.30.)

[1] "West Louisville Air Toxics Study Risk Assessment" by Sciences International, Inc. of Alexandria, Virginia. Final Report – 2003.

[2] "U.S. EPA Region 4 Air Toxics Relative Risk Screening Analysis" by Paul Wagner, U.S. EPA, 9-27-2002.

WELCOME TO RUBBERTOWN

The West Louisville chemical manufacturing complex known as Rubbertown is at a crossroads. Once surrounded by undeveloped land and isolated from the City of Louisville, Rubbertown manufactured vital war material for the U.S. government. Over the years, the Corridor transitioned to commercial chemical manufacturing embedded within a network of established communities. This proximity has generated friction as nearby communities have taken issue with the chemical plants' emissions, truck traffic and aging infrastructure. Yet, with plants owned by two of the world's three largest chemical manufacturers (Dow Chemical and DuPont), the district directly employs more than 1,400 people (and supports another 7400 jobs in the region), with a combined annual payroll of $130 million. Despite the widely-touted decline of American manufacturing, these jobs – often stable, high-paying union jobs with benefits – remain one of this country's most accessible pathways to the middle class for those without a college education.

As an urban industrial district, the key to Rubbertown's survival and success into the future will be balance. Rubbertown companies are subject to global and regional economic forces and shaped by the local business climate – such as the costs associated with the STAR program to reduce harmful air toxics. But Rubbertown also benefits from its urban setting in terms of location, access, workforce and infrastructure. Balancing the needs of businesses competing in an increasingly global marketplace with the responsibilities of good neighbors will be the challenge moving forward for Rubbertown.

Metro Government and GLI want to help. Together with the consultant team, the Louisville Chemistry Partnership, and the west Jefferson County community, we aim to achieve a balanced strategy – using sustainability as the guiding principle by which Rubbertown can be transitioned toward a more ecologically, socially and economically viable neighbor far into the future.

KEY FINDINGS

Issues related to enviornmental concerns are a significant factor for the district. The implementation of the STAR program is evidence of the depth of concern related to air pollution in West Louisville. The Corridor suffers from a negative image and perceptions of contamination and pollution. However, the quality of life for both residents and employees in Rubbertown is also marred by deficient infrastructure - crowded, narrow roads, little lighting or sidewalks, dangerous crossings, and lack of river access.

The companies themselves are vulnerable to the conditions that are contributing to the continued decline of traditional manufacturing sectors nationwide. However, specialization, adaptibility and responsiveness to growth industries have kept many Rubbertown companies afloat - and even competitive - through the recent economic downturn.

While utility service is not uniformly available, especially in the southern half of the study area, the transportation infrastructure – interstate access, freight rail, river barge facilities – is excellent. Development-ready property is relatively scarce in Rubbertown due to a combination of contamination, soils, lack of sewer or road infrastructure and other environmental factors. However, a detailed Corridor land inventory indicates that there is a significant amount of vacant and underutilized land as well as "slack space" (unused portions of active industrial properties) that may offer opportunities for redevelopment if strategic investments are made and proactive policies are put in place.

Finally, as indicated in the market analysis, there is significant demand for warehouse space in the immediate vicinity of the Rubbertown Corridor. Metro government – in addition to state and federal authorities – is eager to support domestic manufacturing and distribution due to good jobs and revenue stream they provide, and reduced reliance on foreign imports. The opportunity exists to leverage the physical and market potential of Rubbertown to retain and expand jobs while also improving the quality of life for residents and employees. This plan should be considered the first step in a long conversation about Rubbertown's future and seeks to set the foundation for a renewed vision for the Corridor.

GOALS

The public process of stakeholder engagement for the Economic Development Strategy, including interviews, focus groups, advisory committee meetings, and project partner meetings, has resulted in a broad articulation of goals and objectives that have come to serve as a guidepost for Rubbertown recommendations. These goals and objectives are focused on further balancing the priorities of industrial uses with those of the residential neighborhoods that have co-existed in the study area for generations.

- **ENHANCE THE QUALITY OF LIFE FOR RUBBERTOWN RESIDENTS & EMPLOYEES**
- **PROTECT & EXPAND VITAL INDUSTRIAL DISTRICT JOBS**
- **LEVERAGE SYNERGIES & COOPERATION TO STRENGTHEN INDUSTRIES**
- **IMPROVE THE RELATIONSHIP BETWEEN INDUSTRIES & NEIGHBORING COMMUNITIES**
- **RAISE THE AWARENESS & IMPROVE THE IMAGE OF RUBBERTOWN**
- **IMPROVE THE INFRASTRUCTURE & CHARACTER OF THE AREA**
- **IDENTIFY & LEVERAGE VACANT LAND OPPORTUNITIES**
- **EXPLORE STRATEGIES TO ADDRESS CONTAMINATED LAND**

SUMMARY OF RECOMMENDATIONS

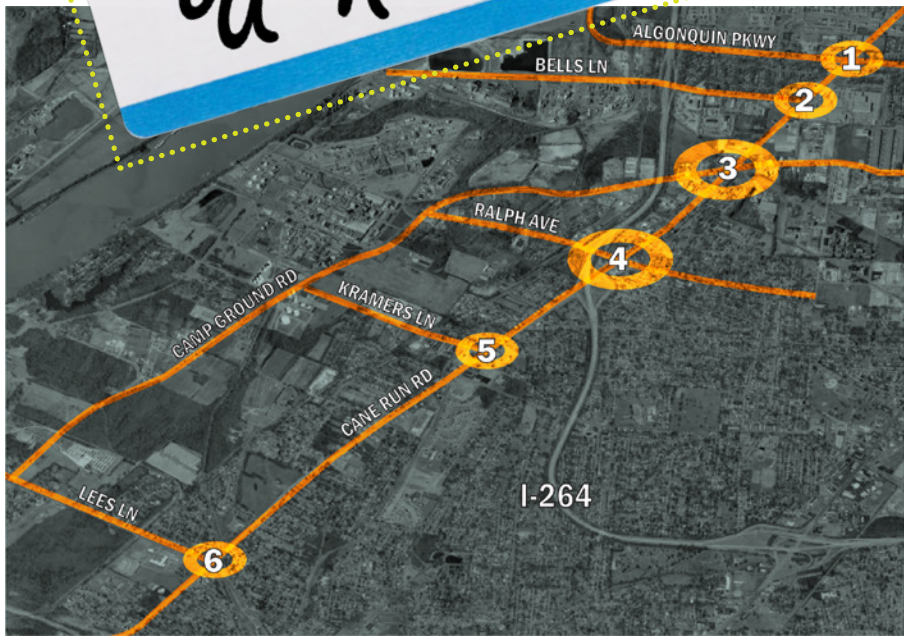
1: RUBBERTOWN 2.0 REDEFINE THE IDENTITY AND COMMUNICATE IT.

Over and over again, we heard that the Rubbertown Corridor suffers from a perception problem. Many people are not aware of the existence of the bustling, vibrant industrial corridor on the Ohio River. Those who are aware of Rubbertown often possess a negative image of it. The following recommendations seek to a) Forge a distinctive identity for the Corridor, b) Redefine the image of Rubbertown in the public eye, and c) Communicate the potential of the district to Louisvillians.

KEY RECOMMENDATIONS INCLUDE:

- Develop a "Made in Rubbertown" campaign
- Develop & disseminate conceptual site designs for key properties
- Create a strong online presence and marketing materials
- Design primary gateways
- Introduce signage & wayfinding
- Creatively integrate public art
- Expand the presence of Rubbertown Community Advisory Committee (RCAC) and link activities with the West Jefferson County Community Task Force (WJCCTF) to actively engage community
- Raise awareness of green jobs in Rubbertown
- Consider e-naming Rubbertown

RENDERING OF GATEWAY AT RALPH AVENUE AND CANE RUN LANE INCLUDES SIGNAGE, LIGHTING, SIDEWALKS, AND LANDSCAPING. RIGHT: EXISTING RALPH AVENUE.



GATEWAYS OPPORTUNITIES

RENDERING OF PUBLIC ART AND BIOREMEDIATION OPPORTUNITIES AT TANK FARM.

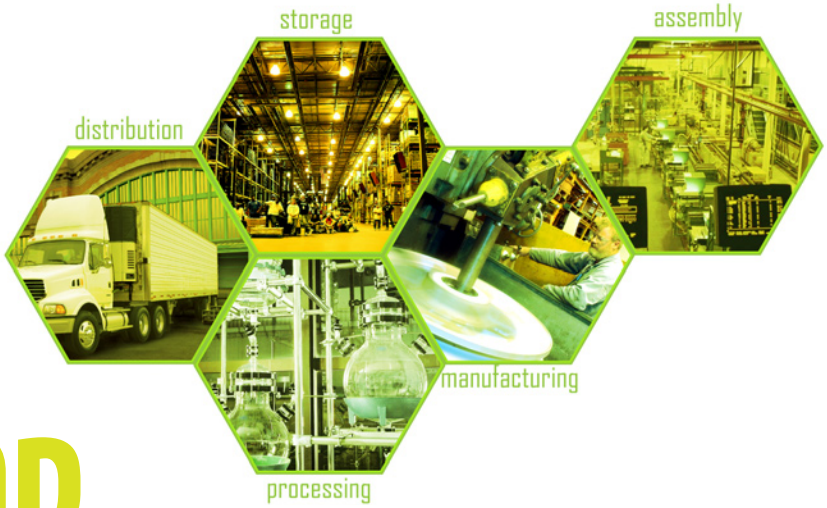
2: DEMONSTRATE A COMMITMENT TO SUSTAINABILITY.

Greening Rubbertown is not merely desirable – it is vital to the district's survival and success into the future. Thousands of good jobs and millions of dollars in local revenue will depend on the ability of Rubbertown businesses to anticipate and adapt to ever more stringent environmental regulation. Legislation aimed at limiting greenhouse gas emissions is gaining momentum with state and federal lawmakers around the nation. It is critical that the corridor's manufacturing operations begin to progressively upgrade to sustainable methods of energy use, material flows and waste management, water use, and integrating and supporting natural systems. Of equal importance is the close proximity of Rubbertown plants to the dense residential neighborhoods of West Louisville – communities that value clean air, open space and river access as much as job opportunities.

KEY RECOMMENDATIONS INCLUDE:

- Explore leasing space on top of large-floorplate facilities for LG&E solar panel arrays
- Create a Rubbertown energy profile to assess opportunities for energy cascading, co-generation, alternative energy & efficiency capacity
- Explore the use of slack space around tanks and buildings – as well as the tops and sides of the tanks themselves – for habitat restoration and bioremediation
- Implement multifunctional Stormwater Best Management Practices (BMPs)

BIOREMEDIATION IN SLACK SPACE AND RAPTOR NESTING IN THE TANK FARMS



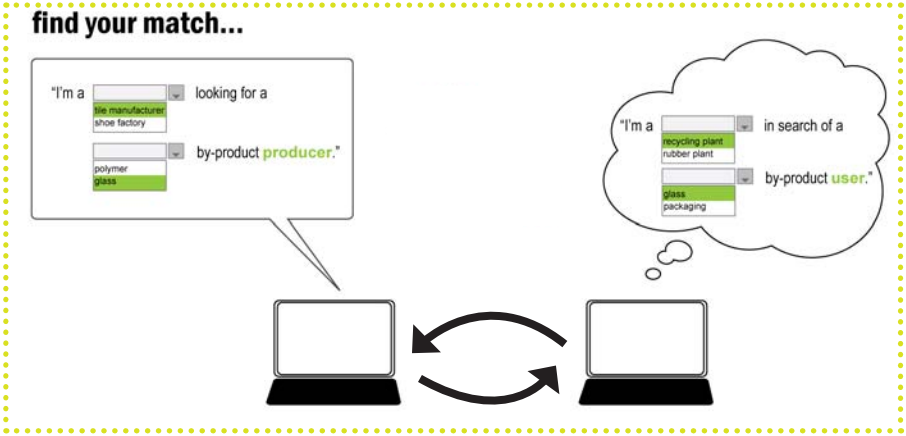
3: LEVERAGE OPPORTUNITIES FOR COOPERATION & SYNERGY.

Shared facilities provide competitive advantages for savvy manufacturers. Forging partnerships to enhance the bottom line, leverage strengths and/or compensate for limited resources has become a routine element of corporate business strategies in recent years. Overlap in the operation of Rubbertown companies is an opportunity to reduce redundancy – cutting costs and increasing competitiveness. **By-product synergy (BPS)** is the practice of matching under-valued by-products or waste streams with potential users, helping to create new revenues or savings for the organizations involved while simultaneously addressing social and environmental impacts. Potential **business synergies** can also be realized in the Rubbertown Corridor by attracting outside firms that could benefit from plant expertise, infrastructure, products or processes, or could provide service or supply functions to the plants themselves.

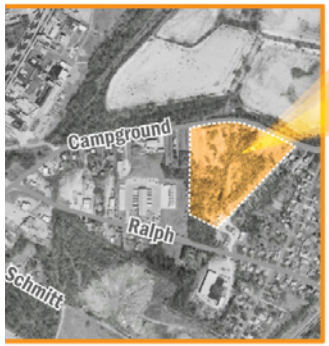
KEY RECOMMENDATIONS INCLUDE:

- Evaluate the potential of Rubbertown Cooperative Resource Center
- Pursue construction of a shared barge facility off Bells Lane
- Organize an inter-company panel to identify opportunities to combine redundant functions or processes
- Create a SynergyMap Tool to document and help match the by-products of Rubbertown businesses to potential users.
- Develop partnerships between regional agencies to implement a Louisville Regional BPS Network
- Recruit firms whose core businesses synergize with those of Rubbertown or Riverport companies

SYNERGY MAP TOOL!



POTENTIAL FOR A COOPERATIVE RESOURCE CENTER



*example from Phillips Eco Enterprise Center

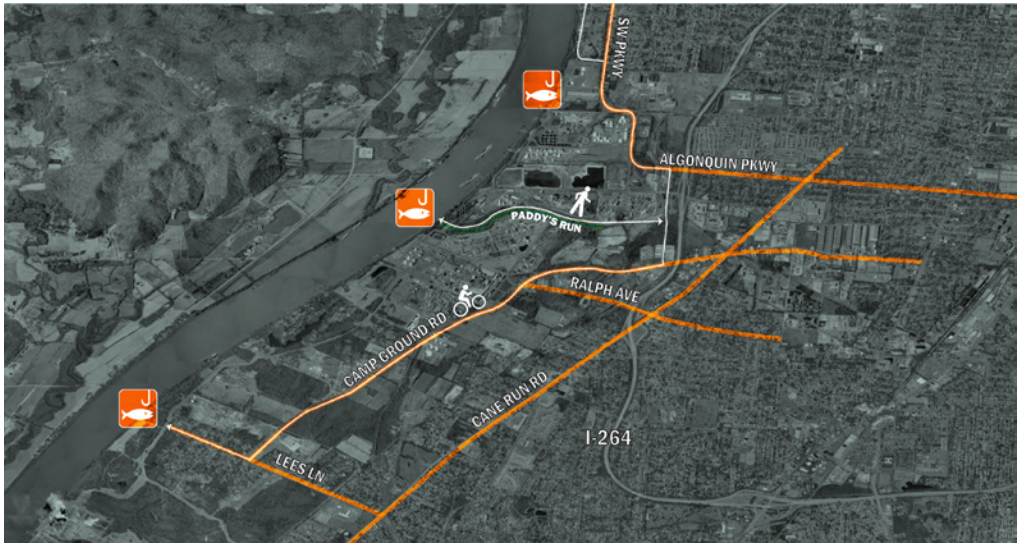
4: IMPROVE INFRASTRUCTURE– IMPROVE QUALITY OF LIFE.

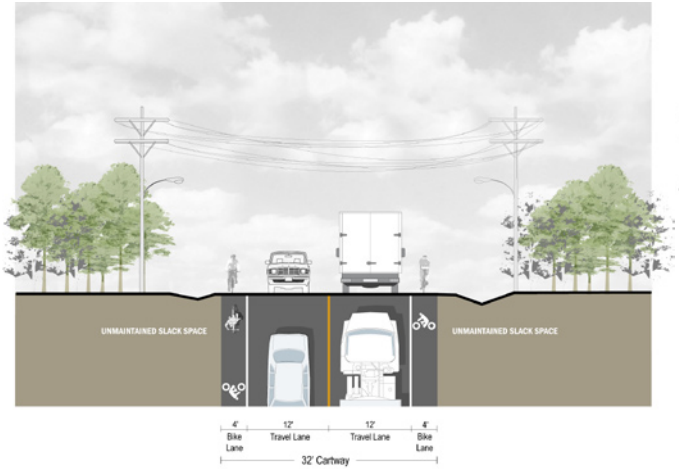
Infrastructure impacts the quality of life dramatically in Rubbertown. Often rural in character, the arterial and feeder streets serving Rubbertown are narrow and carry heavy tractor-trailer traffic. Combined with a number of freight rail crossings in the area and the virtual wall formed by I-264, conditions can be unwelcoming and even dangerous for pedestrians, bicyclists, and residential traffic. A lack of lighting and sidewalks further exacerbate these conditions. Recommendations in this section include short-term, achievable improvements – aimed at improving the day-to-day experience of residents and workers in the Corridor coupled with long-term initiatives that will require advocacy, partnerships and significant funding.

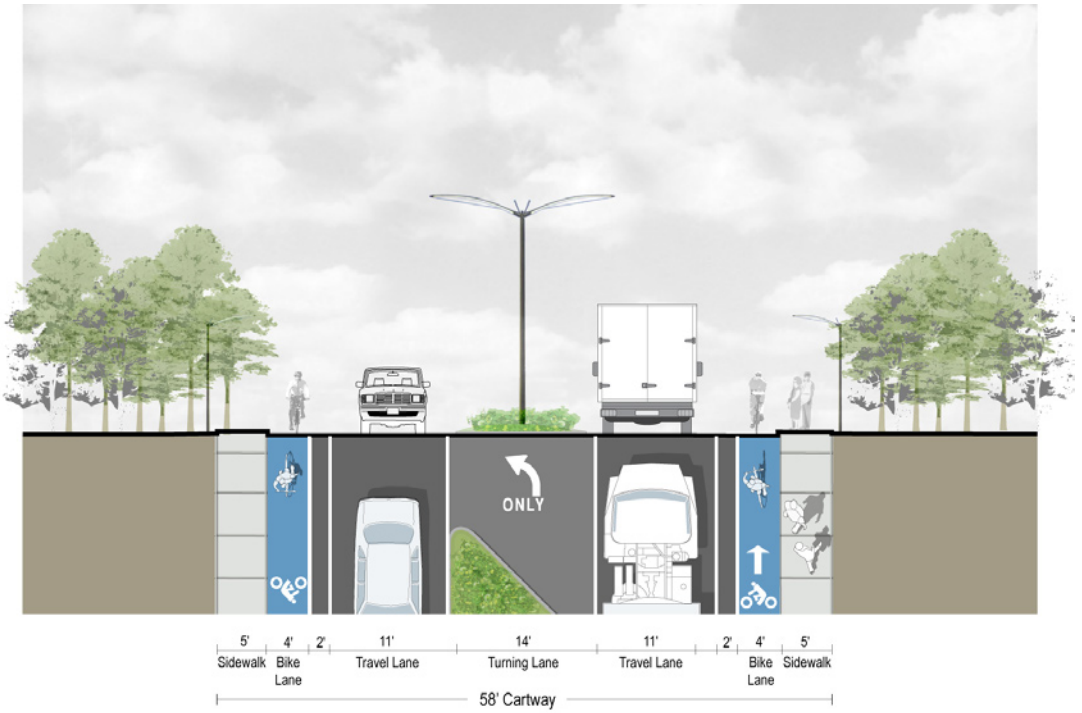
KEY RECOMMENDATIONS INCLUDE:

- Establish a web-based mapping program to track quality-of-life issues such as illegal dumping, flooding, graffiti, lighting or odor
- Explore utilizing Louisville Metro Government discretionary funding or DOE grants to fund solar lighting installation
- Provide public access to the River
- Extend sewer infrastructure south
- Develop landscape design guidelines for frontage road
- Improve and widen Camp Ground Road

POTENTIAL RIVER ACCESS POINTS







POTENTIAL CAMP GROUND ROAD IMPROVEMENTS BETWEEN LEES AND RALPH. LEFT: EXISTING ROADWAY.
LEFT: EXISTING ROADWAY RIGHT: WIDENED WITH SIDEWALKS, BUFFERED BIKE LANES AND PLANTED MEDIAN, SOLAR LIGHTING.

5: PURSUE A SUSTAINABLE BUSINESS DEVELOPMENT STRATEGY.

An effectively articulated business development strategy is key to retaining and growing Rubbertown companies that provide quality employment and revenue to the West Louisville area. The sustainability of any recruitment and retention policy will hing upon the compatibility of targeted firms with surrounding communities. In addition to pursuing and retaining companies that can synergize with Rubbertown's natural assets, provide good employment to area residents, and work closely with area neighborhoods to continuously improve quality of life for both employees and residents, connecting these companies with the region's job training centers and programs will be critical to maintaining the corridor's competitive edge.

KEY RECOMMENDATIONS INCLUDE:

- Recruit companies within industries that would benefit from business clusters in Rubbertown
- Utilize federal and state incentive programs to recruit companies to and retain companies in Rubbertown
- Work with corporate headquarters to assist existing Rubbertown businesses
- Tap into workforce training programs

TRAINED IN RUBBERTOWN!

6: PURSUE CATALYTIC LAND DEVELOPMENT OPPORTUNITIES.

Rubbertown remains a viable industrial district despite its unique challenges. For Rubbertown to thrive well into the future, a clear vision must be articulated to guide future physical development. The recommendations in this section consider the Rubbertown Corridor as three separate and distinct sub-districts: the northern "Parkway" area, the central "Gateway" area, and large area south of Kramers Lane and Senn Road that remain relatively undeveloped, apart from the two established residential communities. These recommendations are targeted toward guiding new development, consistent with the long-term vision for Rubbertown as a greened, integrated industrial park that capitalizes on its excellent infrastructure and which will seamlessly co-exist with its residential neighbors.

KEY RECOMMENDATIONS INCLUDE:

- Create an infill development plan for underutilized sites along Algonquin / SW Parkway
- Master-plan the heart of Rubbertown, centered on Campground Road
- Spur development of an Eco-Distribution Park in Rubbertown South
- Explore the opportunities to recycle existing landfill sites for new industrial development
- Explore with Rubbertown companies the possibilities of co-siting
- Facilitate the transition of select properties away from residential use

OPPORTUNITIES FOR CO-SITING

ECO-DISTRIBUTION CENTER

sub-area 1
the parkway

NEAR-TERM OPPORTUNITIES
- READY ACQUISITION
- LIMITED PRE-DEVELOPMENT
- HIGHLY VISIBLE
- HIGHLY ACCESSIBLE

LONG-TERM OPPORTUNITIES
- SUBDIVISION / ASSEMBLY REQUIRED
- MORE EXTENSIVE PRE-DEVELOPMENT
- LESS VISIBLE
- LESS ACCESSIBLE

ALTERNATIVE USE?
- DEVELOP-ABLE IN TRADITIONAL SENSE?
- COMMERCIAL / SERVICE UTILIZATION?

sub-area 2
rubbertown gateway

NEAR-TERM OPPORTUNITIES
- READY ACQUISITION
- LIMITED PRE-DEVELOPMENT
- HIGHLY VISIBLE
- HIGHLY ACCESSIBLE

LONG-TERM OPPORTUNITIES
- SUBDIVISION / ASSEMBLY REQUIRED
- MORE EXTENSIVE PRE-DEVELOPMENT
- LESS VISIBLE
- LESS ACCESSIBLE

ALTERNATIVE USE?
- RECYCLING OF LANDFILL LAND?
- TRANSITIONING LIMITED RESIDENTIAL?

TARGET RUBBERTOWN SUB-DISTRICTS

ASRC: 1950s.

01

RUBBERTOWN'S CONTRIBUTION

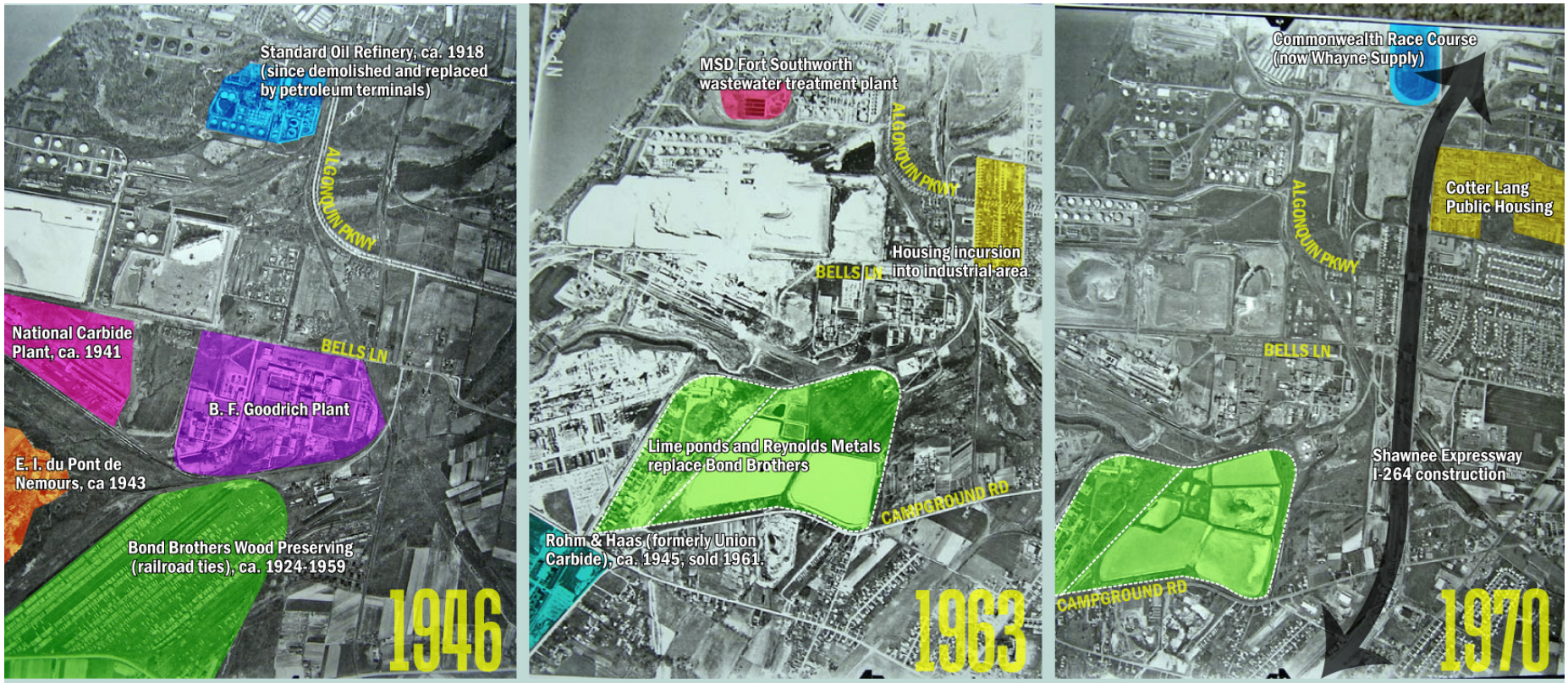
01 RUBBERTOWN'S CONTRIBUTION

HISTORY

Rubbertown's industrial presence began with the establishment of the Standard Oil Refinery in 1918 and the Bond Brothers facility to manufacture railroad ties in 1924. But while these industries set a precedent, it was not until World War II that Rubbertown was intensively developed for chemical manufacturing. The name "Rubbertown" comes from this era, when Japanese control of natural rubber supplies compelled the U.S. government to select the area for synthetic rubber manufacture to support the war effort. This rural, inexpensive area of unincorporated west Jefferson County had easy access to roads, rail lines, the Ohio River (for barge transport and water) and raw material sources necessary for synthetic rubber manufacture. The land was cheap and taxes low. Initially, the federal government contracted with three private companies – National Carbide Corp., B.F. Goodrich, and E.I. du Pont de Nemours & Co. - to build the manufacturing plants that the companies would then operate (Union Carbide and National Synthetic Rubber joined the complex a few years later). However, after the close of the war, the companies bought the plants back from the government and began to operate them commercially for the first time.

A number of sales, mergers and acquisitions have shaped the commercial landscape of the Corridor over the years. As early as 1955, the National Synthetic Rubber plant was auctioned off to a consortium of 20 rubber companies (now known as American Synthetic Rubber Co., the company is a subsidiary of Michelin). In 1961, the Union Carbide Plant was sold to Rohm & Haas Co. (and again recently to Dow Chemical) and re-tooled from a 1,3 butadiene production unit to begin manufacturing acrylic plastic. Arkema, once a part of the Rohm & Haas plant, began production of Plexiglas in 1968. National Carbide, later Airco Carbide, was sold to private investors to form the Carbide Graphite Group, which filed for bankruptcy in 2001. The plant has since been re-formed under local ownership as Carbide Industries, LLC. The former B.F. Goodrich plant on Bells Lane has experienced a multitude of ownership changes with parts of the original plant currently owned and operated by four different companies – Lubrizol, PolyOne, Zeon Chemical, and OxyVinyls. Most recentlly, Rohm & Haas become a wholly-owned subsidiary of Dow Chemical in 2009.

FIG 2 EVOLUTION OF RUBBERTOWN



In 1941, the US Office of War Production contracted with National Carbide (carbide/acetylene), B.F. Goodrich (synthetic rubber), and E.I. du Pont de Nemours (neoprene) to construct new plants to support the war effort. In 1945, Union Carbide built a plant (now Rohm & Haas) to manufacture butadiene from grain alcohol that was piped to Rubbertown from distilleries in Louisville, and National Synthetic Rubber opened a plant to make styrene-butadiene rubber for tires.

In 1961, the Union Carbide Plant was sold to Rohm & Haas Co. and the 1,3 butadiene production unit was re-tooled to make acrylic plastic. Surrounding open space shrinks with new residential development.

In 1979, Borden Chemical Inc. (now Hexion) opened a facility in the southern end of the corridor to produce formaldehyde, resins, and adhesives.

Source: RCAC, West Jefferson Coummunity Task Force.

SAMPLING OF GOODS PRODUCED WITH RUBBERTOWN PRODUCTS

RUBBERTOWN MAKES, THE WORLD GAINS

While the roots of the district lay in the manufacture of synthetic rubber and its component chemicals, the Rubbertown of today manufactures a dizzying array of products that are used in the production of thousands of other products, and is even a growing regional center of so-called “green manufacturing” jobs, with the ramping up of Tedlar (a primary component of solar panels) production at DuPont.

ECONOMIC IMPACT

The Rubbertown companies contribute a great deal to the local economy of West Louisville and the regional economy of Greater Louisville. The following nine companies – including the some of the largest plants in Rubbertown- **directly employ nearly 1,400 people*** – including managers, engineers, operators, maintenance, and clerical support – from both Kentucky and Indiana. Their combined **payroll exceeds $130 million annually.**

- Carbide Industries – 120 employees and annual payroll of $7 million.
- Dow Chemical – 120 employees and annual payroll of $22 million.
- DuPont – 150 employees, plus 100 contractors and annual payroll of $13 million
- Arkema – 73 employees and annual payroll of $6.3 million
- Hexion – 223 employees and annual payroll of $17 million.
- Lubrizol – 125 employees and annual payroll of $10.5 million.
- Zeon Chemical – 110 employees and annual payroll of $19 million.
- American Synthetic Rubber Co. – 350 employees

In addition to the Rubbertown companies' direct jobs and wages (with many of these jobs paying more than $20/hour and available to those without a college degree), there are indirect and induced jobs and wages created by businesses which supply goods and services to these companies (truck drivers, barge pilots, railroad engineers, and warehouse workers), and by the spending of direct and indirect employees. This "multiplier", as determined by AECOM Economics, means that for every job that exists in Rubbertown, another 4.4 are supported in connection with it. This multiplier effect translates to approximately 6,030 additional jobs – **a grand total of 7,400 good jobs that Rubbertown industries support in the Greater Louisville region.**

* source: Louisville Chemistry Partnership website & company interviews

1400 JOBS =

DUPONT®
ARKEMA
The world is our inspiration
Carbide Industries LLC
HEXION™
Specialty Chemicals
DOW®
Lubrizol
ASRC
ZEON CHEMICALS L.P.

Hexion today

02

LOOKING AT THE INDUSTRIAL DISTRICT

02 LOOKING AT THE INDUSTRIAL DISTRICT

THE RUBBERTOWN EXPERIENCE

The sights, sounds, smells, the perceived character, mix of uses and identity of the area are the first things one experiences and cement a lasting impression of Rubbertown as a place. The physical experience underpins Corridor residents' and workers' day-to-day reality.

Depending upon where one enters Rubbertown, the "gateway" experience varies. From the north, on the Southwestern Parkway, leafy single-family residential neighborhoods and parks give way suddenly and dramatically to large clusters of petroleum storage tanks flanking the road, freight rail crossings and seemingly open parcels of land. Entering from the east on Bells Lane, the transition is abrupt as the passage under the I-264 overpass strongly delineates the residential neighborhoods from a sprawling industrial complex. Since this gateway dead-ends in the inactive Paddy's Run generating station, there is little through-traffic and the lane is dominated by trucking and employees travelling to and from the companies. The only linkage from the northern reaches of the district to the Bells Lane area is along the residential 40th Street.

Eli Wesley Trucking on Campground Road

The entry from Campground Road west of Cane Run is a more typical gateway experience for visitors to Rubbertown: a jumble of homes, vacant wooded land, trucking operations and recyclers line the corridor before finally opening out to the manicured lawns and parking lots of DuPont and Dow in the heart of the manufacturing area. Ralph Avenue – the primary gateway to Rubbertown for those exiting off I-264 – is also a poorly-defined entryway with several trucking, supply, and light industrial businesses interspersed with homes. At the far southern end of the Corridor, access via Lees Lane is primarily residential in character mixed with some wooded vacant land.

American Synthetic Rubber on Campground Road

Entering Rubbertown on Ralph Avenue

The land uses in the heart of Rubbertown are dominated by manufacturing, industrial services (especially trucking, truck washing, and tank cleaning services) and distribution. The stacks, tanks, and pipes provide an unmistakably industrial skyline on the west side of Campground Road and along Bells Lane. Petroleum tank farms are numerous and large-scale infrastructure – such as the high-tension line towers that traverse the corridor from area generating stations, pipelines, and open-air culverts – criss-cross the landscape. Trucks dominate local traffic and tanker cars line the rail yards and plant sidings.

FIG 3 RUBBERTOWN'S PHYSICAL EXPERIENCE

But other land uses quietly persist amongst the hubbub of industrial and trucking activity. Once known as “beantown” before the emergence of the plants that would give the Corridor its new moniker, scattered plots of farming and large gardens can still be found along the central and southern reaches of Campground Road, and along Lees Lane, Bramers Lane, and Kramers Lane.

Horse Pasture off of Lees Lane

Farming off of Linda Road

Riverside Gardens

There are two established neighborhoods in Rubbertown. Lake Dreamland, originally conceived as a resort community on the Ohio River, sits secluded on the other side of the floodwall south of the majority of Rubbertown plants. Riverside Gardens, at the end of Lees Lane and abutting the Hexion plant to the south, while more robustly developed than Lake Dreamland, nonetheless remains isolated by large vacant or industrial properties on three sides. Other residential areas exist very near their industrial neighbors: 40th Street west of I-264, Beech Drive, the River Oaks and Pioneer mobile home parks, as well as scattered properties along Ralph Avenue and Campground Road.

Shared use path atop floodwall

Despite more than five miles of Ohio River frontage, actual access to the river in the Rubbertown Corridor is quite rare. In fact, the river itself is rarely even visible due to the floodwall protecting most of the area. Besides a lack of river access, many local "back roads" in the area, such as Senn Road, Bramers Lane, Hughes Road, and Schmitt Road are marked by a sense of dislocation related to often unclear land uses, property boundaries, dumping, fencing and a lack of visibility. Identity is a problem, in fact, for the entire Rubbertown Corridor. No clear boundaries exist for the "industrial" area of the Corridor which is represented by the fine grained mix of homes, industry, and other undefined land uses described above.

Inactive Paddy's Run generating station on Bells Lane

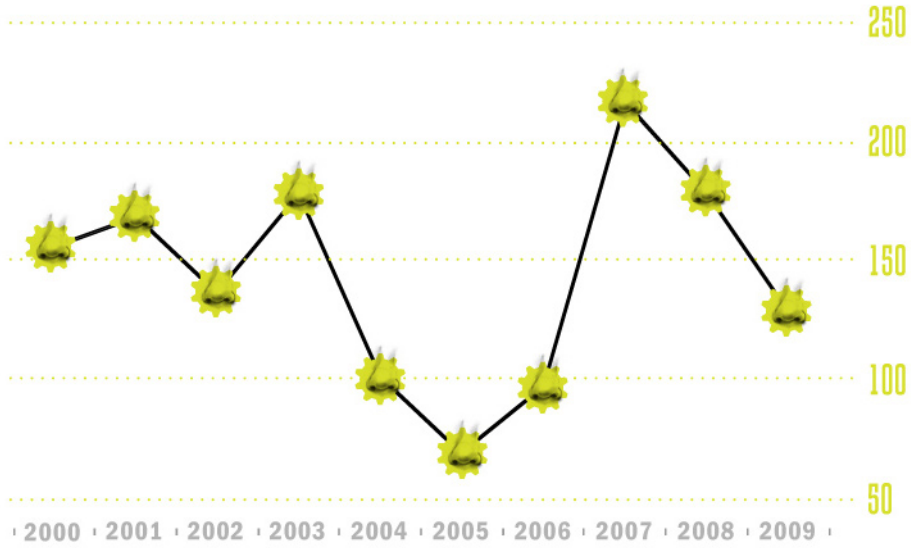


FIG 4 NUMBER OF ODOR COMPLAINTS MADE TO APCD 2000-2009

A major factor in the experience of the Corridor is the odor and noise that vary widely depending on location. Truck traffic contributes the majority of the noise pollution in the area and is especially prominent along Campground Road. Odors can be detected at various levels in many locations inside and outside of the Rubbertown Corridor. The accompanying trend chart indicates that the number of odor complaints have varied over the past decade, with a distinct decline in complaints from 2003-2005. A spike in complaints were recorded in 2007 which has since subsided bringing to total number of complaints in the area back to 2004 levels. Rubbertown companies accounted for 4% of the named suspected sources of the reported odors over the 10 year period, with the MSD Morris-Forman Wastewater Treatment Plant accounting for 15%, and 57% unknown.

DEMOGRAPHIC & ECONOMIC TRENDS ANALYSIS

The demographic and economic trends analysis establishes the context within which planning for the Rubbertown Economic Development Strategy can occur. This analysis considers socio-economic trends and projections for the resident population, employment trends, and industry projections. The conclusions are based on extensive data analysis, interviews with local real estate professionals, and stakeholder outreach.

DEMOGRAPHIC

Population

Rubbertown's population has remained stable since 2000, growing from 8200 residents in 2000 to a projected 8300 residents in 2014. During the same period of time Jefferson County grew at a slow and steady annual rate or .4 percent. Growth in Jefferson County population and income levels is not shared by West Louisville, which has experienced a steady decline of .4 percent annually since 1990. Figure 5 details population growth trends (historic and projected) for Rubbertown, West Louisville, and Jefferson County from 1990 to 2014.

DEMOGRAPHIC TRENDS

					ANNUALIZED GROWTH	
	1990	2000	2009	2014	2000-2009	2009-2014
RUBBERTOWN						
POPULATION	10,699	8,187	8,234	8,310	0.1%	0.2%
HOUSEHOLDS	3,619	3,261	3,360	3,416	0.3%	0.3%
AVERAGE HOUSEHOLD INCOME	$21,539	$36,734	$45,052	$46,735	2.3%	0.7%
WEST LOUSVILLE						
POPULATION	141,317	134,078	129,823	128,620	-0.4%	-0.2%
HOUSEHOLDS	55,389	54,624	54,007	53,917	-0.1%	0.0%
AVERAGE HOUSEHOLD INCOME	$22,196	$33,243	$41,839	$43,440	2.6%	0.8%
JEFFERSON COUNTY						
POPULATION	664,937	693,604	718,412	731,056	0.4%	0.3%
HOUSEHOLDS	264,138	287,012	302,477	309,648	0.6%	0.5%
AVERAGE HOUSEHOLD INCOME	$35,079	$53,308	$69,624	$72,321	3.0%	0.8%
MSA						
POPULATION	1,076,964	1,184,935	1,286,289	1,339,358	0.9%	0.8%
HOUSEHOLDS	412,166	471,073	520,375	544,806	1.1%	0.9%
AVERAGE HOUSEHOLD INCOME	$34,121	$52,768	$67,654	$69,883	2.8%	0.7%

FIG 5 DEMOGRAPHIC TRENDS
SOURCE: ESRI, US CENSUS BUREAU, AECOM

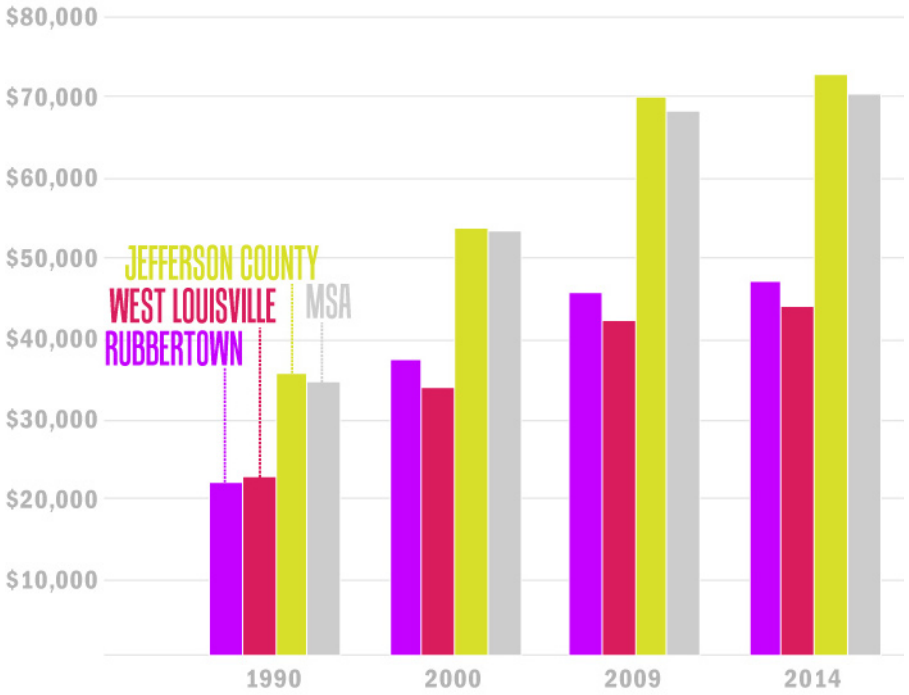


FIG 6 INCOME 1990-2014
SOURCE: ESRI, US CENSUS BUREAU, AECOM

Income

An analysis of income distribution clearly reveals a disparity between West Louisville and Jefferson County. The average household income in Rubbertown and West Louisville are similar. The average household income in Jefferson County was $28,000 higher, almost 1.6 times greater, than West Louisville. Moreover, the average household income levels in Jefferson County grew at a faster rate than West Louisville between 2000 and 2009. Average household incomes in West Louisville and Jefferson County are projected to grow at a rate of 0.8 percent through 2014.

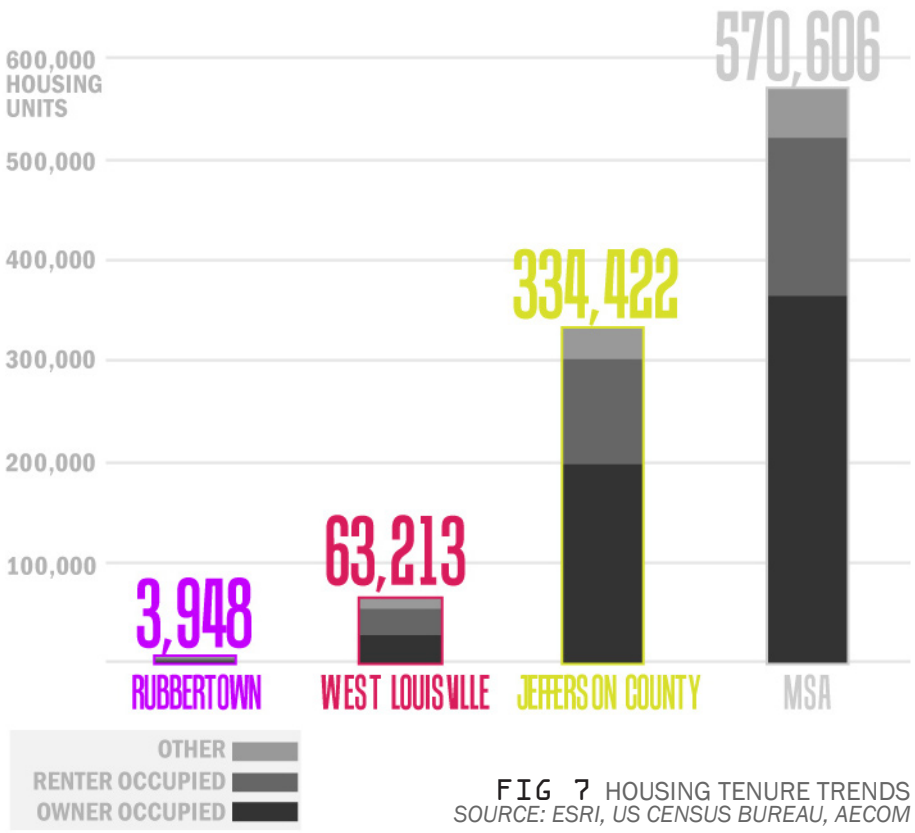


FIG 7 HOUSING TENURE TRENDS
SOURCE: ESRI, US CENSUS BUREAU, AECOM

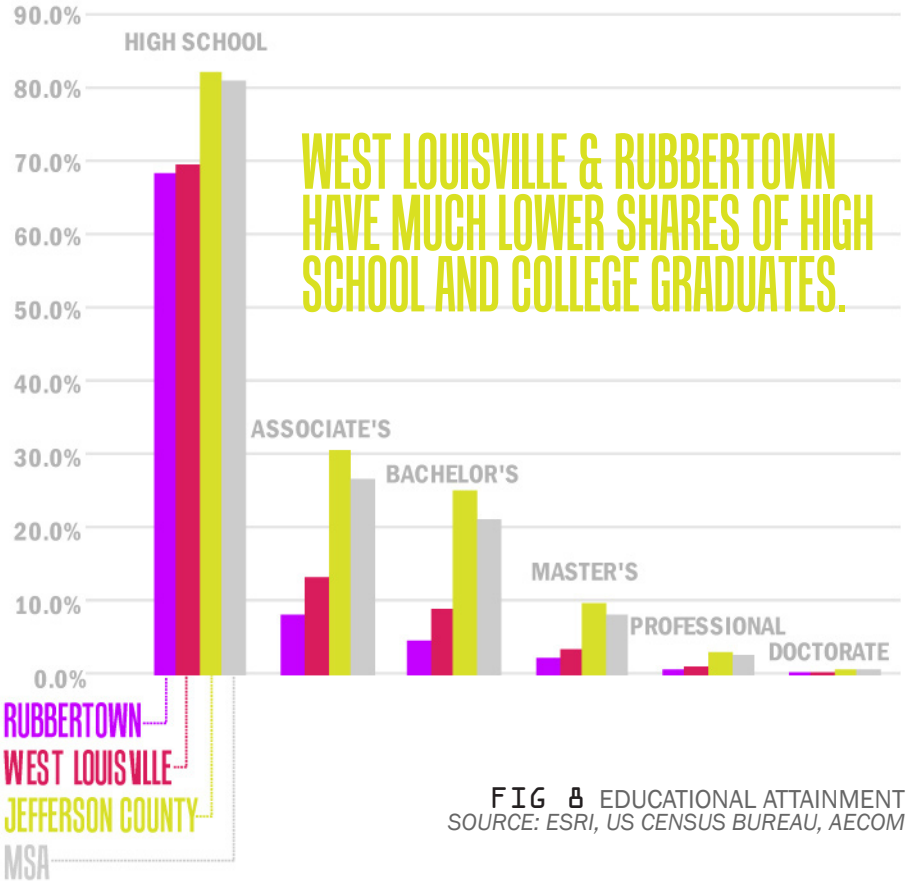


FIG 8 EDUCATIONAL ATTAINMENT
SOURCE: ESRI, US CENSUS BUREAU, AECOM

Housing Tenure

Home ownership rates are a key indicator of neighborhood stability. West Louisville and Rubbertown have significantly lower owner occupancy rates and higher shares of renter occupied and other (vacant) housing units as compared to Jefferson County. In 2009, 44 percent of housing units in West Louisville were owner occupied, as compared to 59 percent owner occupancy across Jefferson County. During the same year, 15 percent of all housing units in Rubbertown and West Louisville were vacant, as compared to 10 percent vacancy in Jefferson County.

Educational Attainment

Educational attainment is an indicator of workforce capacity. West Louisville and Rubbertown have significantly lower shares of high school and college graduates, as compared to Jefferson County and the MSA. The high school graduation rate in Rubbertown and West Louisville was approximately 70 percent in 2000, as compared to an 80 percent high school graduation rate in Jefferson County and the MSA. The disparity in educational attainment between Rubbertown and West Louisville, as compared to Jefferson County and the MSA, is even more pronounced when considering college graduation rates. In Rubbertown and West Louisville, five and nine percent of the population, respectively, have graduated from college. In Jefferson County and the MSA, the respective college graduation rates are 25 and 21 percent.

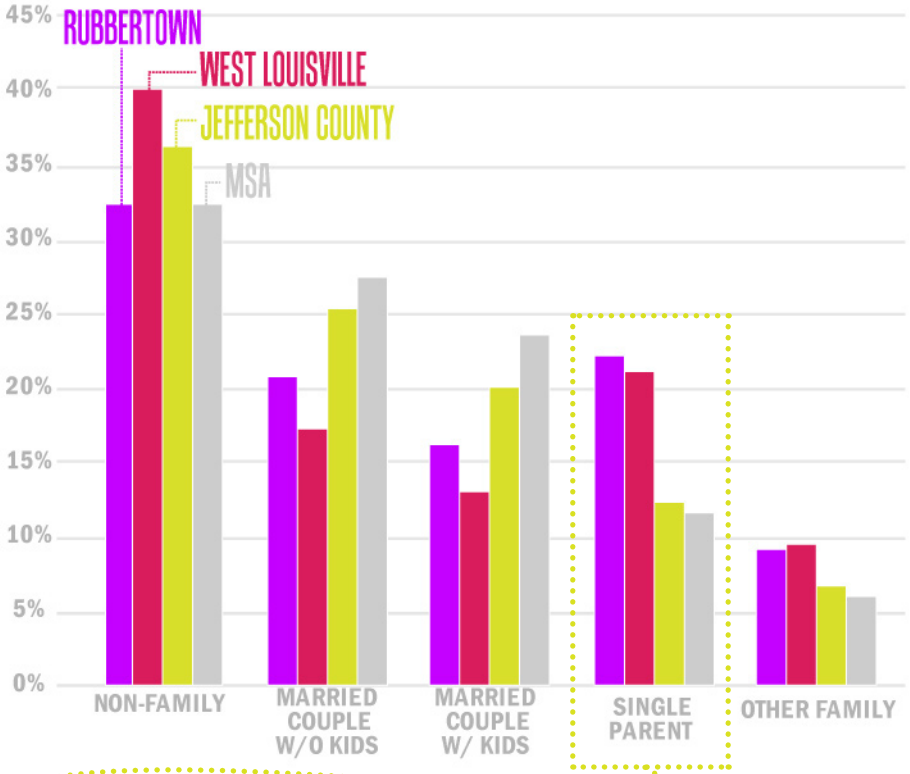


FIG 9 HOUSEHOLD COMPOSITION
SOURCE: ESRI, US CENSUS BUREAU, AECOM

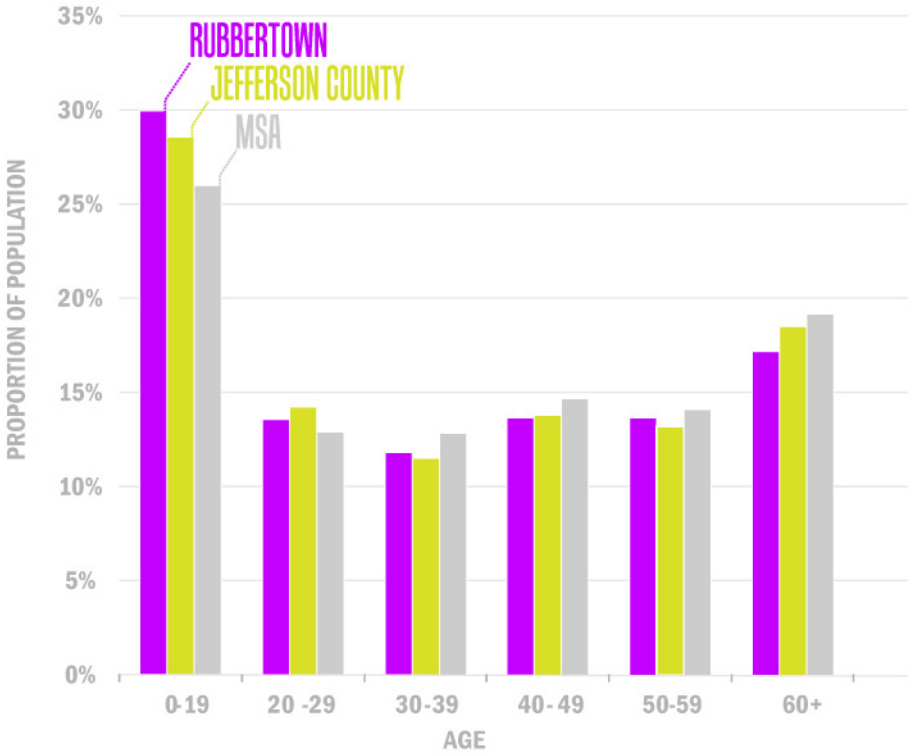


FIG 10 AGE DISTRIBUTION
SOURCE: ESRI GIS

WEST LOUISVILLE & RUBBERTOWN HAVE SIGNIFICANTLY HIGHER SHARES OF SINGLE PARENT HOUSEHOLDS

Household Composition [GRAPHIC: Household Composition]
Approximately 20 percent of the households in West Louisville and Rubbertown are single parent households. The share of single parent households is almost two times larger in Rubbertown and West Louisville than in Jefferson County and the MSA. The abundance of single parent households suggests a strong need for after-school, summer, and other family assistance programs.

Age Distribution
Age distributions within Rubbertown, and Jefferson County, and the Metro Area are similar, as seen in Figure 10. For all the three geographies, the majority (53 to 55 percent) of the population is between the ages of 20 and 59, which represents the age range that predominantly comprises the workforce. Figure 10 illustrates the 2009 age distribution among six demographic age brackets. Rubbertown has a slightly higher share of residents who are younger than twenty, and a slightly lower share of residents older than 60.

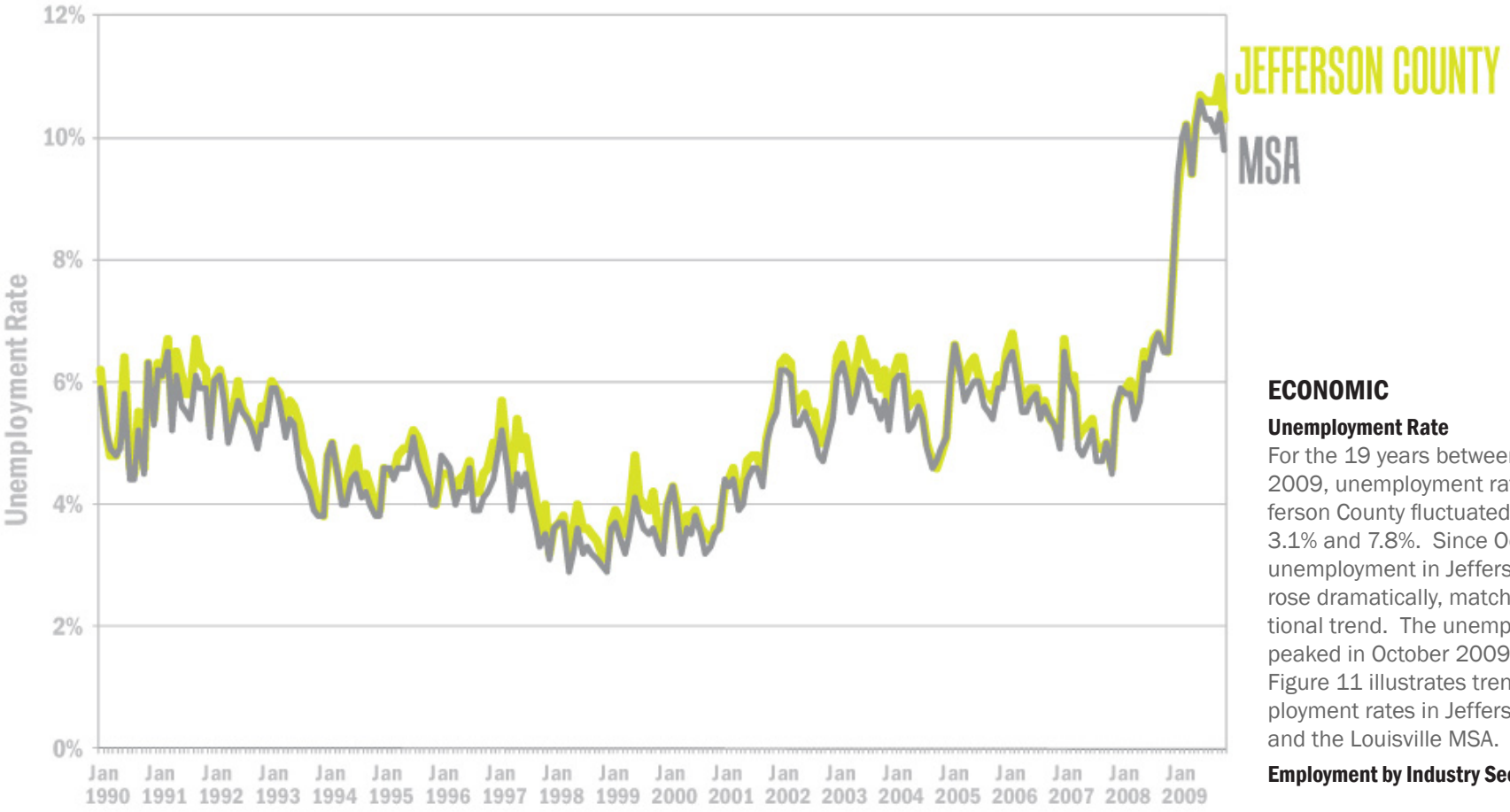


FIG 11 JEFFERSON COUNTY AND US UNEMPLOYMENT RATES (1990-2009)
SOURCE: BUREAU OF LABOR STATISTICS

ECONOMIC

Unemployment Rate

For the 19 years between 1990 and 2009, unemployment rates in Jefferson County fluctuated between 3.1% and 7.8%. Since October 2009, unemployment in Jefferson County rose dramatically, matching the national trend. The unemployment rate peaked in October 2009 at 11.0%. Figure 11 illustrates trends in unemployment rates in Jefferson County and the Louisville MSA.

Employment by Industry Sector

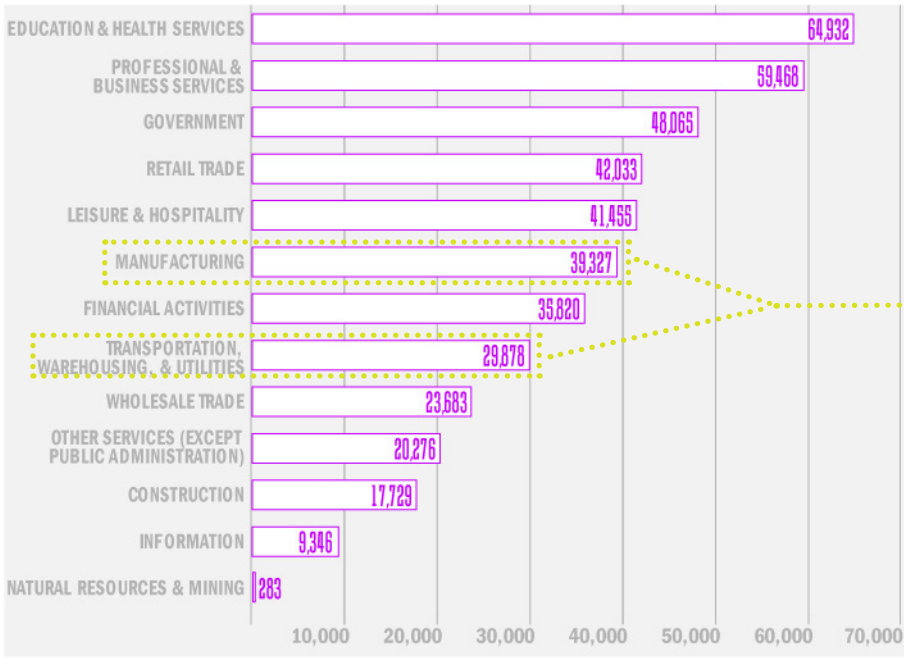


FIG 12 JEFFERSON COUNTY EMPLOYMENT BY INDUSTRY, 2009)

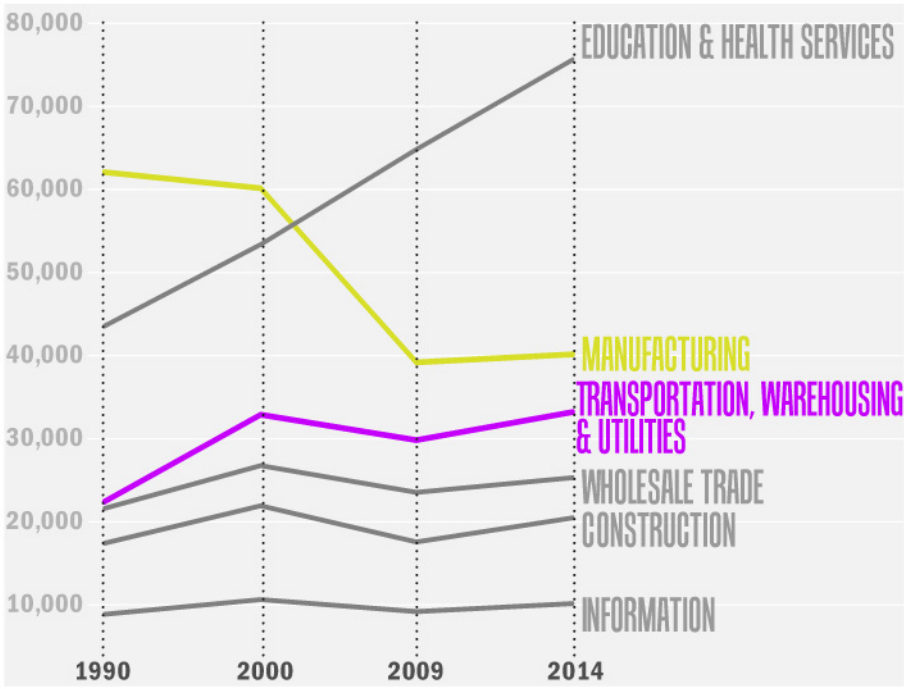


FIG 13 EMPLOYMENT GROWTH TRENDS

Figure 12 illustrates the relative scale of all private sector industries in Jefferson County, as measured by total employment. Education and Health Services and Professional and Business Services represented the two largest sectors. Manufacturing and Transportation, Warehousing, and Utilities, the two industries that are most active in Rubbertown, have a combined employment of 69,000, which represented 16 percent of the workforce in Jefferson County in 2009.

MANUFACTURING & TRANSPORTATION, WAREHOUSING AND UTILITIES SECTORS REPRESENTED 16% OF JEFFERSON COUNTY JOBS IN 2009.

Employment Growth Trends [GRAPHIC: Employment Growth Trends]
Private sector employment in Jefferson County declined at an average annual rate of 0.8 percent between 2000 and 2009. However, this trend is expected to reverse, with annual employment growth of 1.8 percent projected through 2014.

Manufacturing employment shrank at an average annual rate of 4.6 percent between 2000 and 2009, which represented a loss of about 20,000 jobs in Jefferson County. However the industry's size appears to have stabilized and slight growth of 0.5 percent annually is projected through 2014.

Transportation, Warehousing, and Utilities is a growth industry in Jefferson County, growing 1.5 percent annually from 1990 to 2009. While the industry experienced a slight decline in the decade between 2000 and 2009, the growth trend is projected to continue through 2014. By 2014, Jefferson County is projected to support 33,400 Transportation, Warehousing, and Utilities jobs.

INDUSTRY	EMPLOYMENT 2009	EMPLOYMENT GROWTH 1990 - 2009
Transportation Equipment Manufacturing	**6,033**	**-1.2%**
Fabricated Metal Product Manufacturing	**5,185**	**0.0%**
Food Manufacturing	**4,521**	**-2.3%**
Electrical Equipment, Appliance, and Component Manufacturing	**4,416**	**1.4%**
Chemical Manufacturing	3,162	-3.3%
Printing and Related Support Activities	**3,105**	**-2.4%**
Machinery Manufacturing	2,785	-2.9%
Paper Manufacturing	**1,735**	**-1.7%**
Beverage and Tobacco Product Manufacturing	1,494	-7.6%
Miscellaneous Manufacturing	**1,349**	**-0.6%**
Primary Metal Manufacturing	987	-3.2%
Nonmetallic Mineral Product Manufacturing	903	-3.7%
Plastics and Rubber Products Manufacturing	899	-6.3%
Furniture and Related Product Manufacturing	892	-2.4%
Wood Product Manufacturing	718	-4.3%
Computer and Electronic Products	692	2.1%
Textile Product Mills	282	-7.7%
Apparel Manufacturing	84	-10.0%
Textile Mills	40	-6.4%
Petroleum and Coal Products Manufacturing	39	-8.5%
Leather and Allied Product Manufacturing	7	-8.5%

Source: Economy.com; National Association of Realtors; AECOM

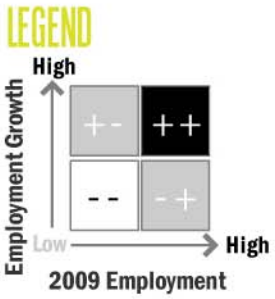


FIG 14 TARGET MANUFACTURING SUB SECTORS
SOURCE: ECONOMY.COM, NATIONAL ASSOCIATION OF REALTORS, AECOM

SECTORAL

Manufacturing Sector Trends

Manufacturing is a cross-cutting industry sector that intersects with a variety of specialized industries, including plastics, chemicals, furniture, food, electronics, and more. Manufacturing is one of the engines of the Rubbertown economy, therefore AECOM conducted an in-depth analysis of the manufacturing sector in order to identify growth opportunities within manufacturing sub-sectors. AECOM evaluated employment levels and growth trends for each of the manufacturing industry subsectors. Opportunity sub sectors are identified as those with both higher shares of employment and employment growth rates that exceed average manufacturing employment growth rate from 2000 to 2009, and are represented by the black rows in the chart on the left.

ICIC Growth Clusters

In 2001, Initiative for a Competitive Inner City (ICIC) was commissioned by the Louisville Development Authority to develop the West Louisville Competitive Assessment and Strategy Project, and in 2007, Louisville Metro commissioned ICIC to update the original report. Preliminary findings from the ICIC report update suggest that the following industries are the most promising clusters for West Louisville:

PLASTICS

AUTOMOTIVE

BUILDING FIXTURES

PREFABRICATED ENCLOSURES

ANALYTICAL INSTRUMENTS

DISTRIBUTION SERVICES

BUSINESS SERVICES

EQUIPMENT & SERVICES

MEDICAL DEVICES

MOTOR DRIVEN PRODUCTS

ENTERTAINMENT

CHEMICAL PRODUCTS

HEAVY CONSTRUCTION

METAL MFG

PUBLISHING AND PRINTING

PROCESSED FOODS

FINANCIAL SERVICES

	JOBS			EARNINGS	SPENDING
OCCUPATION	DIRECT IMPACTS	INDIRECT/INDUCED IMPACTS	TOTAL IMPACTS	TOTAL IMPACTS	TOTAL IMPACTS
UTILITIES	1	1.9	2.9	131,996	821,919
CONSTRUCTION	1	0.9	1.9	59,191	245,253
WOOD PRODUCT MANUFACTURING	1	0.8	1.8	52,368	293,398
NONMETALLIC MINERAL PRODUCT MANUFACTURING	1	1.9	2.9	110,011	668,517
PRIMARY METAL MANUFACTURING	1	3.2	4.2	170,755	1,283,826
FABRICATED METAL PRODUCT MANUFACTURING	1	1.2	2.2	81,571	428,804
MACHINERY MANUFACTURING	1	1.3	2.3	92,108	459,333
ELECTRICAL EQUIPMENT AND APPLIANCE MANUFACTURING	1	2.9	3.9	159,465	1,018,869
MOTOR VEHICLE, BODY, TRAILER, AND PARTS MANUFACTURING	1	5.8	6.8	262,402	2,280,459
OTHER TRANSPORTATION EQUIPMENT MANUFACTURING	1	1.6	2.6	103,056	702,119
FURNITURE AND RELATED PRODUCT MANUFACTURING	1	1.1	2.1	75,509	372,443
MISCELLANEOUS MANUFACTURING	1	1.4	2.4	95,070	467,171
PETROLEUM AND COAL PRODUCTS MANUFACTURING	1	3.1	4.1	202,623	1,103,219
CHEMICAL MANUFACTURING	1	4.4	5.4	239,337	1,697,700
PLASTICS AND RUBBER PRODUCTS MANUFACTURING	1	1.6	2.6	99,099	627,374
WAREHOUSING AND STORAGE	1	0.6	1.6	48,599	175,523
WASTE MANAGEMENT AND REMEDIATION SERVICES	1	1.1	2.1	69,179	300,316

FIG 15 ECONOMIC IMPACTS OF RUBBERTOWN INDUSTRIES
SOURCE: BUREAU OF ECONOMIC ANALYSIS, RIMSII MODEL; ECONOMICS RESEARCH ASSOCIATES

Economic Impacts

Economic impact analysis measures the incremental new spending, employee compensation, and jobs that result from each new job added to the Rubbertown workforce. Economic impacts result from direct impacts and "multiplier effects" that occur as spending ripples through the regional economy. The analysis measures total economic impacts, which consist of direct, indirect, and induced impacts, defined as follows:

- **Direct impacts** consist of permanent jobs, wages, and output resulting directly from the new development
- **Indirect impacts** consist of permanent jobs, wages, and output created by businesses which supply goods and services to the new development
- **Induced impacts** consist of permanent jobs, wages, and output created by the spending of direct and indirect employees

This analysis uses the Regional Input-Output Modeling System (RIMS II), in order to estimate economic impacts in Rubbertown. RIMS II industry multipliers account for the inter-industry relationships within regions. The model contains a detailed mapping of relationships between different industries, and helps determine the multiplier effects associated with each new industry job in Jefferson County. The analysis considers the regional economic effects within three categories:

JOBS represents the change in the number of jobs, including full-time and part-time positions, in the regional economy resulting from a change in regional output.

EARNINGS represents the change in gross employee wages and salaries, benefits, and other employee payments (i.e., FICA) in the regional economy resulting from a change in regional output.

SPENDING represents the change in regional sales or revenue, the amount of money received in exchange for goods sold or services provided, attributable to an adjustment in the regional economy

Understanding economic impacts can help guide the industry recruitment strategy for Rubbertown. All of the industries listed in Figure 15 are active within the local Rubbertown economy, and several have a greater capacity to generate additional jobs and spending within the regional economy. The industries with the greatest economic multiplier effect in Jefferson County are primary metal manufacturing; motor vehicle, body, trailer, and parts manufacturing; petroleum and coal products manufacturing; and chemical manufacturing. For every new job created in these four industries, between 3.1 and 6.8 new jobs are added to the Jefferson County economy, which result in between $1.0 million and $2.3 million in new spending within Jefferson County.

Target Industry Sub-Sectors

AECOM compiled its analysis of industry trends, prior cluster analyses, and information gathered through stakeholder interviews to identify target industry clusters for Rubbertown. Target industries are those that most contribute to economic development through high-growth jobs, strong economic impacts, and cluster activity.

Manufacturing and Transportation, Warehousing and Utilities are the leading industry sectors in Rubbertown. Within manufacturing, the following industry sub-sectors are most competitive in Rubbertown:

- Transportation Equipment Mfg
- Fabricated Metal Product Mfg
- Printing & Related Support Activities
- Chemical Manufacturing
- Logistics

It is important to note that although a cluster analysis is a useful tool, it is only one component of a holistic economic analysis. Cluster performance must be balanced against other factors in the community under discussion.

Ralph Avenue

LAND USE & ZONING ANALYSIS

Based on a comprehensive parcel-by-parcel survey conducted in the Rubbertown Corridor study area and parcel data provided by Louisville Metro Government (LOJIC), Interface Studio identified and mapped current land uses, enabling an accurate determination of acreage for each land use, as well as information about level of utilization of the land, land use patterns, and zoning.

THE INDUSTRIAL CORE

The heart of the industrial area of the Rubbertown Corridor is dominated by companies that have voluntarily banded together to form the Louisville Chemistry Partnership. These companies include the largest chemical manufacturers in Rubbertown. An assortment of other industries – such as concrete and casting plants, solvent producers, a pigment producer, and wood preserving – are also present in the area. Petrochemical storage tank farms dominate the northern end of the district, but two major tank farms flank Campground Road at the end of Kramers Lane as well.

- Former B.F. Goodrich Plant
- Chemistry Partnership Members
- Tank Farms / Petroleum Terminals
- Other Major Industrial Sites
- Study Area Boundary
- Park
- Cemetery
- Vegetated Area
- Louisville Loop Bikeway
- Floodwall
- Freight Rail

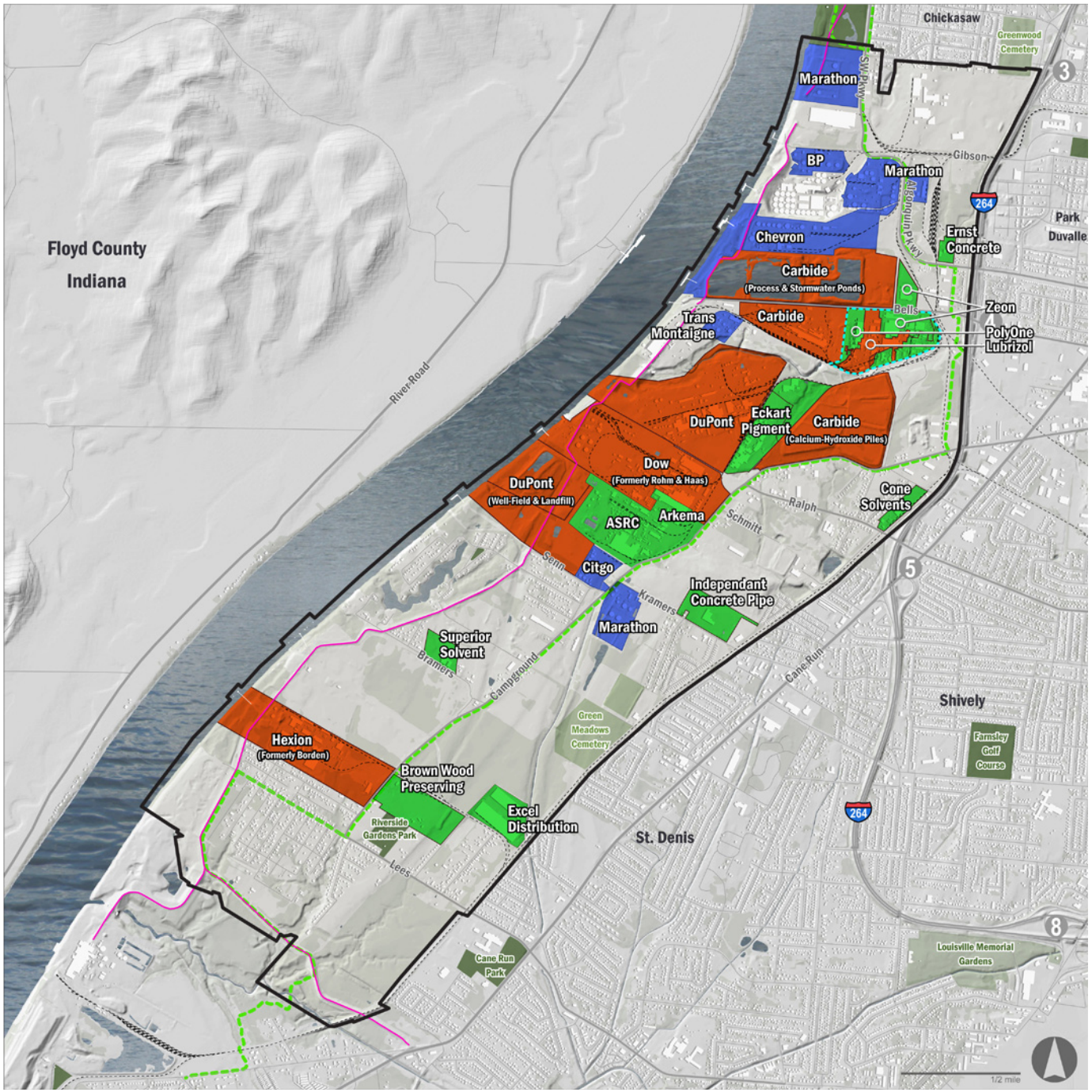


FIG 16 INDUSTRIAL CORE

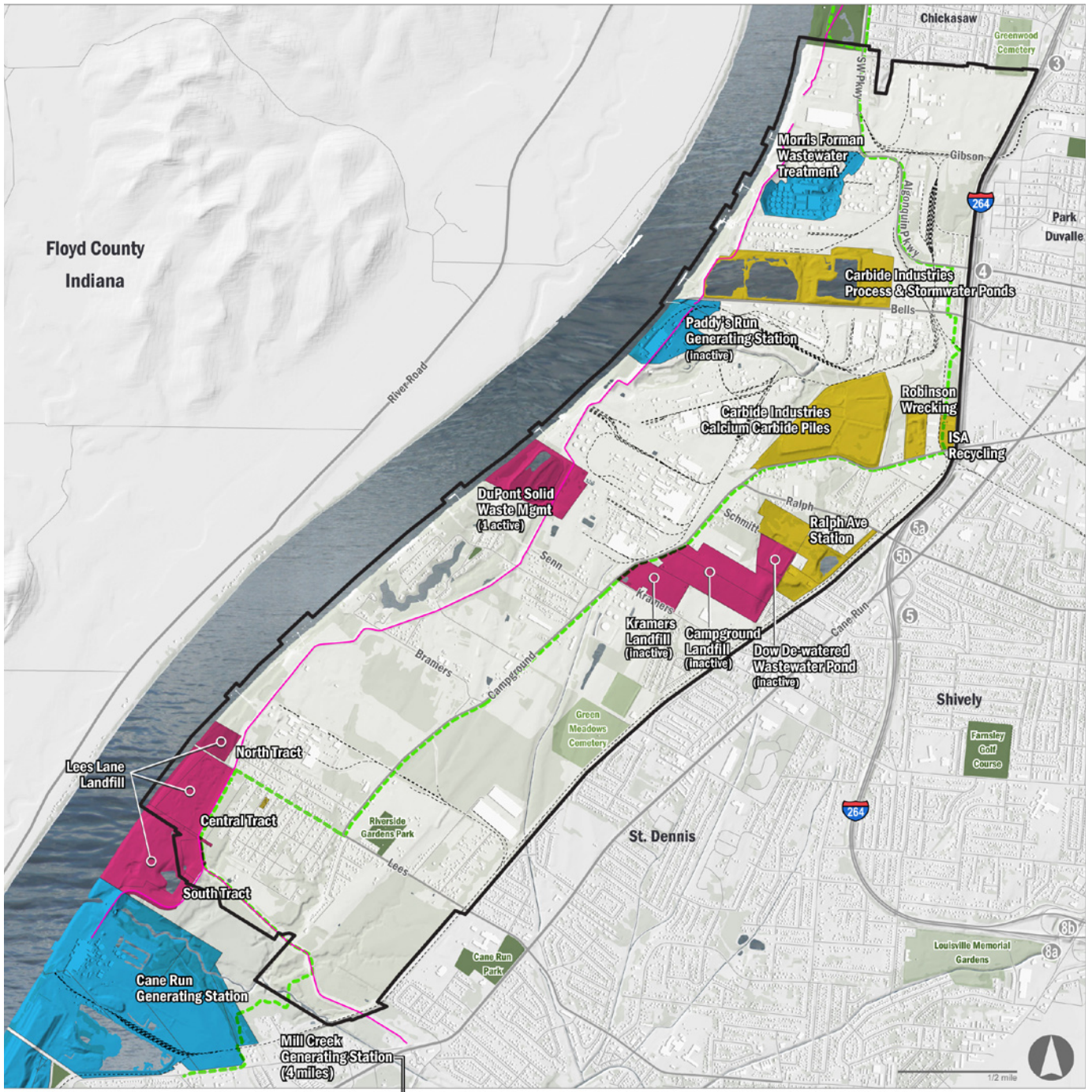


FIG 17 HIGH IMPACT USES

HIGH-IMPACT USES

Aside from industrial uses, the district is host to several other land uses that we have classified as "high-impact." These include utilities such as the Morris Forman Wastewater Treatment plant and the Cane Run generating station (directly abutting the southern end of the study area). Two major inactive former landfill sites are present in the Corridor – the combined Campground and Kramers landfill site, and the Lees Lane landfill on the Ohio River west of Riverside Gardens. There are also numerous dumps, scrap and recycling yards and material piles or ponds present in Rubbertown. Two of the largest of these sites – Carbide Industries' settling pond property north of Bells Lane and its former pond site (currently minimally utilized for calcium hydroxide storage) north of Campground Road, are now largely under-utilized.

LAND USE

Our analysis of Rubbertown Corridor land uses concluded that industrial uses dominate the district, consuming 43% of total acreage. Physically vacant land, including landfills, occupies another 34%. Residential uses and transportation / infrastructure uses occupy 10% and 8%, respectively.

The large amount of physically vacant land present in the district – especially south of Kramers Lane – reinforces the often "rural" character and lack of physical cohesiveness in the area. And, while residential uses represent only a small fraction of the total Corridor area, their prominent location at the entryways to the district and along its main arterials leaves them more exposed to negative externalities surrounding the operation of the chemical plants than if they were well-buffered from their industrial neighbors.

RUBBERTOWN *generalized* 2010 LAND USE

Industrial		1,540 AC
Vacant/ Undeveloped		1,204 AC
Single Family Residential		372 AC
Transportation/ Infrastructure		267 AC
Open Space		102 AC
Commercial		44 AC
Public		23 AC
Multifamily Residential		2 AC

3,554 TOTAL ACRES

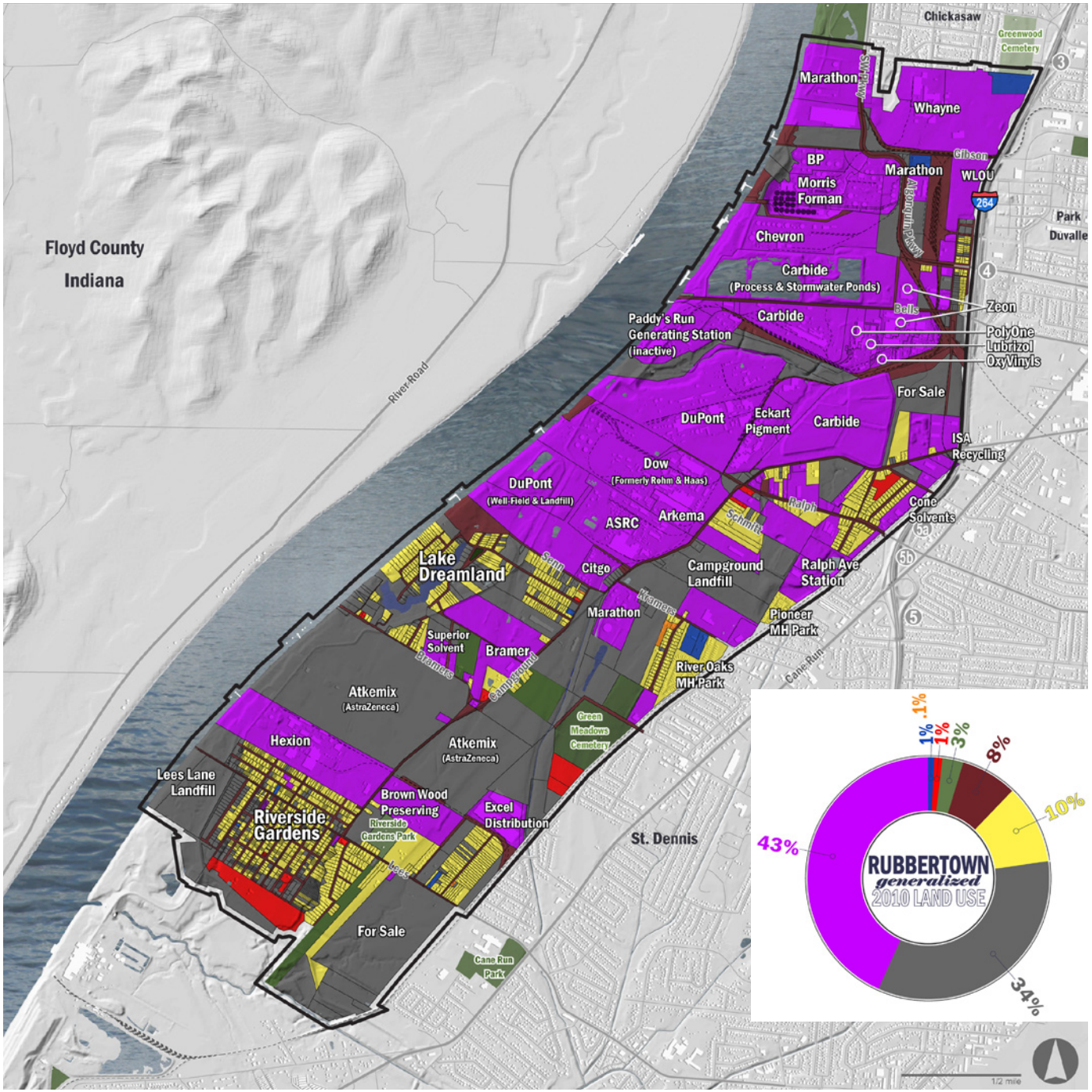


FIG 18 GENERALIZED 2010 LAND USE
SOURCE: INTERFACE STUDIO FIELD SURVERY FEB 2010

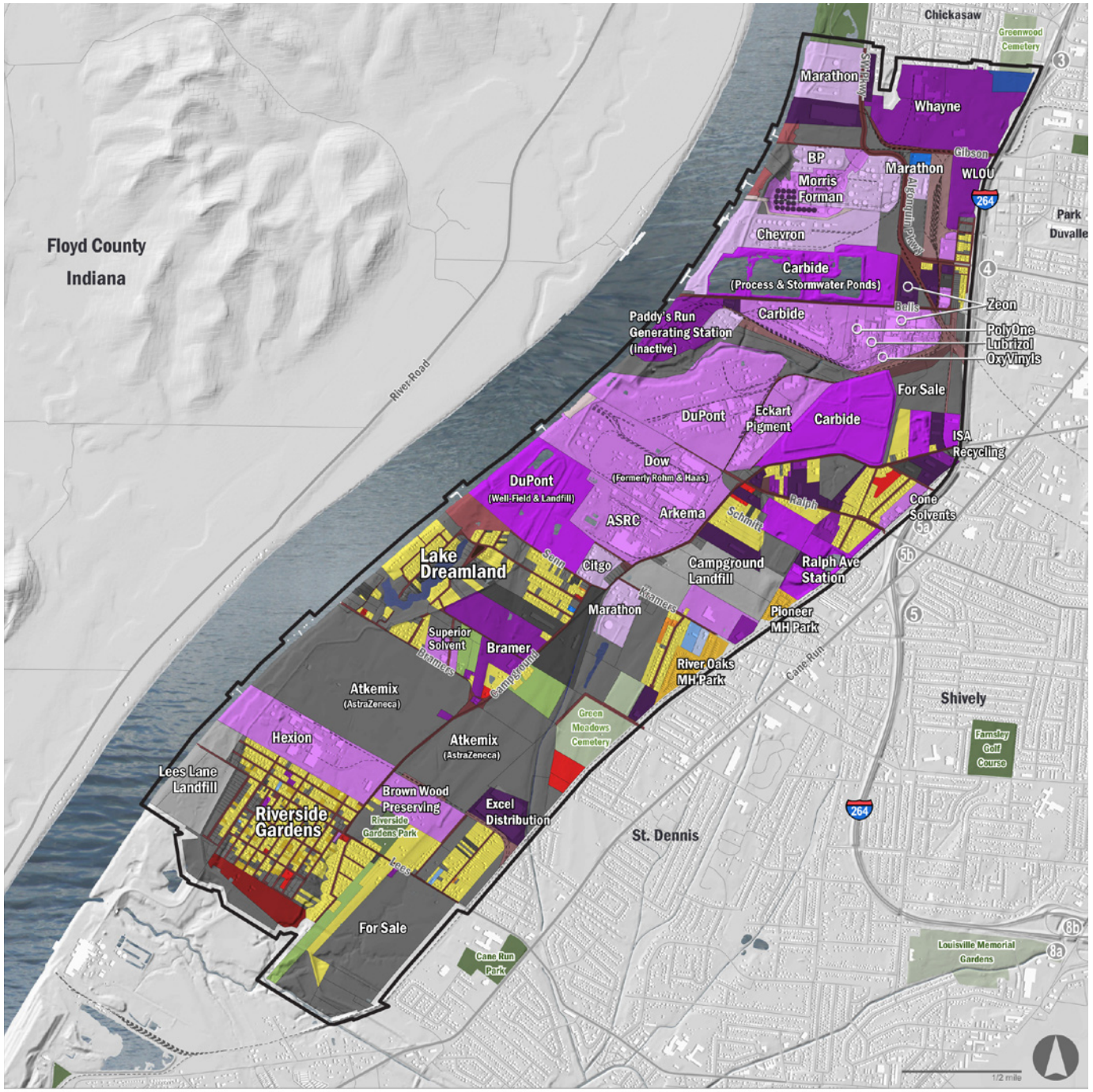


FIG 19 DETAILED 2010 LAND USE
SOURCE: INTERFACE STUDIO FIELD SURVERY FEB 2010

RUBBERTOWN *detailed* 2010 LAND USE

228 acres	Tank Farm / Terminal
695 acres	Plant / Utility
254 acres	Dump, Material, Settling Ponds, Scrap
117 acres	Trucking, Freight, Distribution, Warehouse
247 acres	Supply, Equipment, Service
1,008 acres	Undeveloped, Vacant, Natural Land
64 acres	Vacant Building
132 acres	Landfill
335 acres	Single Family Dwelling
24 acres	Mobile Home Park
13 acres	Side or Back Yard
168 acres	Road
30 acres	Rail
24 acres	Rail Terminal / Yard
27 acres	Barge Facility
9 acres	Pipeline
9 acres	Parking
11 acres	Park
47 acres	Cemetery
44 acres	Garden
1 acre	Store
24 acres	Auto
18 acres	General Commercial
9 acres	School
6 acres	Church
5 acres	Fire, Police
3 acres	Medical
2 acres	Multi-Family Dwelling

In the detailed land use map, Figure 19, use categories are further broken out to provide a more functional picture of the industrial uses, infrastructure and types of vacant land present in the district.

ZONING

The zoning in the Rubbertown Corridor is predominantly industrial (M-1, M-2, M-3), and commercial-industrial (C-M). Non-conforming uses, such as single-family dwellings located in a C-M commercial-industrial zone, generally may be continued until the parcel is abandoned or sold but may not be enlarged, expanded or changed. The zoning of the largest physically vacant properties in the Corridor is industrial or commercial-industrial.

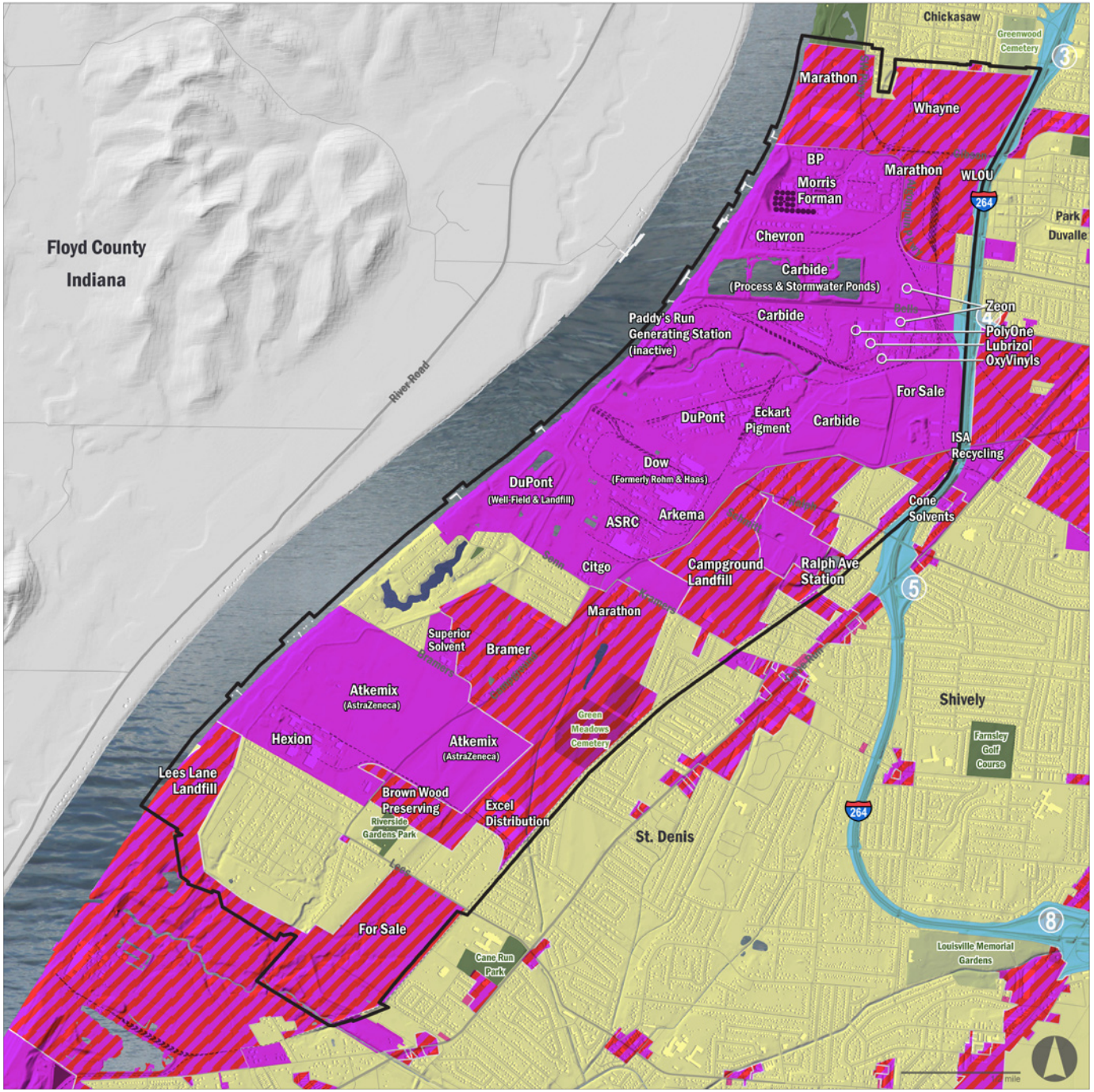


FIG 20 RUBBERTOWN ZONING

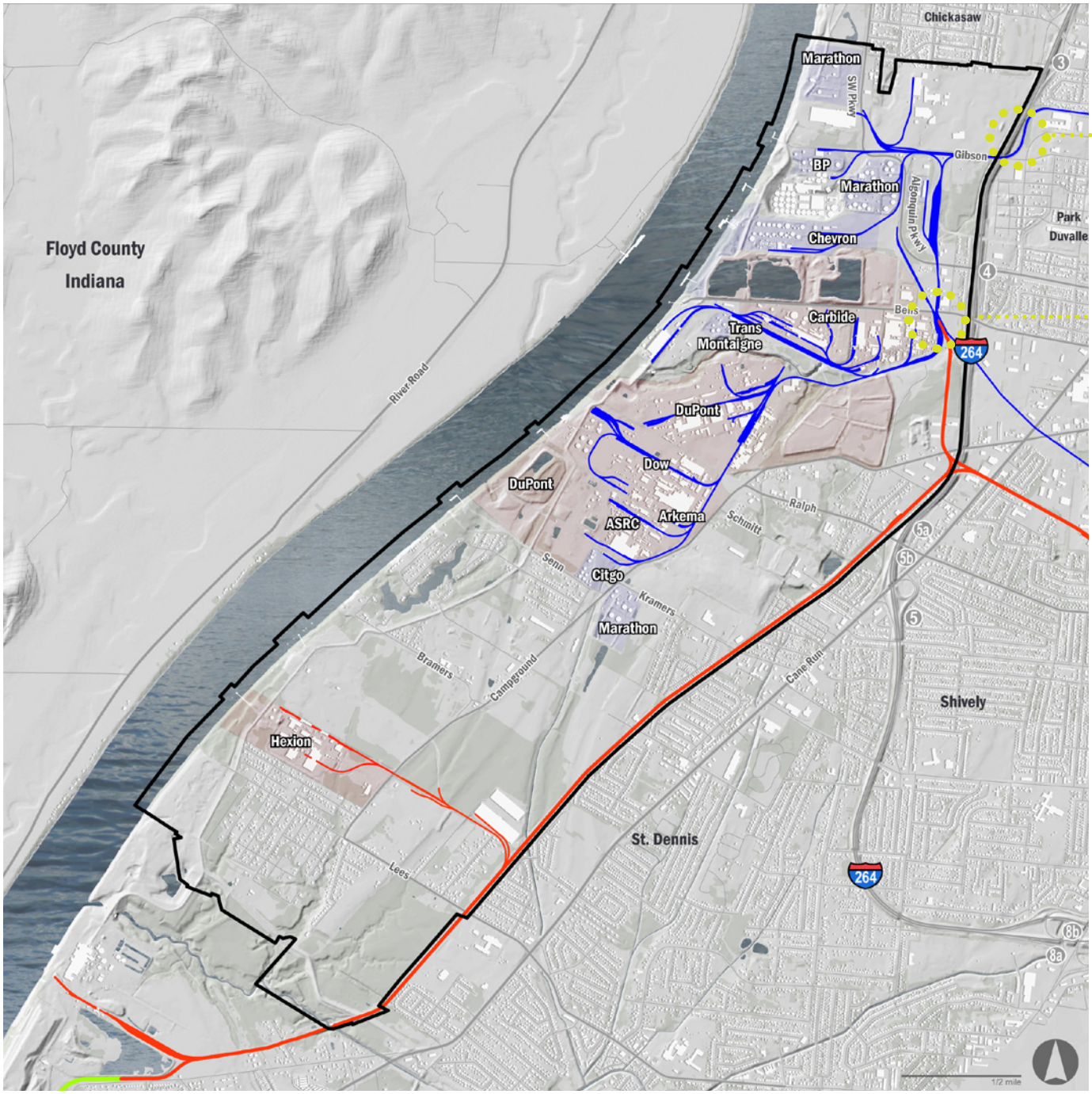
TRANSPORTATION & INFRASTRUCTURE

Based upon our analysis, one of the greatest assets of the Rubbertown Corridor is the access provided by its location and transportation infrastructure. In a region that lies within 500 miles of half the U.S. population, easy access to the interstate highway system, the inland waterways of the Ohio and Mississippi Rivers, and freight rail trunk lines render Rubbertown well-positioned for supply and distribution.

FREEWAY, STREETS & BIKEWAY NETWORK

Two Shawnee Expressway exits abut the eastern boundary of the study area at Bells Lane (Exit 4) and Ralph Avenue (Exit 5). The southern end of the district also has ready interstate access via the arterial Cane Run Road. The Corridor's segment of the Louisville Loop bikeway consists of two segments of on-road striped bike lanes (Southwest / Algonquin Parkway and Campground Road), a dedicated bike path between Bells Lane and Campground Road, and a shared use path along a portion of the Ohio River floodwall south of Riverside Gardens. While Metro Public Works preferred locating the entirety of the area's bikeway along the floodwall, security concerns at several of the plants resulted in the on-road bike lane compromise.

FIG 21 FREEWAY, STREETS & BIKEWAY NETWORK
SOURCE: LOJIC, INTERFACE STUDIO



REPORTED RAILCAR BACKUP POINTS

{as indicated by area plant managers}

FREIGHT RAIL

The Norfolk Southern-owned freight rail infrastructure is well-developed in the northern and central regions of Rubbertown, with two busy rail yards located at Bells Lane and Gibson Lane, and many sidings into chemical plant facilities. Among the companies that rely on this infrastructure, Zeon Chemical receives its bulk raw materials from the Gulf Coast refineries by rail and Carbide Industries receives its lime by rail (one of two primary inputs, with the other – coke – coming down by barge from Pennsylvania steel mills). DuPont ships 80% of its products – generally chemical feedstocks used at other DuPont facilities – out of the area by rail.

- Study Area Boundary
- Norfolk Southern
- Paducah Louisville
- Riverport

FIG 22 FREIGHT RAIL NETWORK

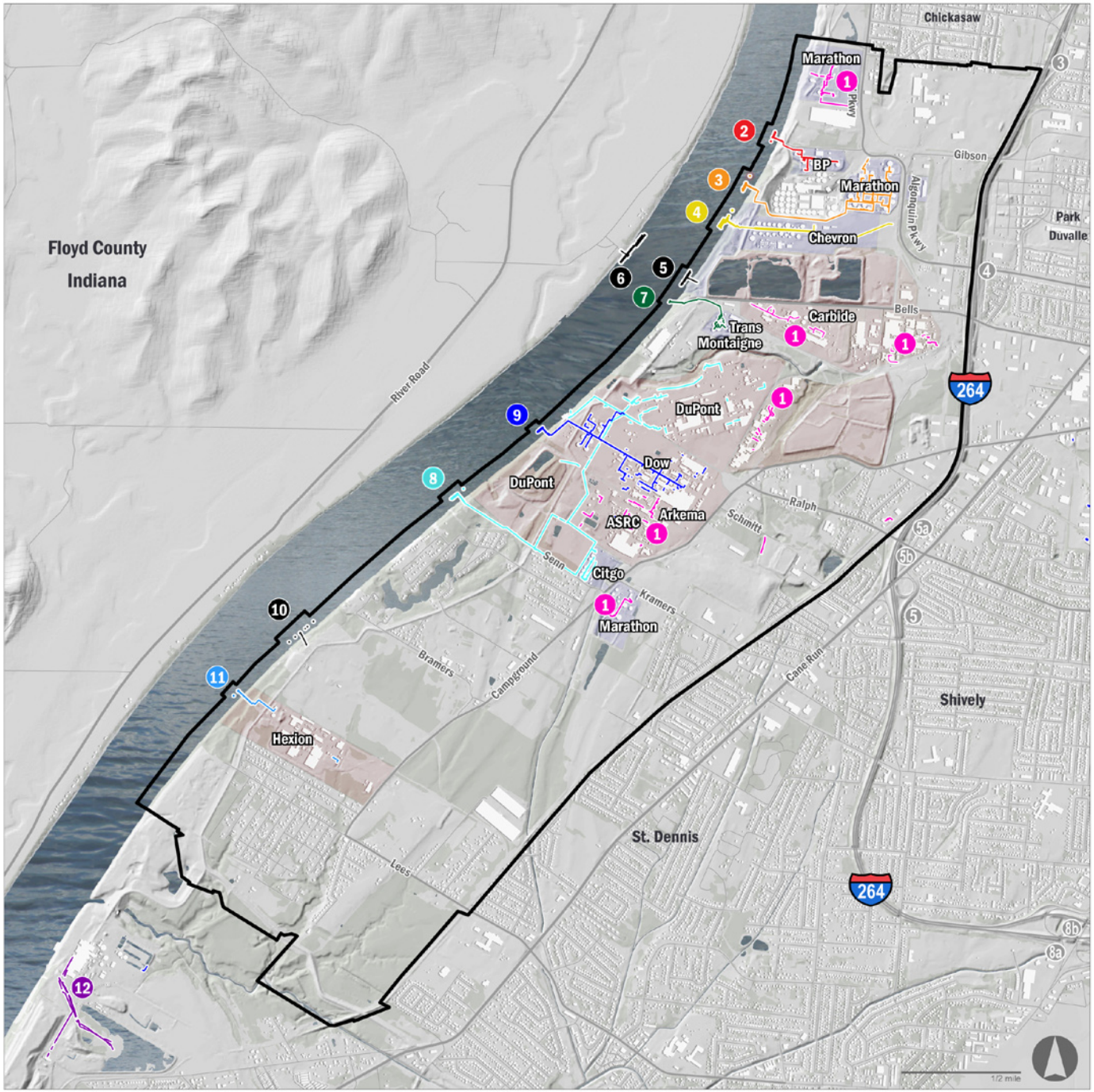


FIG 23 BARGE FACILITIES & PIPELINES

BARGE FACILITIES & PIPELINES

Due to the volume of petrochemical storage tank facilities and chemical manufacturing located in the Corridor, Rubbertown is the site of an extensive and well-developed network of barge facilities and pipelines. One inactive barge facility owned by Carbide Industries (5) is located at the end of Bells Lane and is currently used for coal barge temporary mooring by another company in exchange for periodic maintenance.

1. Site Pipelines
2. British Petroleum - Active Barge & Pipelines
3. Marathon - Active Barge & Pipelines
4. Chevron - Active Barge & Pipelines
5. Carbide Industries - Inactive Barge
6. River Road - Active Coal Barge
7. TransMontaigne - Active Barge & Pipelines
8. DuPont / Citgo- Active Barge & Pipelines
9. Dow - Active Barge & Pipelines
10. Atkemix / AstraZeneca - Inactive Barge
11. Hexion - Active Barge & Pipelines
12. Cane Run Station - Site Pipelines

SEWER NETWORK & STORMWATER MANAGEMENT

Louisville's current stormwater and sewage infrastructure relies on a combined sewer overflow (CSO) system which was built from the 1860s up until the 1950s. Combined sewer overflow occurs when heavy rains overload sewer systems that combine wastewater and stormwater, then release this polluted water into rivers or estuaries without treatment, resulting in threats to water quality and public health. The current flood levy was built in the 1950s at an elevation 3' higher than the 1937 flood which devastated the City. It protects almost all of Rubbertown with the exception of Lake Dreamland which is located west of the floodwall. Rubbertown contains less than 1% slopes which makes on-site stormwater management an important environmental design consideration.

Rubbertown sits at the intersection of two sewer districts, served by Morris Forman to the north and Derek R. Guthrie to the south. All of the main industries are connected to the Morris Forman Sewer Treatment Facility which has a significant amount of excess capacity to manage stormwater. Each industry must pre-treat their water prior to pumping it to the treatment facility because MSD uses treated water to create approximately 84 tons of high grade fertilizer a day. MSD, with an agreement through the EPA, maintains the 95 acre Lees Lane Landfill and added sewer infrastructure to the Riverside neighborhood in 2003. There is no existing sewer infrastructure north of the Riverside neighborhood from the Hexion plant to Senn Road on the north. This gap in infrastructure coincides with the largest concentration of undeveloped land.

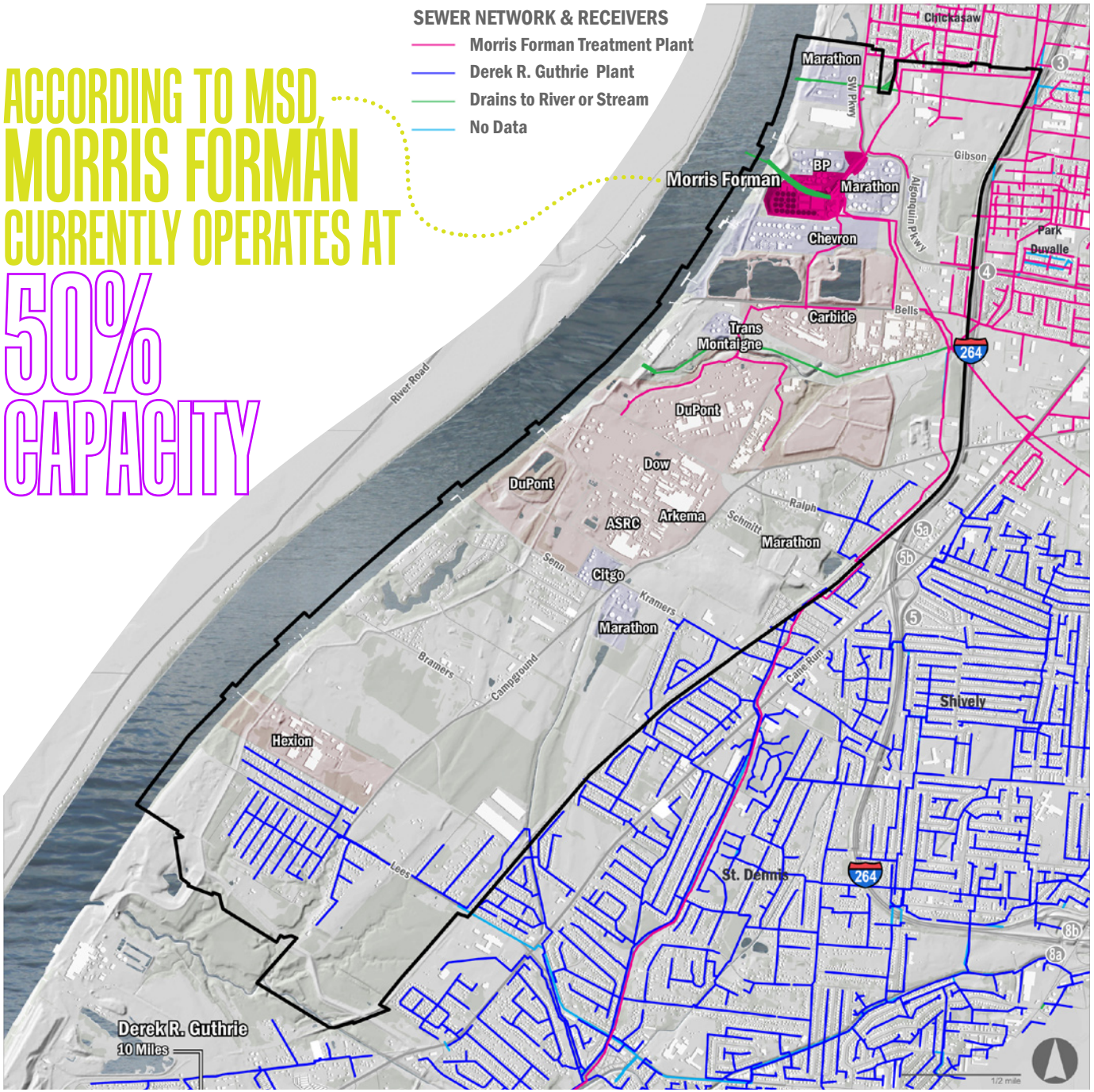
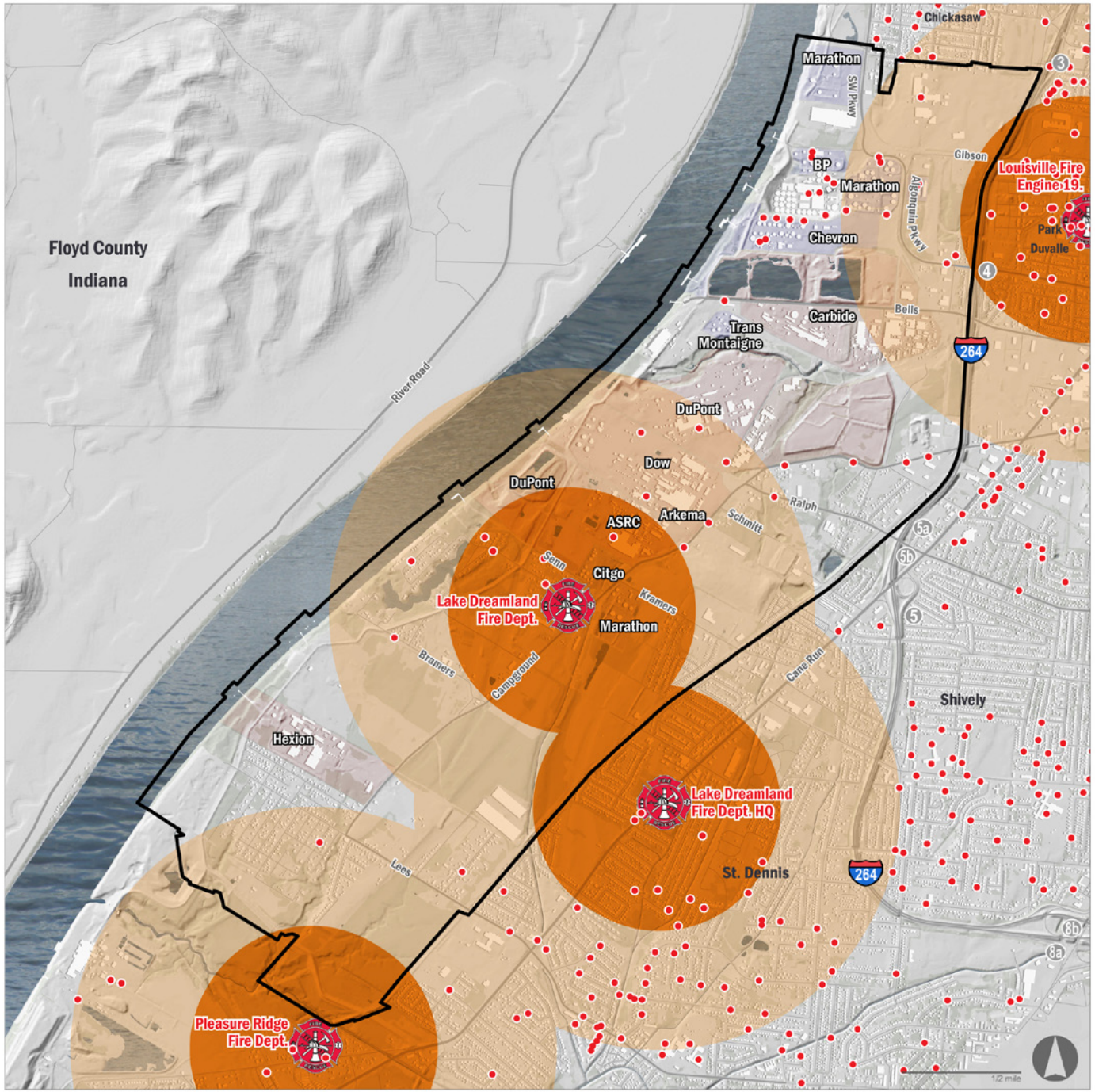


FIG 24 SEWER NETWORK & RECEIVERS



FIRE INFRASTRUCTURE

The area is served primarily by the old and new Lake Dreamland Fire Departments, with the Pleasure Ridge Park Fire Department and Louisville's Engine 19 nearby to the south and north, respectively.

THE NEAREST FIREHOUSE TO THE CHEMICAL MFG CORE OF RUBBERTOWN IS THE OLD LAKE DREAMLAND FIRE DEPARTMENT.

- Study Area Boundary
- Fire Department
- Fire Hydrant
- 1/2 Mile Fire Dept. Radius
- 1 Mile Fire Dept. Radius

RUBBERTOWN IS LOCATED WITHIN THE WEST/SOUTHWEST INDUSTRIAL SUBMARKET OF LOUISVILLE

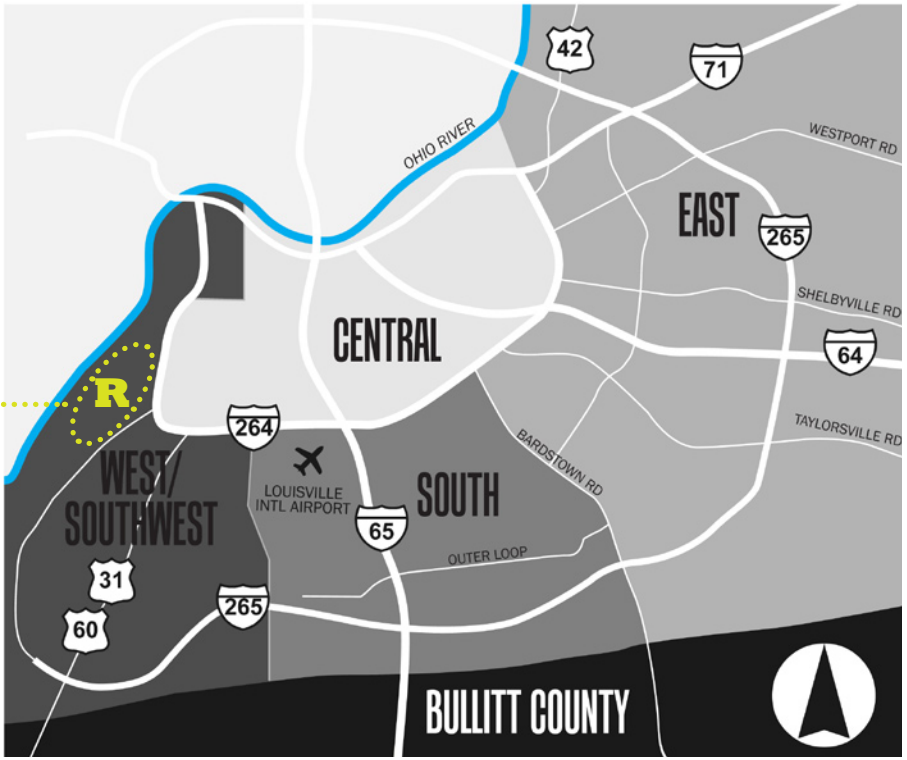


FIG 25 LOUISVILLE INDUSTRIAL MARKET

LOUISVILLE INDUSTRIAL REAL ESTATE MARKET

The Louisville Industrial Market (Industrial Market) includes the area within Interstate-265 and several outlying neighborhoods. The Industrial Market is made up of five markets: Central, East, South, and West/Southwest markets within Jefferson County and Southern Indiana and Bullitt County. Figure 25 illustrates the Louisville Industrial Area and the approximate boundaries of each market.

Industrial Market and submarket geographies and trends are provided by Commercial Kentucky, one of the leading commercial real estate firms in the city. The Industrial Market submarkets are detailed below:

EAST: bounded by the Ohio River to the North, the Jefferson County line to the south, and Bardstown Road and I-264 to the west.

CENTRAL: bounded by 1-264 and the Ohio River to the north.

SOUTH: bounded by I-264 to the north, the Jefferson County line to the south, Bardstown Road to the east, and Louisville International Airport to the west.

WEST / SOUTHWEST: bounded by the I-264 to the north, Bullitt County to the south, Louisville International Airport to the east, and Ohio River to the west.

BULLITT COUNTY: bounded by the Jefferson County line to the north and bisected by I-65.

SOUTHERN INDIANA: comprised of Floyd and Clark counties, includes the cities of Jeffersonville, Clarksville, and New Albany.

SUBMARKET	ANNUAL GROWTH (2005-2009)
South	4.5%
Central	-0.4%
WEST / SOUTHWEST	2.3%
East	0.7%
Bullitt County	16.9%

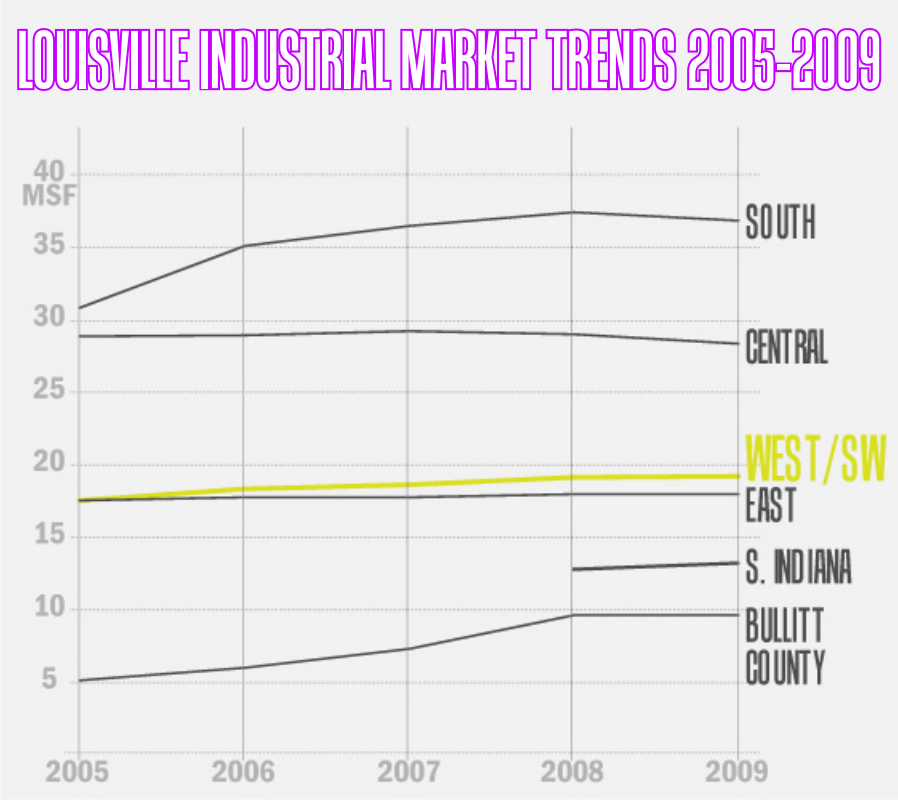
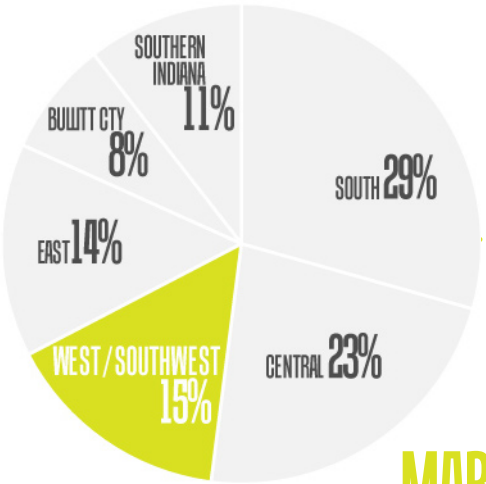
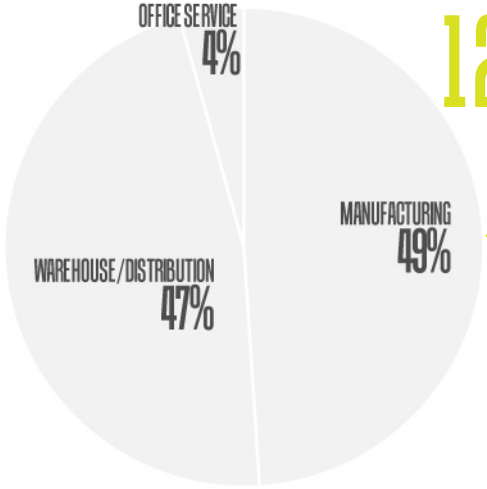


FIG 26 LOUISVILLE INDUSTRIAL MARKET TRENDS

The Louisville Industrial Market inventory in 2009 was 125.4 million square feet. Industrial space is split evenly between manufacturing and warehouse/ distribution use, with 49 percent of industrial space used for manufacturing, 47 percent used for warehouse/distribution, and the remaining 4 percent used for office services. The two largest industrial markets are South and Central, and the fastest growing market is Bullitt County. Figure 30 details the industrial inventory growth by submarket between 2005 and 2009 in Louisville.



LOUISVILLE INDUSTRIAL MARKET TOTAL (2009) = 125,431,744 SF



WEST/SOUTHWEST SUBMARKET HAS LOWEST VACANCY RATES

2009 VACANCY	
South	10.2%
Central	8.9%
WEST / SOUTHWEST	4.0%
East	6.4%
Bullitt County	17.2%
Southern Indiana	10.6%

LOUISVILLE INDUSTRIAL MARKET VACANCY RATES 2002 – 2009

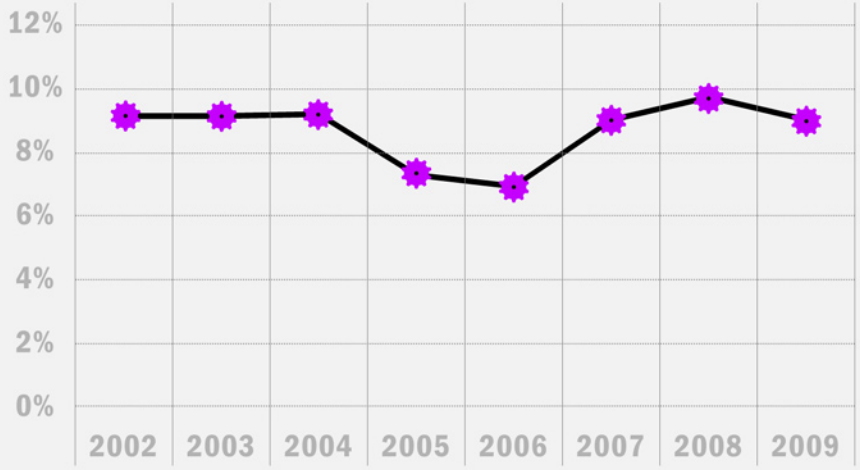


FIG 27 LOUISVILLE INDUSTRIAL MARKET VACANCY RATES 2002 – 2009

INDUSTRIAL VACANCY

Average annual vacancy in the Louisville industrial market from 2002 to 2009 was 8.7, and fluctuated between 6.9 and 9.7 percent. Figure 27 illustrates trends in vacancy rates in the Louisville industrial market. Annual vacancy rates reached a five-year low during 2006 and peaked in 2008. In 2009, the overall vacancy rate in Louisville was 9.0 percent and the vacancy rate in the West/ Southwest submarket, which includes Rubbertown, was 4.0 percent.

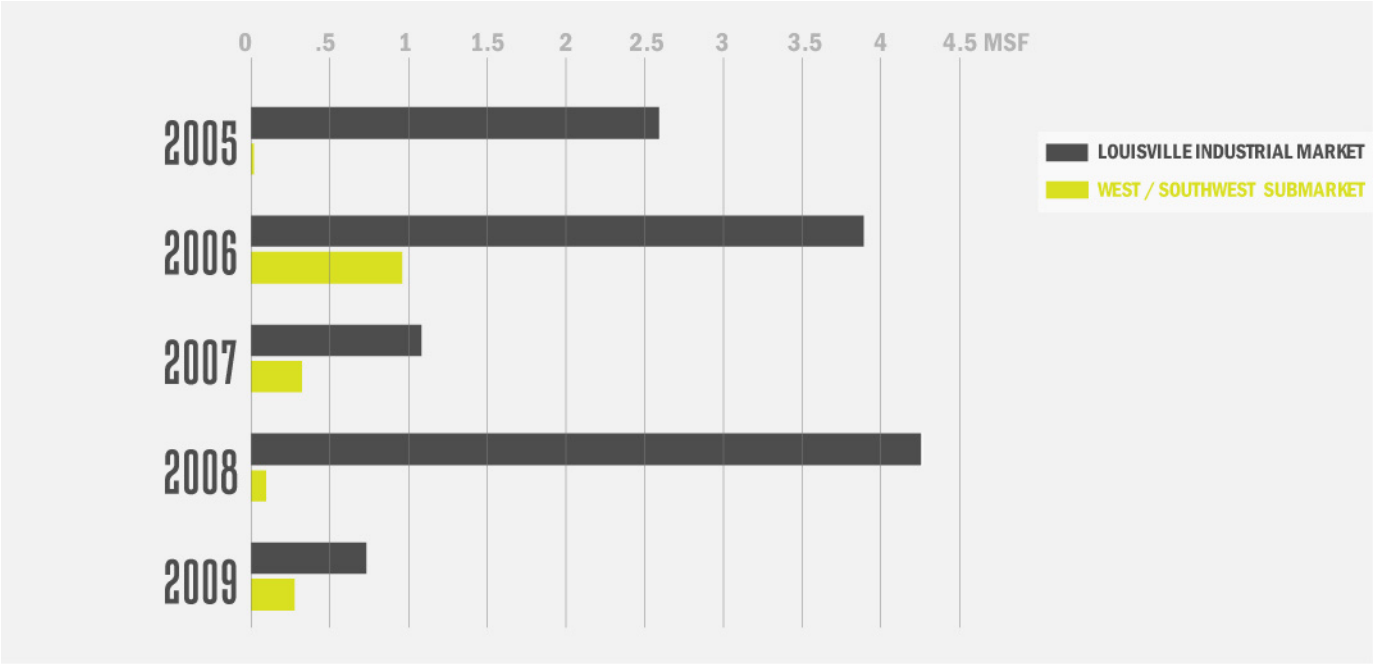


FIG 28 LOUISVILLE INDUSTRIAL ABSORPTION 2005-2009

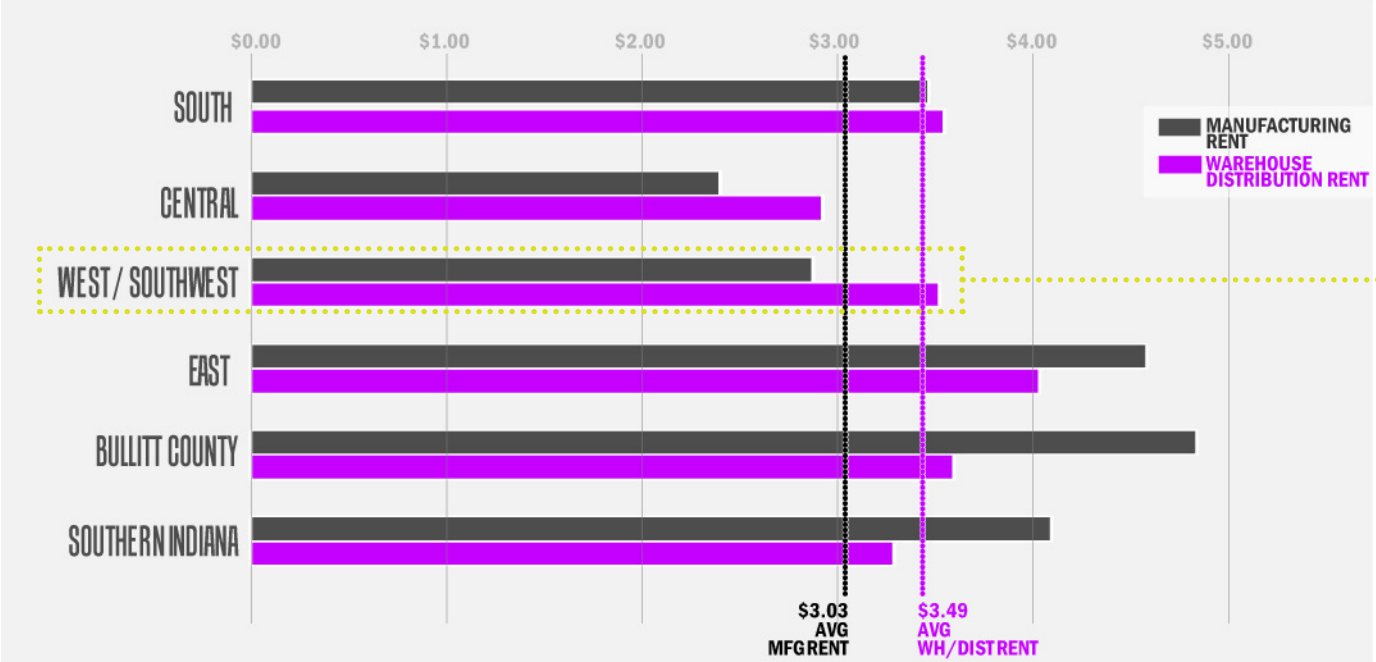


FIG 29 2009 LOUISVILLE MARKET INDUSTRIAL RENT PER SQUARE FOOT

INDUSTRIAL ABSORPTION

Average annual absorption in the Louisville industrial market from 2005 to 2009 was 2.5 million square feet. During the same time period, the West/Southwest submarket, where Rubbertown is located, had an average annual absorption of 324,000 square feet. Approximately 70 percent of annual absorption between 2005 and 2009 was in the South and Bullitt County submarkets. To become a more viable industrial district, the West/Southwest sub-submarket, and Rubbertown specifically, will have to capture some of the industrial absorption that is happening in the South and Bullitt County submarkets.
Figure 28 shows annual absorption trends in Louisville and the West/ Southwest submarket from 2005 to 2009.

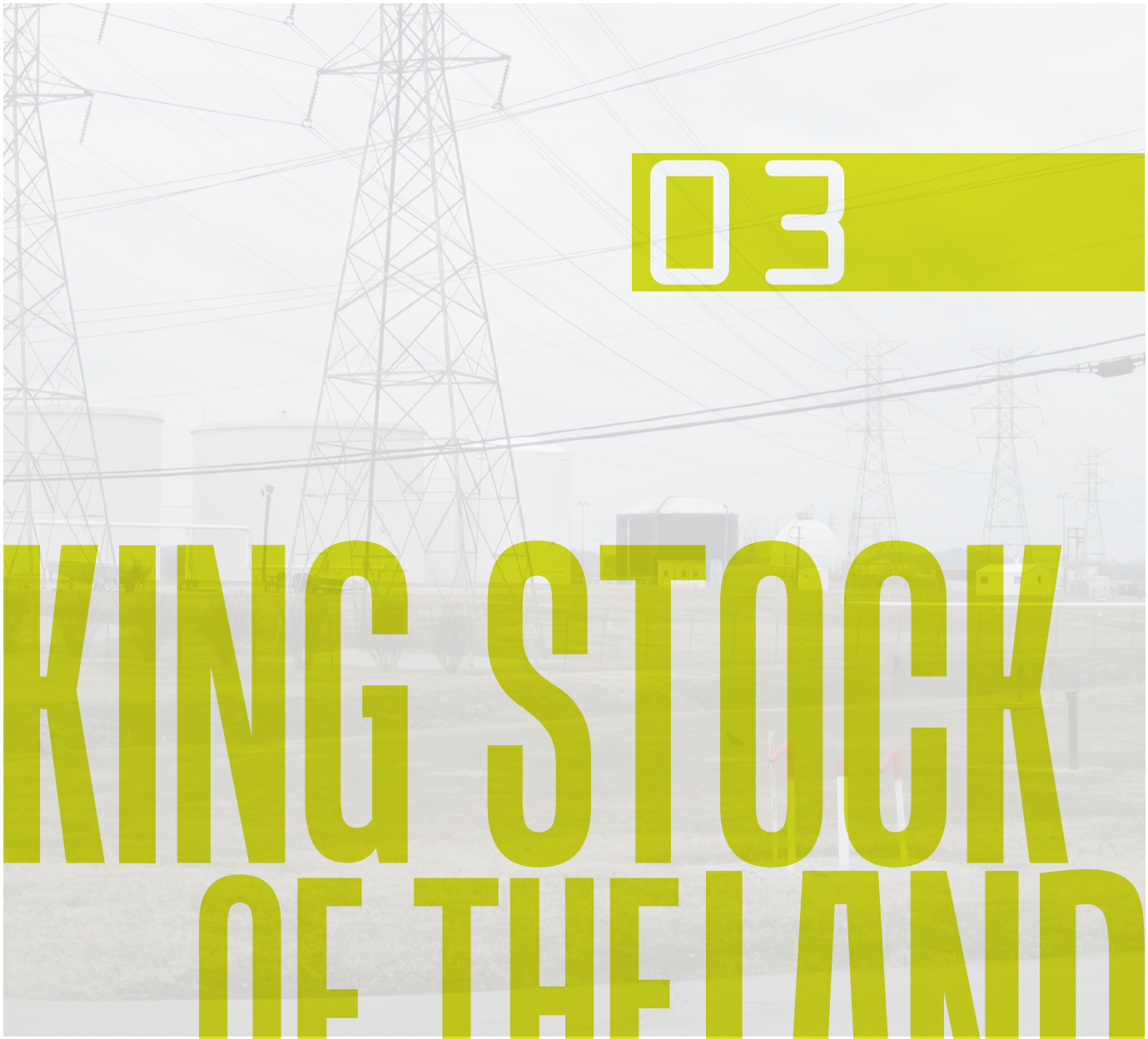
INDUSTRIAL RENTS IN WEST/SW SUBMARKETS ARE LOWER WITHIN THE LOUISVILLE MARKET

INDUSTRIAL RENTS

In 2009, average industrial rents in the Louisville market were $3.49 per square foot for warehouse/ distribution space and $3.04 per square foot for manufacturing space. Industrial rents in South, Central and West/SW submarkets are lower within Louisville Market.


Brightside
Green
Mile
Louisville
HEXION
SPECIALTY CHEMICALS
35
3517
3515

Lees Lane



03

TAKING STOCK OF THE LAND

03 TAKING STOCK OF THE LAND

Beyond the manufacturing core of the Rubbertown chemical complex, the Corridor feels almost rural in places, with large tracts of open or undeveloped land seemingly dominating the landscape. As a part of the scope of the Rubbertown Economic Development Strategy, Interface Studio was asked to evaluate the existing and potential land inventory of the Corridor. These findings are critical to informing land use policy and development decisions that come out of the strategy. In the analysis, typologies are first developed to categorize and describe the potential land supply in Rubbertown. Next, constraints to possible development on these lands are described and mapped. Finally, a suitability analysis is conducted to attempt to systematically overlay potential development constraints in order to determine the areas of highest and lowest suitability for building. Several clear trends emerged from this analysis and are detailed at the end of this section.

LAND INVENTORY

For the purposes of this analysis, Interface Studio utilized parcel data provided by the Louisville/Jefferson County Information Consortium (LOJIC), combined with a physical land use survey it conducted in February of 2010. Land considered as potential inventory fell into four general categories, or typologies:

This category includes whole, vacant properties or properties with vacant buildings and no active uses, as well as undeveloped land in its natural state.

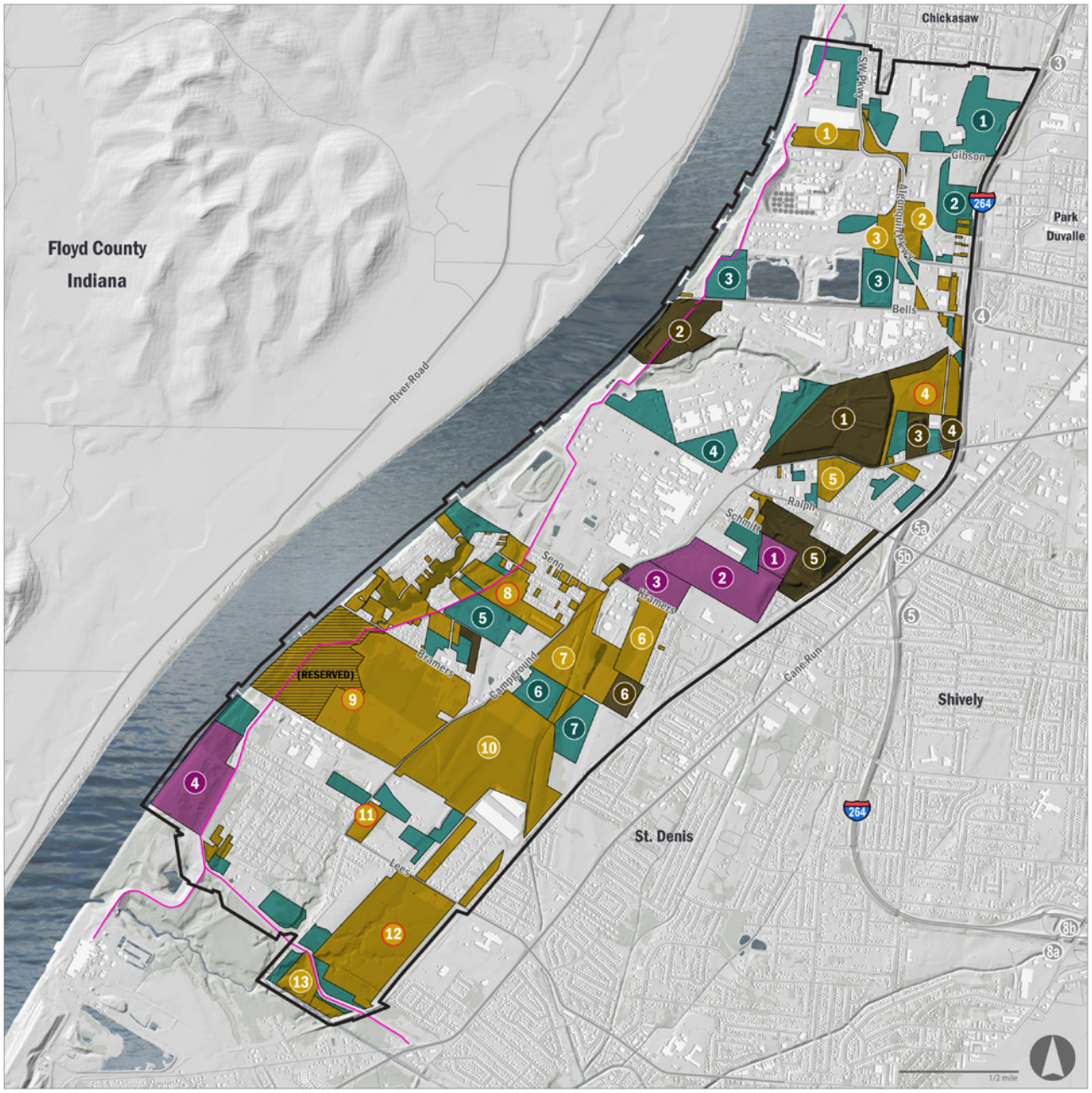
Includes land that is minimally used or that could be put to a higher, better use.

Indicates portions of existing properties that are vacant or undeveloped & that could potentially be carved off or subdivided for use, or leased to other businesses for use by the property owner (known as co-siting).

This category indicates closed former municipal sanitary, industrial and inert waste landfills.

FIG 30 LAND TYPOLOGIES.

The bulk of Rubbertown's **830 acres of Inactive, Vacant or Undeveloped Land** lies in the vicinity of the Atkemix Ten property along the southern portion of Campground Road, near Bramers Lane. **Underutilized Land – totaling 216 acres** – is largely concentrated in the current manufacturing core of the Corridor, near Campground and Ralph, and consists mainly of three large properties (the Ralph Ave Station dump, the Carbide Industries property, and the inactive Paddy's Run Generating Station). **Slack Space totals 380 acres** and is scattered more or less throughout the Corridor, and **Landfills – totaling 132 acres** – are comprised of two major sites (Lees Lane Landfill and the combined Campground and Kramers Landfill site).



INACTIVE, VACANT, UNDEVELOPED - 830 ac

*Red denotes properties signed For Sale

1. MSD - 15 ac
2. Marathon-Ashland - 14 ac
3. Standard Oil - 11 ac
4. PolyOne - 28 ac
5. Mary Koch - 14 ac
6. Marathon - Ashland - 26 ac
7. Eugene Shenck & Marathon - 58 ac
8. D.&P. Hartlage & RL R Investments - 23 ac
9. Atkemix Ten Inc - 212 ac
10. Atkemix, E. Shenck, P. Embry, R.&C. Clark - 140 ac
11. R.&W. Thieneman - 9 ac
12. Illinois Central RR & Citizens Sav Bank - 105 ac
13. Louisville Jeffco Metro - 13 ac

POTENTIALLY UNDERUTILIZED - 218 ac

1. Carbide Industries (available) - 87 ac
2. LG&E (Paddy's Run - inactive) - 44 ac
3. Robinson Wrecking - 10 ac
4. ISA Recycling - 6 ac
5. Southern Materials (Ralph Ave Station) - 47 ac
6. Green Meadows Cemetery - 11 ac

SLACK SPACE - 380 ac

1. Whayne Supply (Equipment demo area) - 35 ac
2. Louisville & KY (Broadcast Towers) - 18 ac
3. Carbide Industries (Pond 3 & vacant) - 18 & 19 ac
4. El DuPont de Nemours (Parking) - 36 ac
5. Bramer Supply (Rear vacant) - 24 ac
6. C.&R. Williams (Rear garden) - 16 ac
7. Green Meadows Cemetery (Unused portion) - 20 ac

LANDFILLS - 132 ac

1. Dow (inactive de-watered former wastewater pond) - 12 ac
2. ASRC (Campground Landfill - inactive) - 56 ac
3. SCA Services of KY (Kramers Landfill - inert, inactive) - 21 ac
4. Hofgesang Foundation (Lees Lane Landfill - inactive) - 58 ac

FIG 31 RUBBERTOWN LAND INVENTORY

1937 Flood, West Louisville

LAND CONSTRAINTS

Apart from whether a parcel is entirely or partially vacant or fully- or under-utilized, each site in the land inventory of the Rubbertown Corridor faces a unique set of challenges – and possesses unique advantages – for potential development. The following six constraints were identified as relevant for both industrial businesses and surrounding communities with regard to potential development on the Rubbertown Corridor's land inventory.

> **Distance to Residential:** The largest contiguous area with suitable distance from residential neighborhoods is centered on the Atkemix Ten property on Campground Road in the southern half of the Rubbertown Corridor. This area is buffered on the south by the Hexion plant, on the east by freight rail, and on the north by the floodwall (from the residential neighborhood of Lake Dreamland).

> **Location Relative to Floodplains:** The vast majority of Rubbertown is not in the 100-year floodplain, thanks to the floodwall running the length of the Corridor. Notably, the Lake Dreamland neighborhood and low-lying portions of the Illinois Central RR property that is for sale in the extreme southwestern corner of the study area are in the 100-year floodplain.

> **Degree of Slope:** For the most part, the Rubbertown Corridor is as flat as a pancake, with no real hills apart from mounding associated with landfills and Carbide's material storage areas. Moderate slopes do exist in narrow bands corresponding to the many creeks, culverts, and watercourses in the Corridor.

> **Distance to Roads:** Our analysis indicates that the portion of the Corridor with the best road access is actually the relatively undeveloped southern portion. The historic core of the complex is the least well-served by public road access.

> **Distance to Freight Rail:** The only part of the study area with poor current or potential access to a local freight rail spur is the central area between Senn Road to the north and Bramers Lane to the south, that lies east of the Lake Dreamland residential area.

> **Distance to Sewer:** Municipal sewer infrastructure is missing north of the Lake Dreamland neighborhood and south of the ASRC plant and the industrial core of the Rubbertown Corridor.

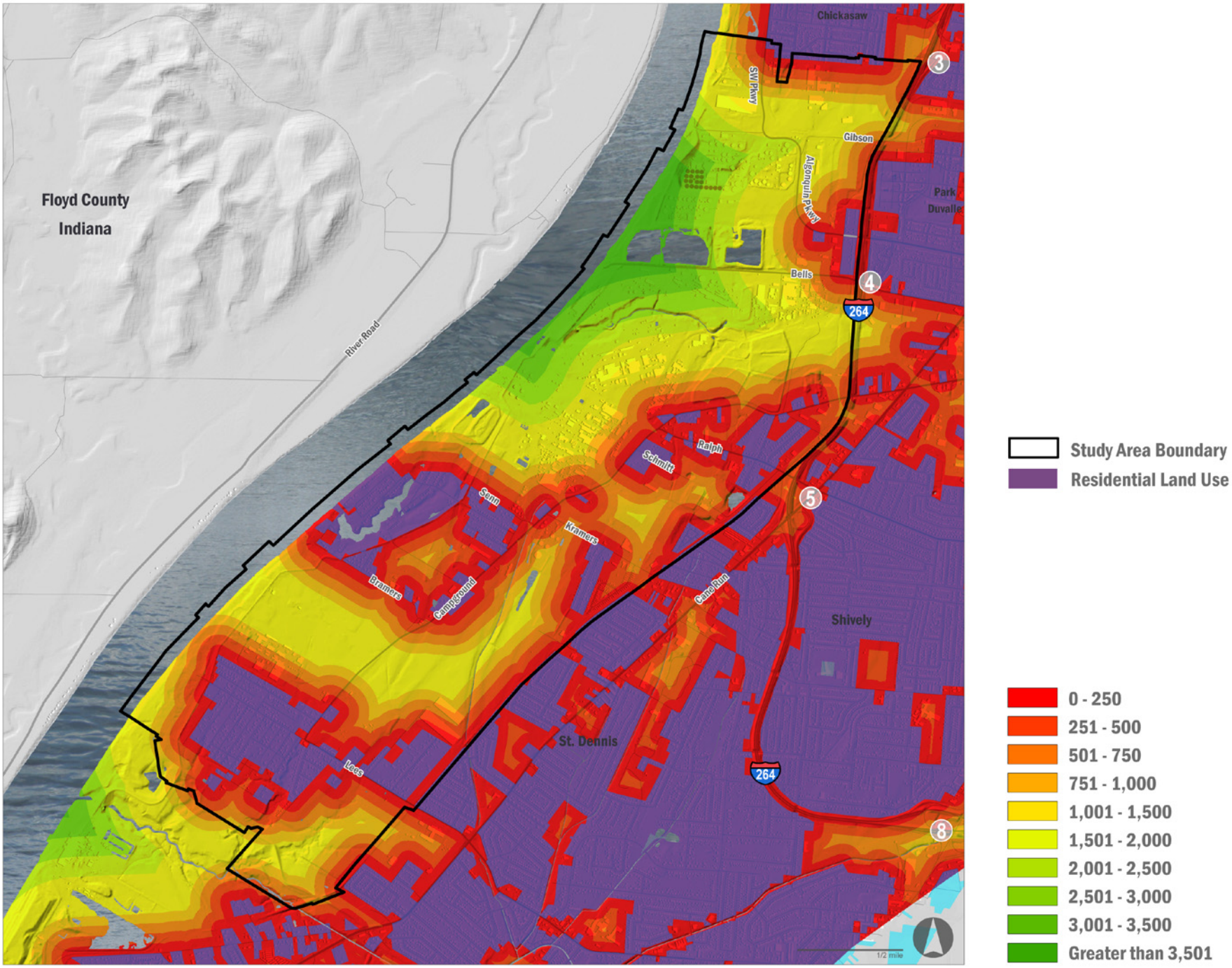
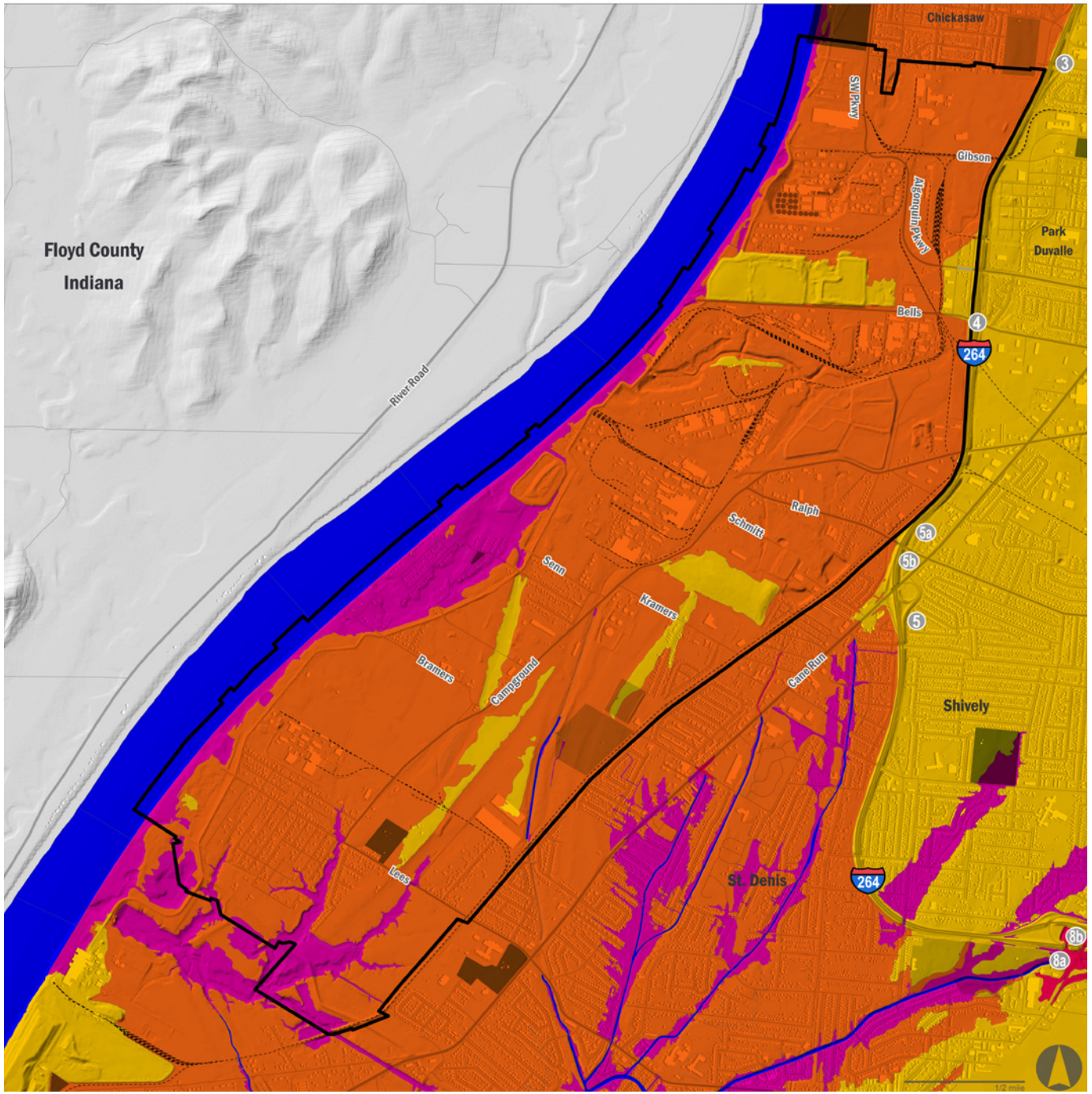


FIG 32 SITE CONSTRAINTS - DISTANCE FROM RESIDENTIAL NEIGHBORHOODS (IN FEET)



X - NOT IN FLOODPLAIN
Zone X is the flood insurance rate zone that corresponds to areas outside the 100-year floodplains, areas of 100-year sheet flow flooding where average depths are less than 1 foot, areas of 100-year stream flooding where the contributing drainage area is less than 1 square mile, or areas protected from the 100-year flood by levees.

AE - IN 100-YR FLOODPLAIN
Zone AE is the flood insurance rate zone that corresponds to the 100-year floodplains that are determined in the Flood Insurance Study (FIS) by detailed methods. Mandatory flood insurance purchase requirements apply.

A - IN 100-YR FLOODPLAIN
Zone A is the flood insurance rate zone that corresponds to the 100-year floodplains that are determined in the Flood Insurance Study (FIS) by approximate methods. Mandatory flood insurance purchase requirements apply.

FIG 33 SITE CONSTRAINTS - FLOODPLAIN

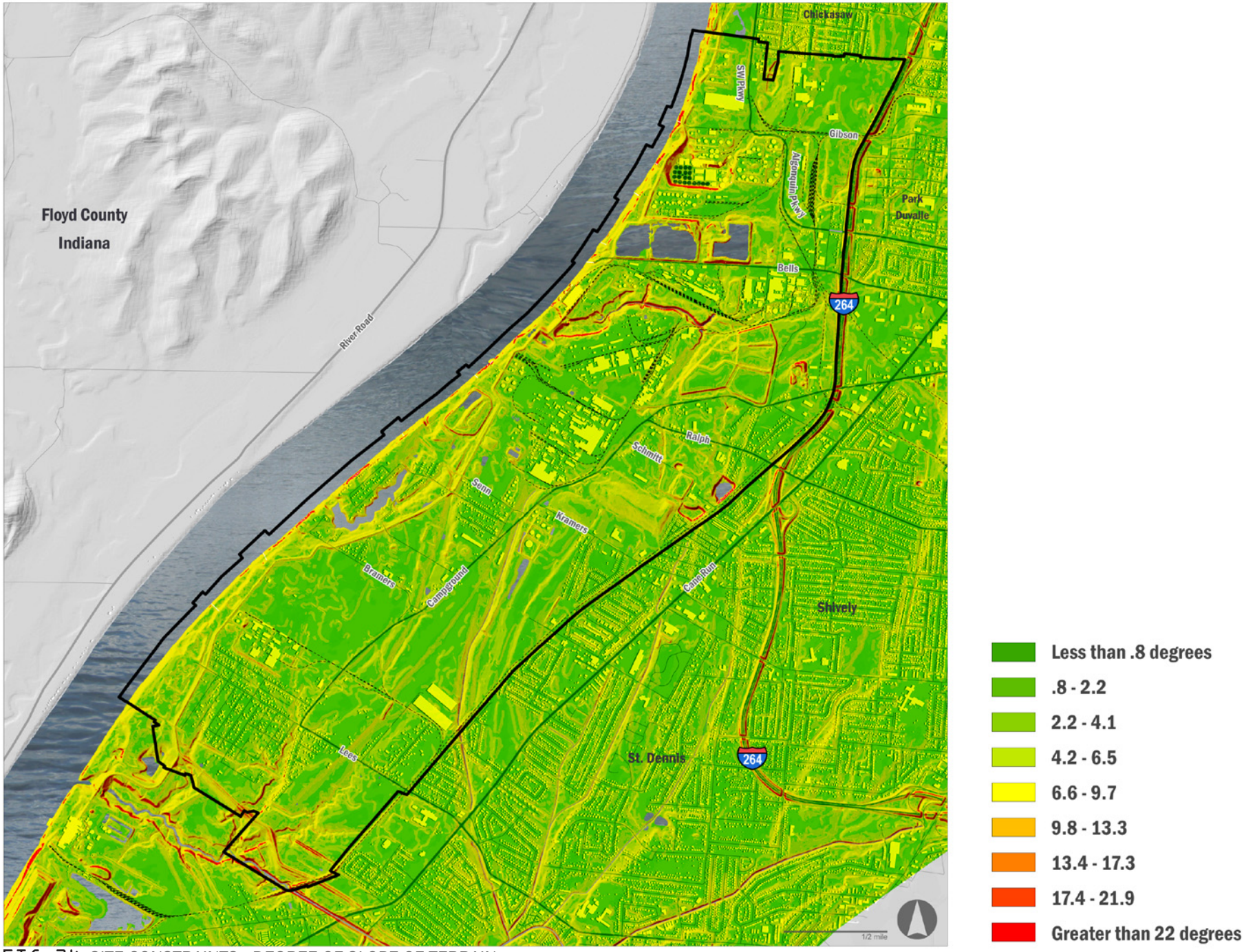


FIG 34 SITE CONSTRAINTS - DEGREE OF SLOPE OF TERRAIN

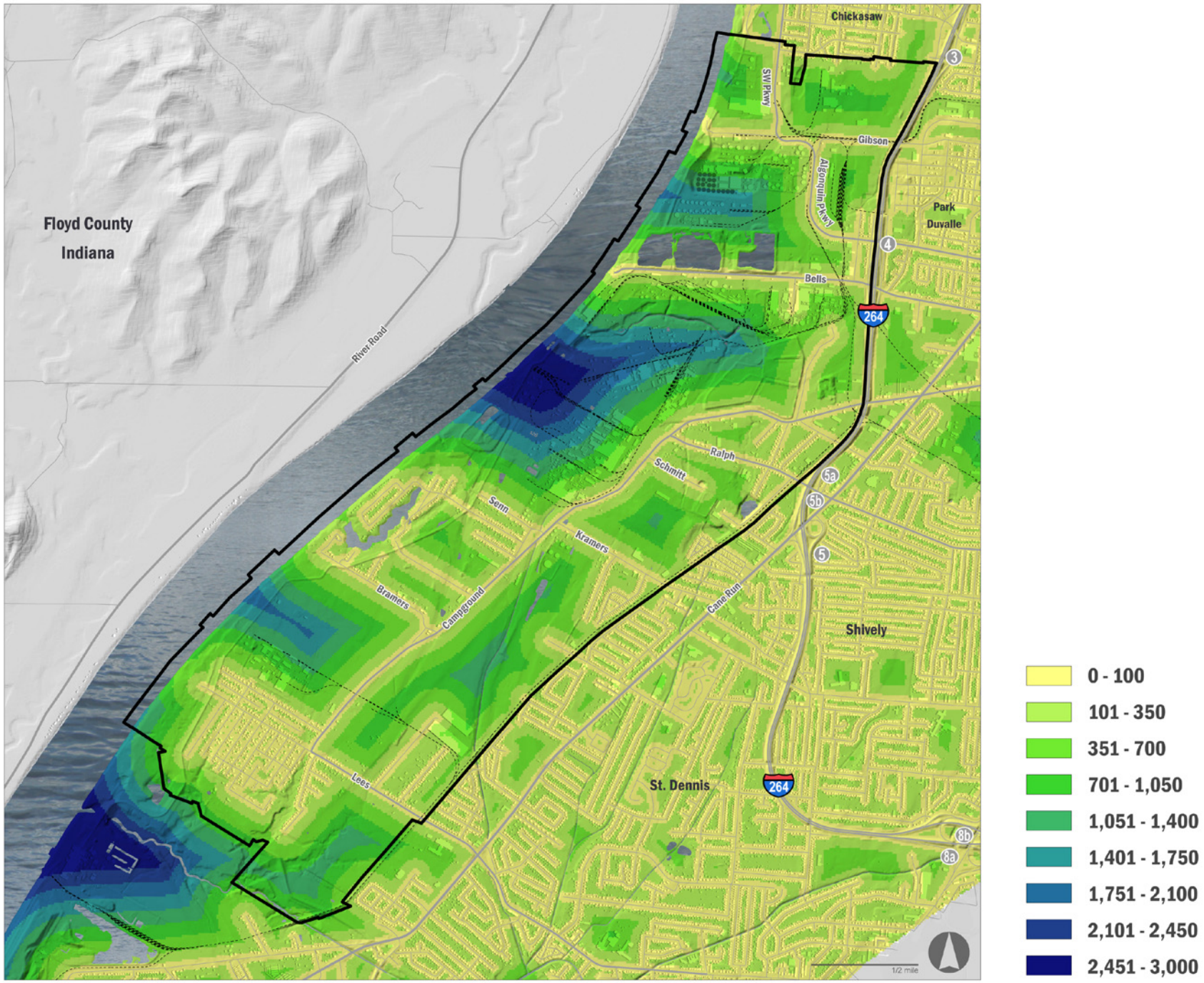


FIG 35 SITE CONSTRAINTS - DISTANCE FROM ROAD (IN FEET)

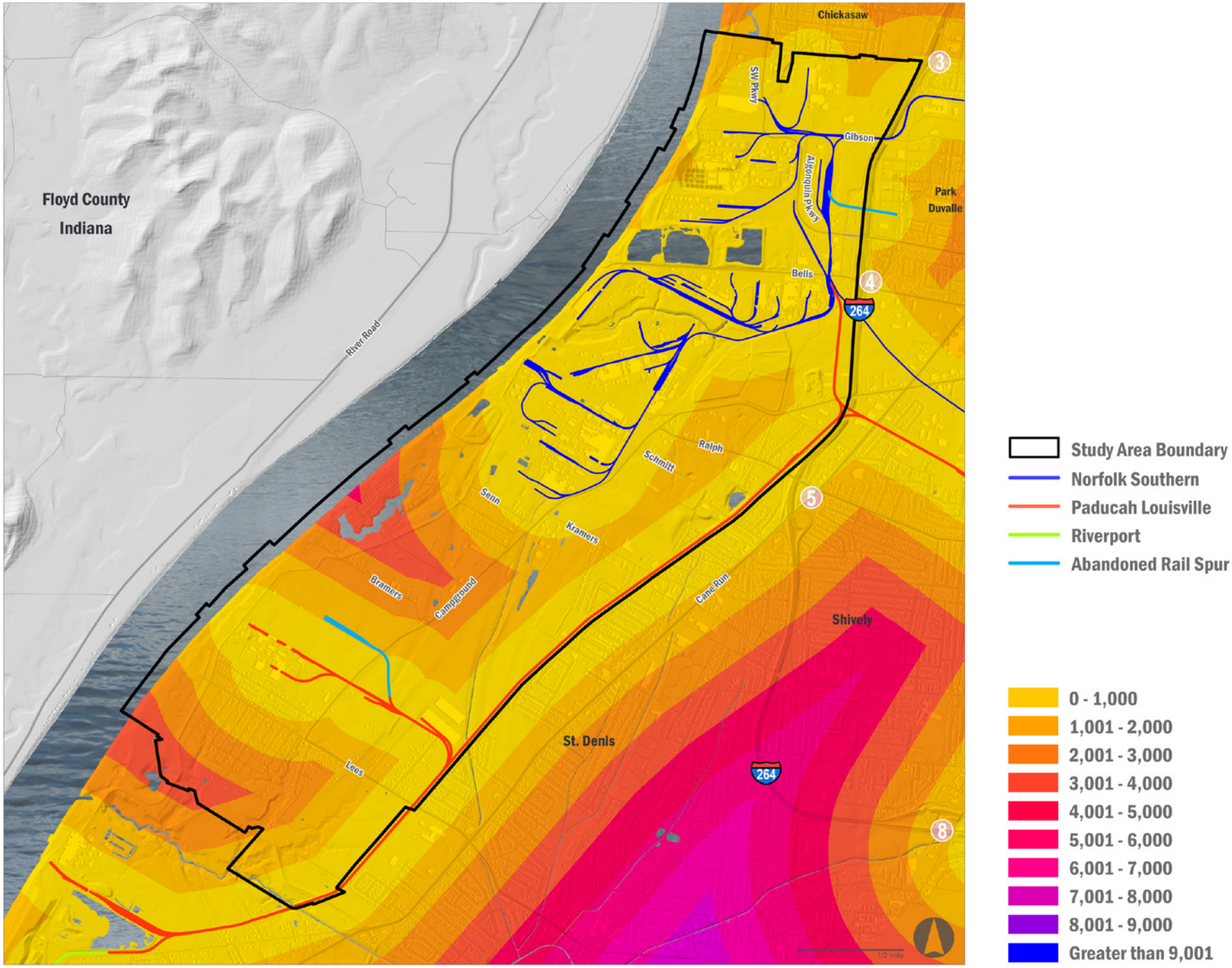


FIG 36 SITE CONSTRAINTS - DISTANCE FROM FREIGHT RAIL (IN FEET)

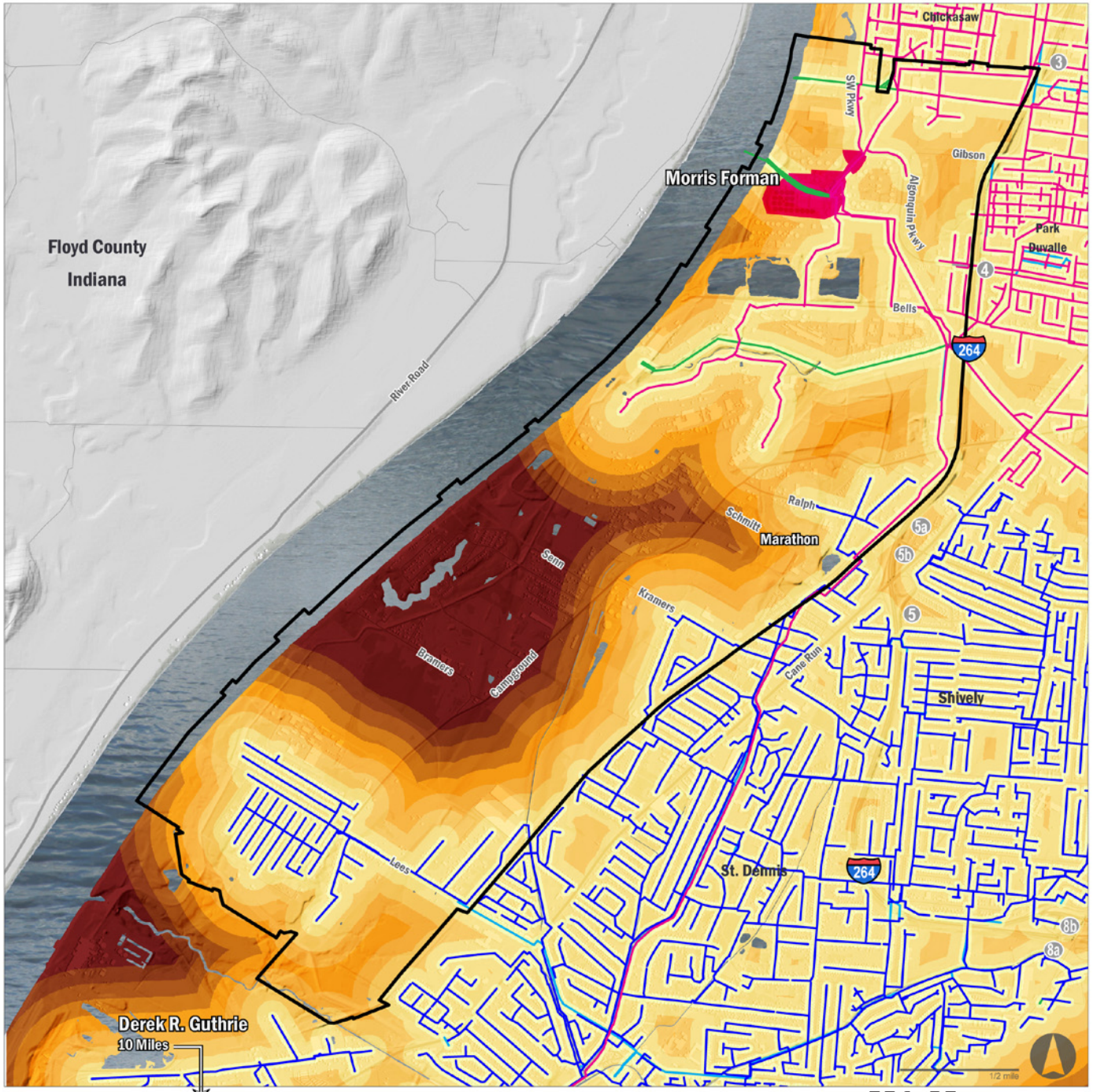


FIG 37 SITE CONSTRAINTS - DISTANCE FROM SEWER (IN FEET)

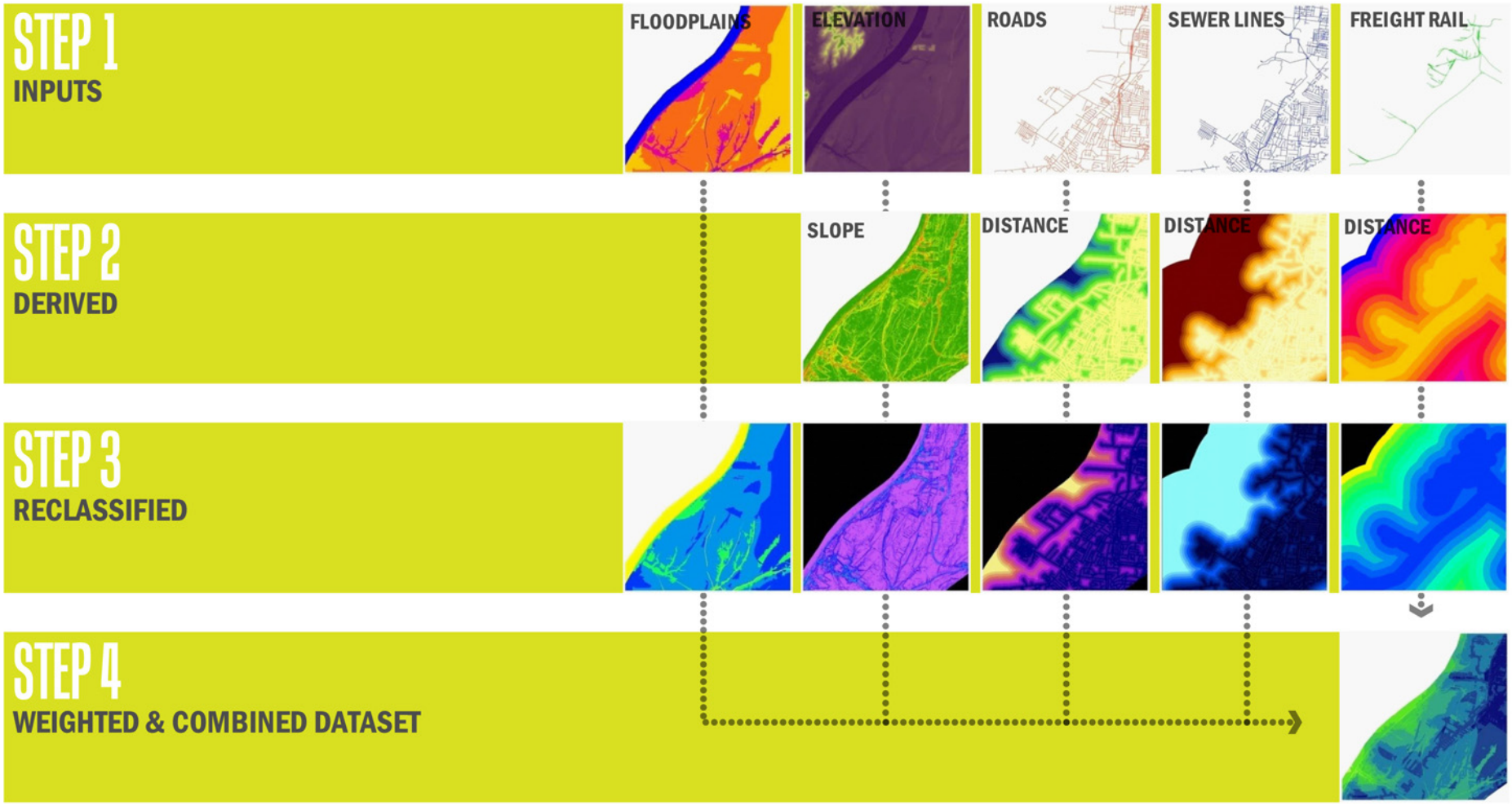


FIG 38 WEIGHTED OVERLAY STEPS

SUITABILITY ANALYSIS MODEL

An extension of geographic information systems-based (GIS) analysis was utilized in an exercise aimed at systematically modeling the suitability of the Rubbertown Corridor's land inventory for new industrial development. Suitability was modeled using a "weighted overlay" of the land constraints described above. Weighted overlay is a technique for applying a common scale of values to diverse and dissimilar input to create an integrated analysis. The factors of distance to residential areas, location within floodplains, degree of slope, distance to roads, and freight rail, and distance to sewer infrastructure were reclassified into a common evaluation scale of suitability and then weighted by importance and added together to produce an output raster.

This model should be viewed as a customizable tool for use in evaluating land development decisions and policy going forward, as the relative weights of the variables - and the variables themselves - can be adjusted and the suitability re-calculated at any time.

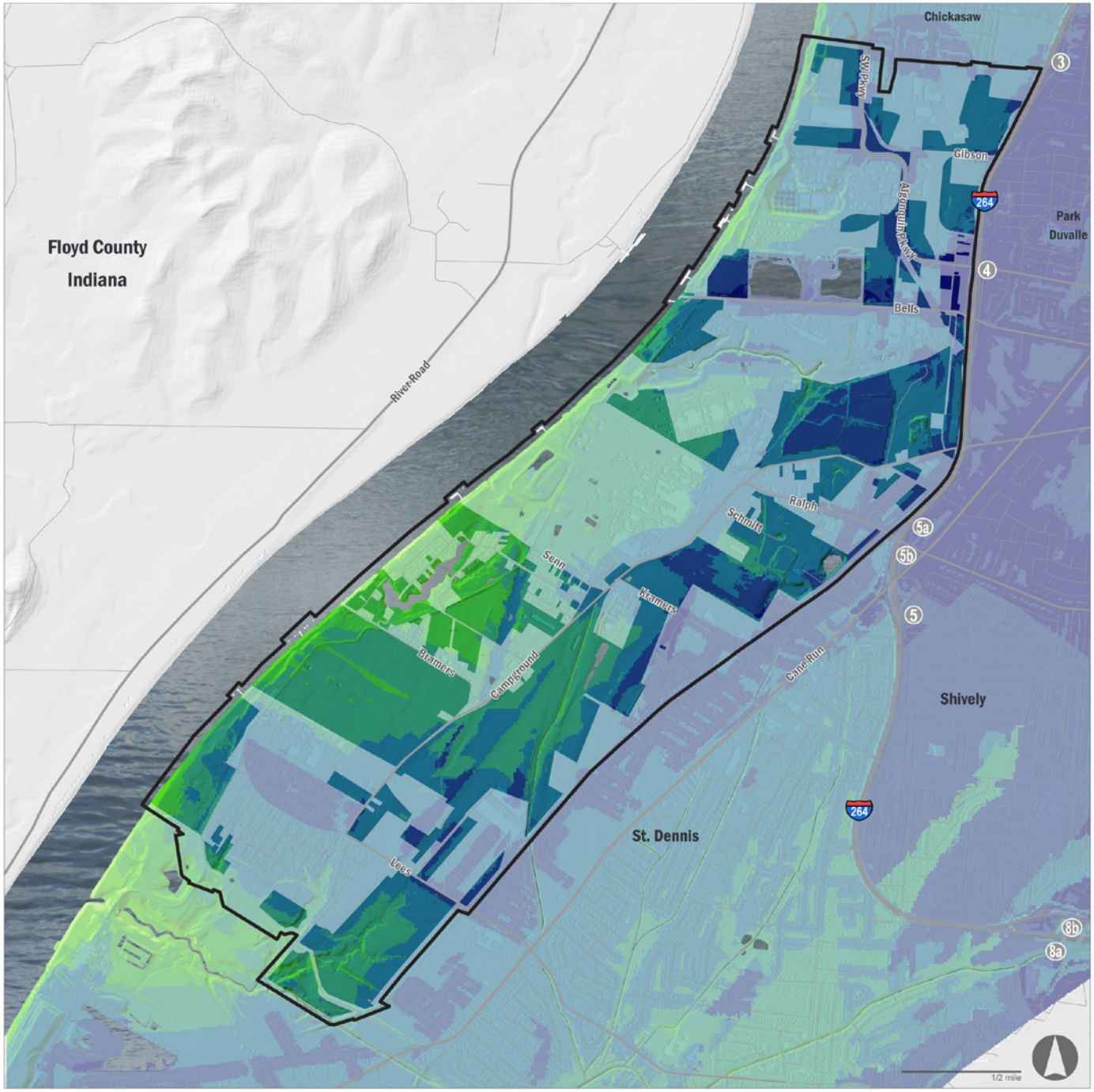


FIG 39 RUBBERTOWN WEIGHTED OVERLAY

RUBBERTOWN SUITABILITY ANALYSIS

SAMPLE MODEL 1

In this model, the factor of distance to residential areas was weighted more heavily than the other factors impacting industrial land inventory, which were each weighted equally. (In subsequent modeling exercises, the relative weights of each factor can be adjusted to emphasize other parameters as desired).

The resulting model indicates areas of highest suitability for potential industrial development in dark blue and areas of lowest suitability in light green, according to the critieria emphasized in this iteration. It is important to note that a single key investment - such as the extension of sewer service to the Atkemix property in Rubbertown south - can dramatically alter the relative suitability of individual parcels.

The shaded areas, while analyzed, were under active use at the time of the survey and therefore not included in this analysis for Rubbertown.

Development opportunities in the north, central and southern sections of the corridor.

SUMMARY

By developing typologies of land in Rubbertown, identifying possible constraints, and attempting to combine these challenges to development systematically, several conclusions have emerged from our analysis of the Corridor's inventory of potentially developable land:

- Small scale, highly visible opportunities for development exist along SW & Algonquin Parkways in the north where infrastructure and access are already good.
- A significant concentration of suitable land still exists at one of the key "gateways" to the district centered around Campground Road and Ralph Ave.
- Large, flat parcels for new industrial or logistics development are available south of Senn Road, but are somewhat constrained by a lack of sewer infrastructure and barge capability.
- Significant slack space (nearly 400 acres) exists on properties corridor-wide.
- Considerable former landfill sites exists in the Corridor that, due to good access, topography and infrastructure, could be considered for recycling into new development where appropriate.
- Environmental constraints such as "wet woods" (a local term for wet, swampy areas of wooded land) and standing creeks and tributaries impact many sites. Stormwater management is a continual concern.

Riverside Gardens Neighborhood

04

GOALS & OBJECTIVES

04 GOALS & OBJECTIVES

KEY OPPORTUNITIES & CHALLENGES

The feedback of key stakeholders – residents, business owners, and civic leaders – provided rich information about the economic, social, and environmental climate of the study area as well as a framework for understanding what the community of companies and residents view as their priorities for the future of Rubbertown. Each of the following reflects both an opportunity and a challenge.

ENVIRONMENTAL REGULATIONS

Regulations such as the STAR program result in a high-cost operating environment but also provides long-term community benefits and a mechanism to compel companies to adapt and compete in an atmosphere of increasing environmental regulation nationwide.

IMAGE & PERCEPTION

The Rubbertown Corridor has been described as "out of the way" and "off the radar" of area real estate brokers and developers. The aging chemical manufacturing facilities and rural character of the area undoubtedly contributes to this perception.

RELATIONSHIPS WITH SURROUNDING RESIDENTIAL COMMUNITIES

Rubbertown companies have demonstrated they want to be good neighbors as represented by the contributions to the Kroc Center (from several companies), Louisville Brightside Green Mile program (ASRC, Hexion, Dow), Cane Run school playground (many companies), and Habitat for Humanity (Dow Chemical, formerly Rohm & Haas). These examples of positive outreach and engagement of Rubbertown companies, however, need to be reinforced with continued and expanded dialogue with local residents.

UTILITY SERVICE

While much of the area does not have municipal sewer service, the nearby Morris Forman wastewater treatment plant operates at only 50% capacity, and transportation infrastructure in the area – interstate access, freight rail, river barge facilities – is excellent.

DECLINE OF TRADITIONAL MFG SECTORS

While many Rubbertown companies are closely tied to auto and construction industries, and have suffered declines in the recent economic climate, there continue to be opportunities including DuPont's current $45 million expansion to manufacture Tedlar film for solar panels.

QUALITY OF LIFE

Narrow roads crowded with truck traffic mix uneasily with bicyclists and kids waiting for the school bus on Ralph Avenue. A lack of sidewalks and lighting exacerbate the issue. This is an opportunity to advocate for infrastructure that will both dramatically improve the quality of life in Rubbertown and also modernize the look of the area.

DEVELOPABLE LAND

There are relatively few "shovel-ready" development sites in Rubbertown. However, they are discounted compared to other Louisville markets and often have better multi-modal access. Many properties are "balkanized" due to difficult access or are stigmatized from current or former uses including dumps or landfills. Many wetland areas remain in the Corridor that further constrains development opportunities in Rubbertown.

ADJACENCY TO EXISTING COMPANIES

Existing Rubbertown industries are powerful economic drivers, but concerns about their environmental impacts can be a deterrence to additional industrial development. There are opportunities to market the synergistic benefits that come with the tremendous expertise, experience, infrastructure, and market reach of the existing chemical companies to new uses to promote new jobs for Rubbertown.

WAREHOUSE SPACE

ASRC and Zeon both located their warehouse facilities in Riverport rather than closer to their plants in Rubbertown due to space constraints on site and the lack of land inventory in the area. This reveals a tremendous opportunity to pursue new logistics development as a part of a land development strategy.

RELATIONSHIP WITH THE CITY

Metro Government is eager to support the district in sustainable growth and employment and has resources at its disposal to do so.

A STATEMENT OF PLANNING GOALS & OBJECTIVES

"WHAT ARE WE TRYING TO ACHIEVE IN RUBBERTOWN?"

The public process of stakeholder engagement for the Economic Development Strategy including interviews, focus groups, advisory committee meetings, and project partner meetings has resulted in a broad articulation of goals and objectives that have come to serve as a guidepost for Rubbertown recommendations.

These **goals and objectives** are focused on further balancing the priorities of industrial uses with those of the residential neighborhoods that have co-existed in the study area for generations:

- ENHANCE THE QUALITY OF LIFE FOR RUBBERTOWN RESIDENTS & EMPLOYEES
- PROTECT & EXPAND VITAL INDUSTRIAL DISTRICT JOBS
- LEVERAGE SYNERGIES & COOPERATION TO STRENGTHEN INDUSTRIES
- IMPROVE THE RELATIONSHIP BETWEEN INDUSTRIES & NEIGHBORING COMMUNITIES
- RAISE THE AWARENESS & IMPROVE THE IMAGE OF THE RUBBERTOWN INDUSTRIAL AREA
- IMPROVE THE INFRASTRUCTURE & CHARACTER OF THE AREA
- IDENTIFY & LEVERAGE VACANT LAND OPPORTUNITIES
- EXPLORE STRATEGIES TO ADDRESS CONTAMINATED LAND

ZEON CHEMICALS ON BELLS LANE

SOUTHWESTERN PARKWAY

05

TOWARD A STRATEGY

05 TOWARD A STRATEGY

The Rubbertown Economic Development Strategy planning process revealed a unique opportunity to consider fine-grained, contextual and strongly place-based recommendations alongside policy and economic strategies. A strategy is fundamentally a plan of action and the following section outlines such a plan for the Rubbertown Corridor, grouping the individual recommendations into six categories of actionable items that are closely tailored to the realities of the Rubbertown Corridor:

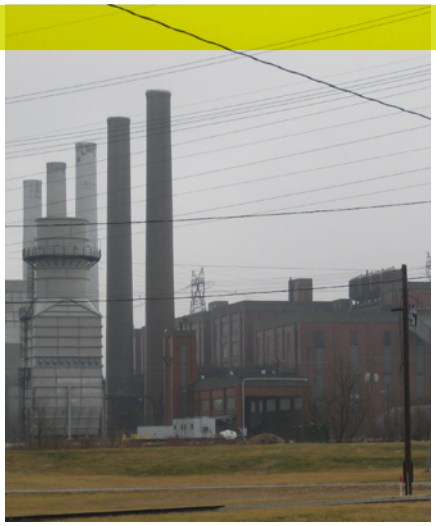
1. **Rubbertown 2.0 - Redefine the Identity and Communicate it.**
2. **Demonstrate a Long-Term Commitment to Sustainability.**
3. **Leverage Opportunities for Cooperation and Synergy.**
4. **Improve Infrastructure – Improve Quality of Life.**
5. **Pursue Sustainable Business Development Strategy.**
6. **Pursue Catalytic Land Development Opportunities.**

The recommendations in this section are drawn from relevant and innovative research around ideas such as Eco-Industrial Park development and Cradle-to-Cradle production. Related precedents were identified and integrated into the discussion of recommendations below to provide links to other cities and industrial districts that have successfully tackled specific issues of concern to Rubbertown.

This is the beginning of a rich conversation about the future of industry in West Louisville and the interplay between industrial use and community concerns. As such, the recommendations are interrelated and address multiple goals articulated for the Corridor. The organization of the report is intended to help organize implementation activities around the key themes listed above.

As a plan of action, the recommendations include short-term, inexpensive and achievable initiatives in addition to long-term improvements and development programs. These short-term tactics are intended to generate a “buzz” about Rubbertown, which is vital to raising the awareness and interest in the area and in generating the momentum necessary to implement longer-term and more expensive improvement measures.

Looking northwest from Camp Ground & Senn Roads toward the Citgo Terminal.



Paddy's Run Generating Station (inactive) on Bell's Lane

Looking west on Camp Ground Road from Cane Run

1 RUBBERTOWN 2.0 - REDEFINE THE IDENTITY AND COMMUNICATE IT

The combination of intense industrial activity, scrap yards, and major utilities like the sewer treatment plant has long established a negative image for Rubbertown. The negative perceptions associated with "Rubbertown" is neither good for attracting modern, green businesses to the area nor for the property values of nearby housing. The following recommendations seek to (a) Forge a distinctive identity for the Corridor, and help to (b) Broaden the image of Rubbertown in the public eye.

1.1 Develop a "Made in Rubbertown" marketing campaign

Going hand-in-hand with the development of a new brand reflecting Rubbertown's contemporary identity, the district's products and impact on the local economy should be highlighted with the development of a "Made in Rubbertown" marketing campaign. This could entail simple graphic profiles of the many products and industries made and represented here, placed on a new district website (Recommendation 1.3) and linked to Metro Government EDD, GLI and other local sites. A short video production or school tours of publicly-accessible areas of the plants could also be an effective means of "opening up" the plants in the public eye. A better understanding of Rubbertown's functions and increased communication would go a long way toward improving the district's relationship with surrounding communities.

1.2 Develop & disseminate conceptual site designs for key properties

One of the most important strategies for strengthening Rubbertown will be an early and aggressive campaign to attract interest in key properties in that corridor whose redevelopment would have a strong catalytic effect. The dissemination of a site design for the Atkemix Ten property in Rubbertown south, for instance, would help potential developers, funders, and the community at large to envision redevelopment scenarios that could energize the corridor and draw further investment to the area.

call us an industrial park"

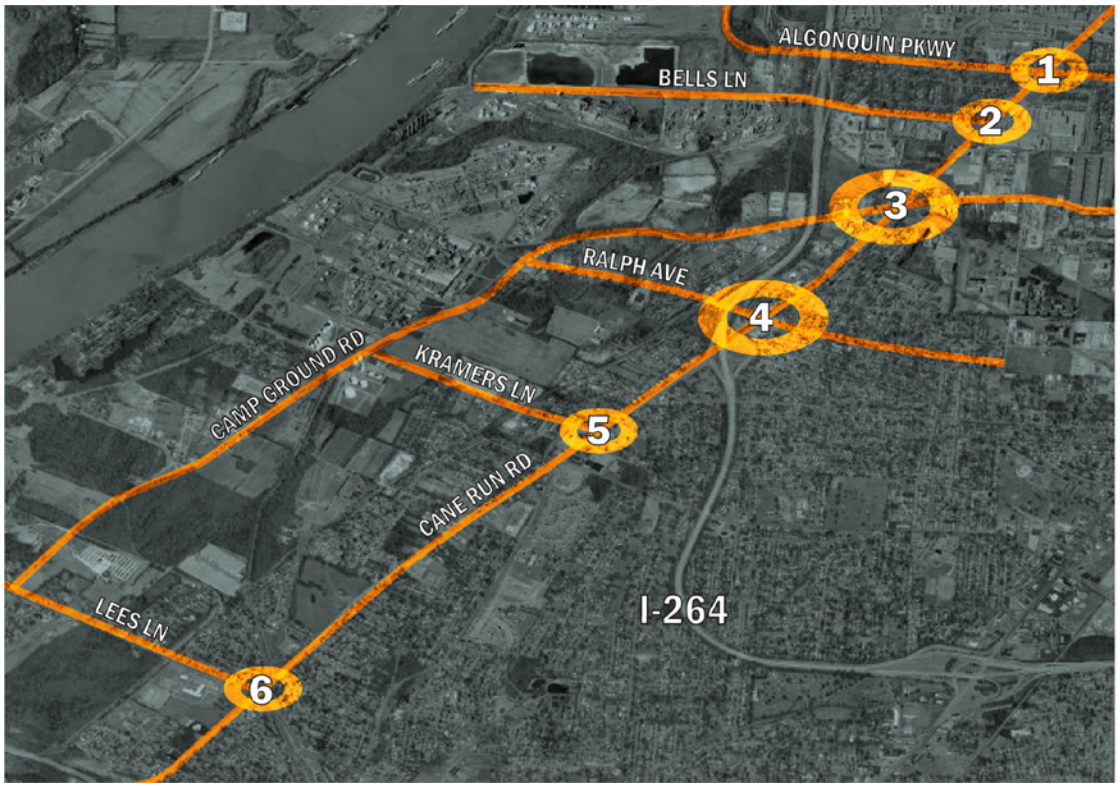
FIG 40 MADE IN RUBBERTOWN

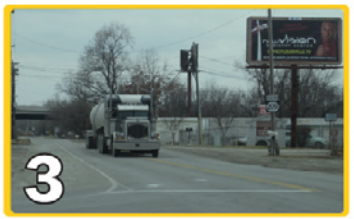
1.3 Create a strong on-line presence and marketing materials

Along with a new face, Rubbertown needs a new voice. Connecting the community to the Louisville Chemistry Partnership (LCP) – along with its website and organizational resources – is a vital first step in the development of an expanded and more robust initiative to communicate and coordinate partnerships with surrounding communities and the Metro council. In addition to a new Rubbertown brand and a "Made in Rubbertown" campaign, the website could host downloadable .pdf brochures and profiles of available properties in the district. A beefed-up and re-branded LCP could serve as a step toward becoming an Industrial Business Improvement District (IBID). An IBID is a district funded through an assessment of local companies to provide funds for security, landscaping and marketing. An economic feasibility study would need to be conducted to determine the potential and interest for such an idea.

1.4 Design primary gateways

Rubbertown's boundaries are indistinct. It is critical that a strong entry experience correspond to Rubbertown's image as a coherent industrial district. Currently a jumble of vacant lots, residences, trucking, recycling, and dumps line the primary entryways into the Corridor, and no distinct point of entry into Rubbertown proper can be perceived. A modest physical investment here would go a long way toward reinforcing the perception of Rubbertown as an active industrial district. The application of simple and inexpensive urban design treatments such as paint, signage, and landscaping at the following gateways would clearly articulate entry into the Rubbertown industrial district:





1 Algonquin Parkway
2 Bells Lane
3 Cane Run & Camp Ground Road (*Primary from central Louisville*)
4 Cane Run & Ralph Avenue (*Primary from I-264*)
6 Lees Lane

FIG 41 RUBBERTOWN GATEWAY OPPORTUNITIES

FIG 42 RENDERING OF GATEWAY AT RALPH AVENUE AND CANE RUN LANE INCLUDES SIGNAGE, LIGHTING, SIDEWALKS, AND LANDSCAPING. RIGHT: EXISTING RALPH AVENUE.

Riverport wayfinding signage on Cane Run

1.5 Introduce signage & wayfinding

Gateway and wayfinding signage are an easy and inexpensive opportunity to delineate and re-brand the Rubbertown industrial district, while also serving to proclaim its existence to the outside world. Large gateway signs should adorn primary points of entry to the district, and a handful of directional signs indicating distance and direction to Rubbertown could be strategically located along Cane Run, I-264 exit ramps, or the Algonquin Parkway. In addition to these opportunities, a designer should be retained to brand and design a network of signs and markers that will visually unify the Rubbertown area.

1.6 Creatively integrate public art

Strategically placed public art has the potential to create moments of excitement and surprise for both employees and visitors. It also helps connect the Corridor to its adjacent densely populated urban area whose roads, bike lanes, and riverside paths are shared by the companies, other local businesses and the community alike. The muscular forms of the petrochemical storage tanks and pipelines along with the striking masses of buildings, stacks and superstructures offer limitless possibilities for small complementary design flourishes. The tanks themselves provide even more dramatic opportunities. Because Rubbertown's Citgo and Marathon tank farms are in the glide path of Louisville International, their broad tops could be utilized for historical murals depicting Fort Southworth, or commemorating the birthplace of Muhammad Ali. In addition, the large facades of the tanks offer opportunities for bold colors and other types of murals directed at passerbys on neighboring roadways, as illustrated on the following page.

PRECEDENT

Petty's Island King Ralston Mural, Philadelphia, PA

Petty's Island is a 400-acre fin of land in the Delaware River between New Jersey and Philadelphia that is owned by Citgo and currently utilized as a petrochemical storage tank farm. Duke Riley, a Boston artist participating in a Philadelphia printmaking festival called Philagrafika, debuted a project based on the pre-Citgo history of Petty's Island. In addition to artifacts recovered from the homesite of a family that had inhabited the island for generations, including photographs, and commemorative plates, Riley covertly kayaked to the island at night to paint a mural of King Ralston (Laird, the family patriarch) atop one of the tanks, which is now visible from the air.
http://citypaper.net/articles/2010/01/28/duke-riley-pettys-island-philagrafika

Sprague Energy Tank Farm, Portland, ME

World's largest public art project, to be visible from space when complete in 2012. "The tanks that they selected are the ones that will be easily visible from the highway," the project manager said, noting the proximity of Interstate 295 and the Portland International Jetport. "Their thrust is to make it so that the local folks can see it; if you're flying in and out of the airport you'll be able to see the tops of eight of the tanks that they're going to be painting. You're going to see the work as you come in over the tanks. You'll be able to see it from the highway, the main arteries. As a matter of course, since they're so large, you'll be able to see it from space."
http://www.theportlanddailysun.com/cgi/story.pl?storyid=20091015109011000927

FIG 43 ABOVE: RENDERING OF PUBLIC ART AND BIOREMEDIATION OPPORTUNITIES AT TANK FARM. LEFT: EXISTING TANKS.

1.7 Expand the presence of Rubbertown Community Advisory Committee (RCAC) and link activities with the West Jefferson County Community Task Force (WJCCTF) to actively engage community

Both the RCAC and the WJCCTF play vital roles for the community in terms of collecting data, coordinating with Rubbertown industries, and providing a forum for residents to express their concerns. Through this planning process, however, it became clear that there is not yet enough awareness of these organizations and their work. The RCAC and WJCCTF should work together to promote this study and expand their voice as the strategy moves toward implementation. This would result in a number of specific actions including placing this strategy prominently on their websites, presenting their mission and results from this study at the monthly meetings of nearby community organizations, creating a Facebook page to communicate information, and ultimately, upgrading their web presence to summarize key issues and strategies under discussion for the area.

1.8 Raise awareness of Green Jobs in Rubbertown

Cities and municipalities across the nation have been clamoring for so-called “green manufacturing” jobs in recent years. Yet, Rubbertown has been quietly growing this very sector. A number of new jobs are expected as a result of DuPont’s expansion of the vinyl flouride (a primary component of Tedlar for solar photovoltaic (PV) panels) manufacturing unit, for instance. The expansion is due to increased demand for solar energy products globally – and the new jobs are expected to consist of local hires. Louisville Metro Government Economic Development Department and Greater Louisville Inc. should work with LCP to develop a communications strategy to keep the community apprised of such developments and raise the profile of companies contributing to the availability of green jobs in Louisville.

Rooftop solar array, Riverside, California

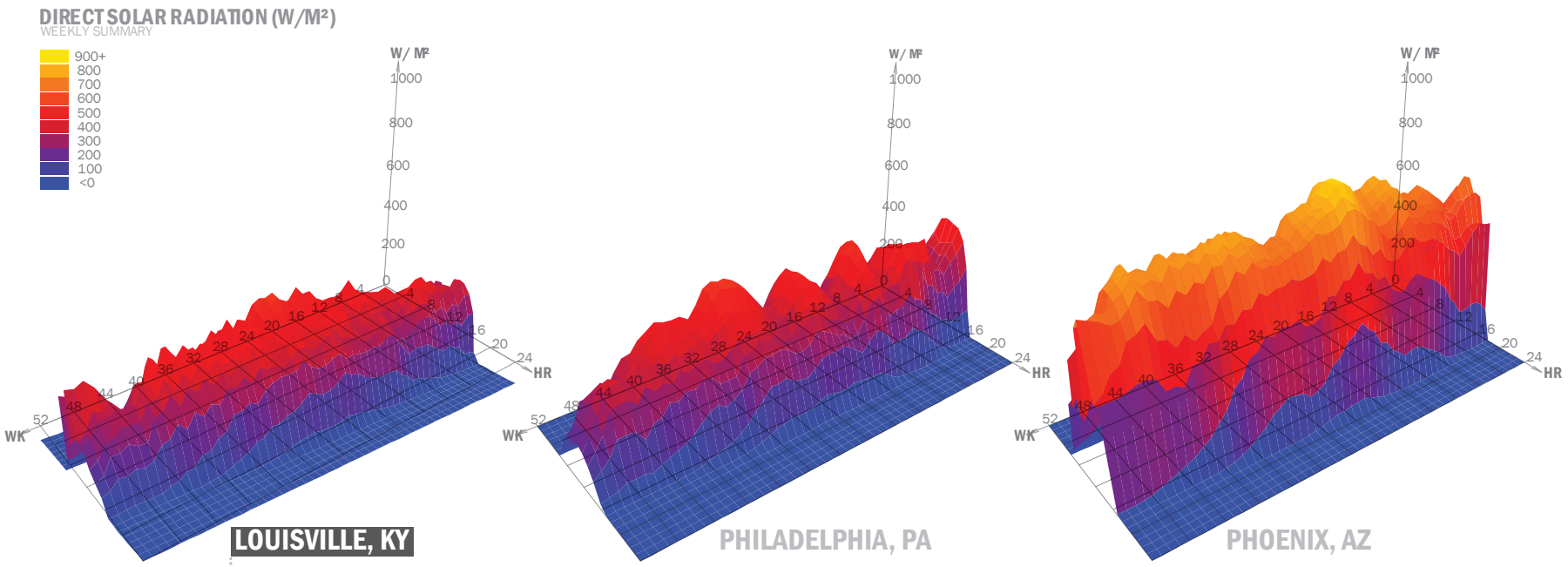
Wind turbine maintenance

1.9 Consider Renaming Rubbertown

What's in a name? A lot. Rubbertown would benefit tremendously from the clear-cut identity that a new name and brand could bring. The term Rubbertown harkens back to long-gone days when the complex served the synthetic rubber needs of the wartime U.S. military. Today, large diverse companies like DuPont, Dow, Hexion, and Lubrizol make products for the space shuttle, sprinkler systems, and solar panels. Locally-owned companies like Carbide Industries make products vital to the U.S. steel industry. Like Riverport to the south, the district should adopt a clean, simple moniker that reflects its aspirations and broadcasts its status as a discrete industrial park.

2 DEMONSTRATE A LONG-TERM COMMITMENT TO SUSTAINABILITY

Greening Rubbertown is not merely desirable – it is vital to the district's survival and success into the future. Thousands of quality jobs and millions of dollars in local revenue will depend on the ability of Rubbertown plants to anticipate and adapt to ever more stringent environmental regulation. Legislation aimed at limiting greenhouse gas emissions is gaining momentum with state and federal lawmakers around the nation. It is critical that the corridor's manufacturing operations begin to progressively upgrade its methods of energy use, material flows, waste management, water use, and begin enhancing natural systems in order to meet the demands of the growing sustainable market. Based upon energy profiling conducted for the Louisville area, a combination of strategies stressing energy efficiency upgrades to the industrial complex will be a particularly effective means of moving toward the ideal of net carbon zero operations. Of equal importance is the close proximity of Rubbertown plants to the dense residential neighborhoods of West Louisville – communities that value clean air, open space and river access.



An analysis of the potential wattage generated yearly in the region, compared to that of cities implementing large scale pv arrays, shows that although solar power can offset some of the electricity demand, reaching clean energy goals should focus heavily on engery efficiency and conservation strategies.

FIG 44 ENERGY GENERATION ANALYSIS FOR LOUISVILLE

Ecotect allowed Interface Studio to profile the Louisville area to determine suitability for several renewable energy alternatives, such as wind, solar, geothermal, and river-hydro, with reference to the generally accepted minimums for each mode. An initial profile of West Louisville revealed that the region does have some potential for the generation of electricity from solar power. Average amounts of sunlight in Kentucky on a daily basis range from a peak of 5.6 hours in June to a low average of 2.7 hours of sunshine a day in December, averaging 4.5 hours of daily sunlight over the course of the year. Kentucky's lower sunlight potential over the course of an entire year makes it improbable that multi-megawatt projects would be cost effective and viable in providing all the energy needs for these industrial operations. This, combined with the fact that the region falls out of the range for effectiveness of wind turbines and hydropower, makes a better case for focusing on creating highly energy-efficient buildings and operations. Efficiency strategies include integrating energy-efficient equipment, retrofitting building envelopes, implementing geo-exchange systems, reducing heating and cooling loads, utilizing passive design strategies such as daylighting and proper orientation, and utilizing excess heat produced in manufacturing processes. These measures aid in reducing energy demand, moving plants toward an ideal of net carbon zero operations.

2.1 Explore leasing space on top of large-floorplate facilities for LG&E solar panel arrays

Excel distribution, Hexion, Dow, Arkema, and American Synthetic Rubber Corp. (ASRC) each have large-floorplate buildings that could be leased to LG&E (currently owned and operated by E.ON U.S.) for the installation of photovoltaic (PV) panel arrays that could provide clean, renewable solar energy to the Louisville region's power grid. While LG&E does not currently generate renewable energy, it does offer a "Green Energy" carbon offset purchase program to its customers through its parent company, E.ON U.S. For as little as $5 a month, E.ON ensures that 300kWh of renewable energy from mixed sources (including hydroelectric, biomass, landfill, wind, and solar) is delivered into the KU and LG&E grid. Louisville industrial plants may also participate in this program in $13 per month increments.

FIG 45 SAMPLING OF LARGE-FLOORPLATE FACILITIES IN RUBBERTOWN

PRECEDENT

ProLogis/Recurrent Partnership, Spain

Recurrent Energy announced a deal in Spain to install 4.8 megawatts worth of solar panels on rooftops leased from distribution company ProLogis. In this model, Recurrent owns and operates the panels and sells the electricity the panels generate. ProLogis gets a one-time construction management fee and an annual rental payment. This distributed solar model is being pursued in the U.S. by a handful of utilities. Southern California Edison, for example, said it plans to install as much as 250 megawatts worth of solar energy capacity on hundreds of commercial rooftops. The combined output of Recurrent's installations in Spain, which are set to go online in 2010, is enough to power well over 1,000 homes.

2.2 Create a Rubbertown energy profile to assess opportunities for energy cascading, co-generation, alternative energy and efficiency capacity

Innovative approaches to generating alternative energy should be considered and evaluated as Rubbertown continues to evolve. Specifically, an energy profile should be developed that evaluates the potential to utilize some of the following innovative techniques:

> **Capturing waste heat** from plant processes and cascading the heat downstream to other plants to supplement their energy needs and reduce their grid reliance.
> **Converting smokestack CO2 to biofuel and bio-coal with algae tube technology**, providing a significant source of biofuel for a transition to cleaner trucking in the region while also reducing greenhouse gas emissions by 40%.
> Partnering local coal-fired powerplants with the Department of Energy's Industrial Technology Program (ITP) to **implement new co-generation technologies capable of recovering thermal energy** normally lost in the power generation process and pipe the energy out to buildings in the district for space heating, hot water heating and air conditioning.
> Utilizing the expansive parking, roads and truck circulation areas in Rubbertown for **geothermal heat harvesting under asphalt**.

PRECEDENT

GreenFuel Technologies Algae
Carbon-Capture Technology, Cambridge, MA

Isaac Berzin founded GreenFuel Technologies based on a method of capturing CO2 from smokestack emissions using algae, and turning the result into biofuels including biodiesel, ethanol, and even a bio-coal substitute. His process, an evolution of technology he developed for NASA in the late 1990s, captures more than 40% of emitted CO2 (on sunny days, up to 80%) along with over 80% of NOx emissions; in turn, it produces biodiesel at rates-per-acre that could make a full conversion to biofuel for transportation readily achievable.

www.worldchanging.com/archives/003999.html

Road Energy Systems
Rotterdam, Netherlands

Asphalt absorbs sunlight and turns it into heat. During a hot summer it can reach over 140 degrees Fahrenheit (60 degrees Celsius). This is one of the main reasons for the urban heat island effect. Harvesting this heat could help cool roads and produce energy. Huge tarmac covered airfields or parking lots are ideal for road energy systems. A 400-square-meter parking lot can produce enough energy to heat a 1,500-square-meter office building. Dutch building company Ooms uses a series of connected water pipes embedded in the asphalt to harvest the heat from streets. The picture shows a highway near Rotterdam, Netherlands, where water cables are laid underneath a sheet of asphalt.

PRECEDENT

Somerton Tanks Urban Farm, Philadelphia, PA

Somerton Tanks Farm is an experiment in bio-intensive urban agriculture that represents a partnership between the nonprofit Institute for Innovations in Local Farming and the Philadelphia Water Department, which was exploring innovative and environmentally friendly ways to utilize the expansive grassy lawns that surround its many facilities. "We've converted many to meadow grass, but we were looking for something that was more productive for the city and for the economy," says Nancy Weissman, economic development director for the water department. "We also want to encourage sustainable business activity in and around the city to protect our watershed." The goal was to see if the 1/2-acre farm could produce $25,000 in gross revenue, an initial benchmark met the first growing season. Last year, in its third season of operation, the farm surpassed $50,000 in sales ($52,200, to be exact).
www.newfarm.rodaleinstitute.org/features/2006/0606/somertontanks/sullivan.shtml

Biddeford Industrial Park, Biddeford, ME

Erin MacGregor-Forbes has constructed a beekeeping operation on the grounds of the Biddeford Industrial Park, in Maine. A controller for Sterling Rope – a climbing rope manufacturer – Erin has utilized native wildflowers and weeds in the slack spaces of the park to sustain her bees and beautify the area at the same time.
www.thedailygreen.com/green-homes/latest/urban-beekeeping-47093003#ixzz0IlYXT6CY

2.3 Explore the use of slack space around tanks and buildings – as well as the tops and sides of the tanks themselves – for habitat restoration and bioremediation

Before Rubbertown was Rubbertown, it was truck farms and naturally wooded wetlands. Today, there remains a substantial acreage of open land to be found in between the large industrial structures – including tanks, rails, buildings, and pipelines – that dominate the heart of Rubbertown. This idle land represents opportunities for alternative and productive uses in keeping with the goals of this study. While active uses are often impossible due to safety or security issues, several passive options should be considered:

> **Plant switchgrass** – a raw material for biofuels and a tough native grass capable of bioremediating soils – in the slack space between pipelines, rail trackage, and plant buildings.
> **Plant alfalfa grass or poplar trees** in the slack space between petrochemical storage tanks to clean the benzene associated with these facilities.
> **Plant vines and other climbing plants** from the crowns of tanks to green and beautify the area.
> Utilize the sides and tops of tanks and high buildings to **construct high-vantage raptor-nesting boxes** where the birds can nest unmolested and spot prey.
> Encourage raised-bed **flower farming on accessible slack space areas** such as landscaping or lawns – the prominent lawn between Hexion's plant area and Camp Ground Road is one example.

FIG 46 ABOVE: RENDERING OF BIOREMEDIATION IN TANK SLACK SPACE AND RAPTOR NESTING BOXES ON TANKS THEMSELVES. LEFT: EXISTING TANK FARM.

2.4 Implement multifunctional Stormwater Best Management Practices (BMPs)

Louisville's current stormwater and sewage infrastructure relies on a combined sewer overflow (CSO) system, which was built from the 1860s up until the 1950s. Combined sewer overflow occurs when heavy rains overload sewer systems that combine wastewater and stormwater, then release this polluted water into rivers or estuaries without treatment, resulting in threats to water quality and public health. In Rubbertown, sewer infrastructure is mostly in place but there are gaps in service particularly in the southern end of the study area. In addition, due to the flat topography of the Corridor flooding is a persistent concern as stormwater collects and pools throughout the area. Industries in the area should reduce their dependence on the municipal sewer systems, managing and cleaning water on-site, and set goals for 100% on-site stormwater infiltration to eliminate CSOs. This can be done by implementing multifunctional stormwater BMPs that include:

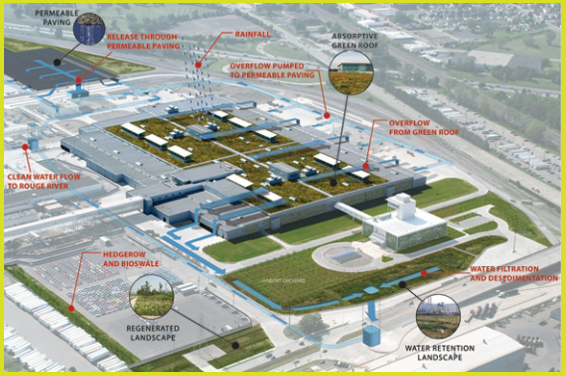
> Reducing impervious surface area, allowing rainwater to infiltrate on-site and mimic natural drainage patterns instead of entering storm sewers. Implementation of porous pavements and reducing parking ratios by encouraging carpooling and public transportation can aid in this target.
> Harvesting non-potable water for industrial and/or landscape uses, to lower water consumption. Water can be collected and used from sources such as rainwater from rooftops, graywater, air conditioner condensate, or stormwater basins, and used for process water, truck cleaning, toilets, and landscaping.
> Slowing down the flow of stormwater by retaining it in landscaping features, such as green roofs, vegetated bioretention facilities, rain gardens, constructed wetlands and bioswales.

Implementing these techniques provides both environmental and economic benefits and can save in water pollution abatement costs each year. Industries within the region can take advantage of incentives for BMPs which currently exist via the Louisville & Jefferson County Metropolitan Sewer District (MSD). MSD offers credits in stormwater utility rates for commercial properties with onsite detention for control of peak flows. The range of credits varies depending on how the detention basin functions.

PRECEDENT

Herman Miller Greenhouse, Holland, MI

In 1995 Herman Miller Inc. commissioned William McDonough + Partners to design a 295,000-square-foot office, manufacturing, and distribution center in Holland, MI. The Miller SQA group chose a "natural" landscape that eliminates the need for herbicides, fertilizers, and regular mowing, and over the years will reduce operating costs as well as groundwater contamination. The site is devoted to wetlands, wildflowers, and wildlife. Parking is organized along an access road, limiting paved surfaces to heavily trafficked areas. Cars and trucks are shielded from the view of nearby residences by large earthworks and a newly planted forest. The passive solar heating and natural ventilation, high-efficiency lights with electronic sensors, natural drainage, native plantings, constructed wetlands, and commitment to recycling have substantially increased both worker productivity and quality of work, and decreased natural gas consumption, water and sewer costs, and electric costs when compared to their previous facility. Estimated annual savings are in excess of $35,000.



www.Buildinggreen.com

River Rouge Ford Truck Plant

Dearborn, MI

The redevelopment of the River Rouge Ford Truck Plant in Dearborn, MI has become a model of environmentally-sensitive manufacturing and brownfield remediation at one of the world's largest and oldest industrial icons. Designed by McDonough + Partners (William McDonough and Michael Braungart are the authors of Cradle-to-Cradle – a seminal book articulating the concept of closed-loop manufacturing), the redevelopment of the 1917 plant includes a 10-acre green roof planted with native sedum and dramatically reduces stormwater runoff by retaining the first inch of rainfall, then diverting overflow into porous paving and swale systems. The project also utilizes phytoremediation (plants capable of ridding soil of contaminants), solar and wind energy generation, and green screens. Building energy costs are reduced by 7% and the roof is part of an $18 million rainwater treatment system designed to clean 20 billion gallons of rainwater annually, sparing Ford from a $50 million mechanical treatment facility.

COOPERATIVE EFFICIENCIES

Shared facilities provide competitive advantages for savvy processors. Forging partnerships to enhance the bottom line, leverage strengths and/or compensate for limited resources has become a routine element of corporate business strategies in recent years. The prevalence of joint ventures, outsourcing, and close manufacturer/supplier relationships are proof of this trend. Along these lines, it is clear that there is significant overlap in the operations of many of the Rubbertown Corridor's core plants and facilities – and this overlap represents opportunities to reduce redundancy. By doing so, Rubbertown companies can reduce costs and increase regional and global competitiveness.

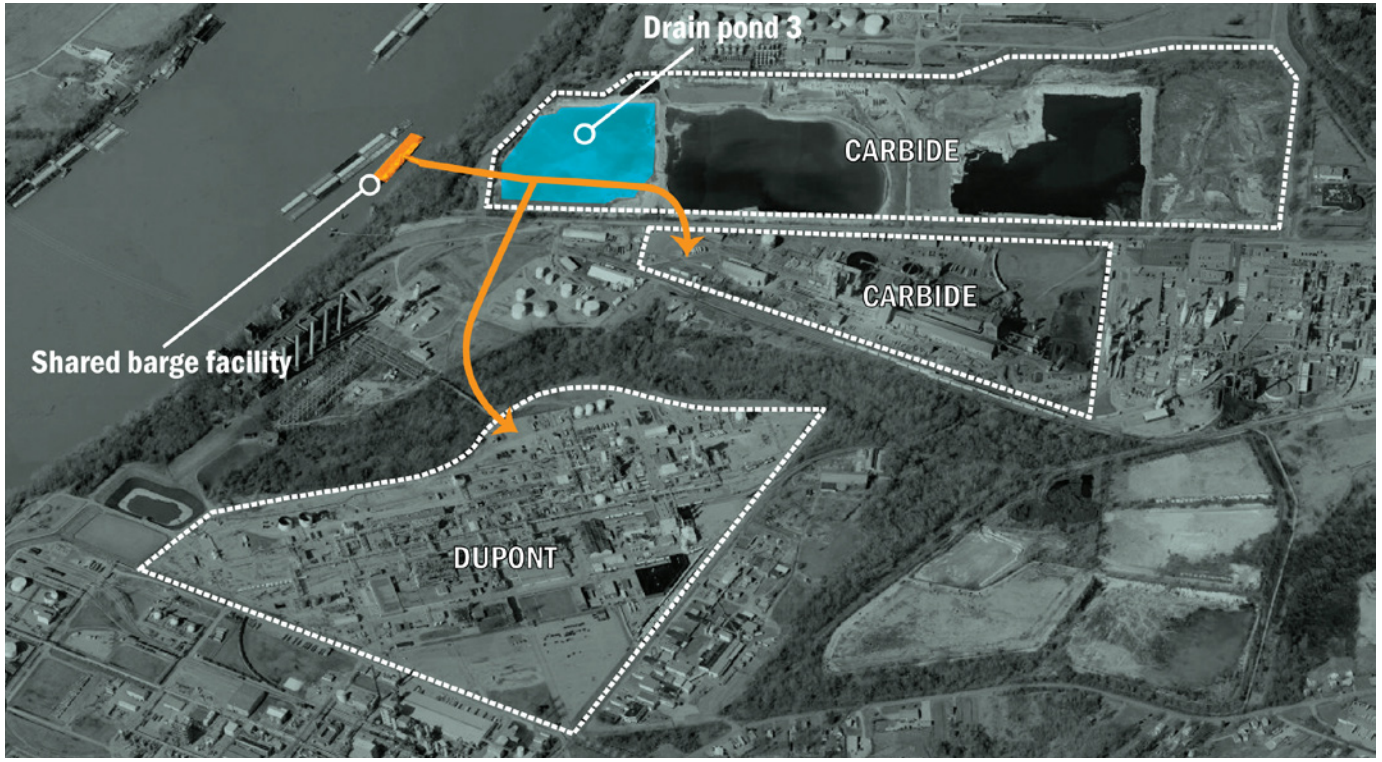


FIG 47 DIAGRAM OF POTENTIAL SHARED BARGE FACILITY

3.1 Pursue construction of a shared barge facility off Bells Lane

Sharing the costs of construction and maintenance of a barge facility could provide significant savings for participating companies. One such project was proposed by a Rubbertown company consulted for the study, at the end of Bells Lane. In addition to redeveloping an existing but idle facility that is currently leased by a barge operation across the river for mooring purposes, Carbide Industries has proposed draining the area known as Pond 3 on their large settling pond property (located along the northern edge of Bells Lane) and utilizing it for the lift and conveyance structures required for a shared barge facility.

PRECEDENT

Chemical Heritage Foundation, Philadelphia, PA

The Chemical Heritage Foundation's museum tells the engrossing tale of the origins, impacts and perils of chemistry. "If you've heard of nylon, rayon, vinyl, Teflon, or Tupperware, then you've heard of polymers. Discover the people and science behind these "macromolecules." Except for a few rare objects, no glass separates visitors from the artifacts and images on view – an eclectic mix of paintings, documents, chemical instruments, and products drawn from supermarket and department stores shelves. The concept, says designer Ralph Appelbaum, was to recreate the feel of an actual laboratory. The most high-tech feature is a video column at the center of the space. It features a deconstruction of the Periodic Table of Elements on one side; on the other, visitors can use an interactive program to explore the intersections of chemistry and modern life, famous chemists, and other topics.

Wood Science Innovation Center, Ontario, Canada

The Wood Science Innovation Centre will stand at the heart of the Ontario East Wood Centre & Eco-Industrial Park. The plans for the Wood Science Innovation Centre include a:

> Research, Development and Demonstration Facility, to showcase product RD&D
> Orientation Centre, to offer education, training and conference services
> Administration/Support Commons, to provide a wide range of pre-commercialization and incubation services, and to support pilot projects
> Pilot Plant Area, to house facilities where prospects can set up a model manufacturing operation.

http://www.woodcentre.ca/index.php?id=aboutus

3.2 Evaluate the potential of a Rubbertown Cooperative Resource Center

Rubbertown companies have been receptive to the idea of sharing redundant functions – especially ones peripherally related to their operations. There are opportunities for the following functions to be bundled together at a shared facility in the heart of Rubbertown – a Cooperative Resource Center. In addition to a significant reduction in costs that could be realized over the long term for participating companies, combining these functions could provide seamless and consistent integration of security and emergency response.

> **Safety training**
> **Security**
> **Emergency Response**
> **Maintenance**
> **Marketing**
> **Interpretive center - welcoming and educating the public**

The public is increasingly interested in how things are made. An interpretive area housed within the Cooperative Resource Center could provide a fascinating hands-on introduction to the products and processes of the Rubbertown Industries. From an acrylic ball- or bead-pit for kids, to a carbide and non-carbide steel breaking exhibit, a "Please Touch" interpretive area could help to bridge the chasm between Rubbertown industries and Louisville communities with education — and could even provide a venue for dialoguing about the industrial ecology of Rubbertown.

Chemical Heritage Foundation exhibits.

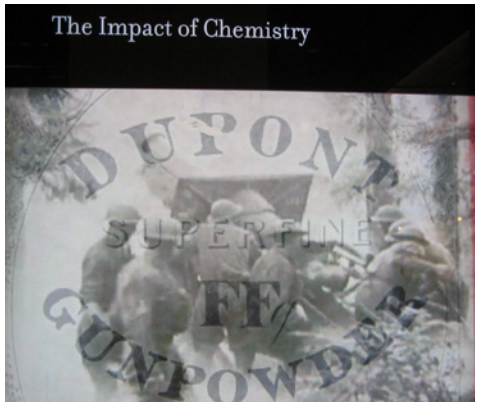


FIG 49 POTENTIAL COOPERATIVE RESOURCE CENTER.

PRECEDENT

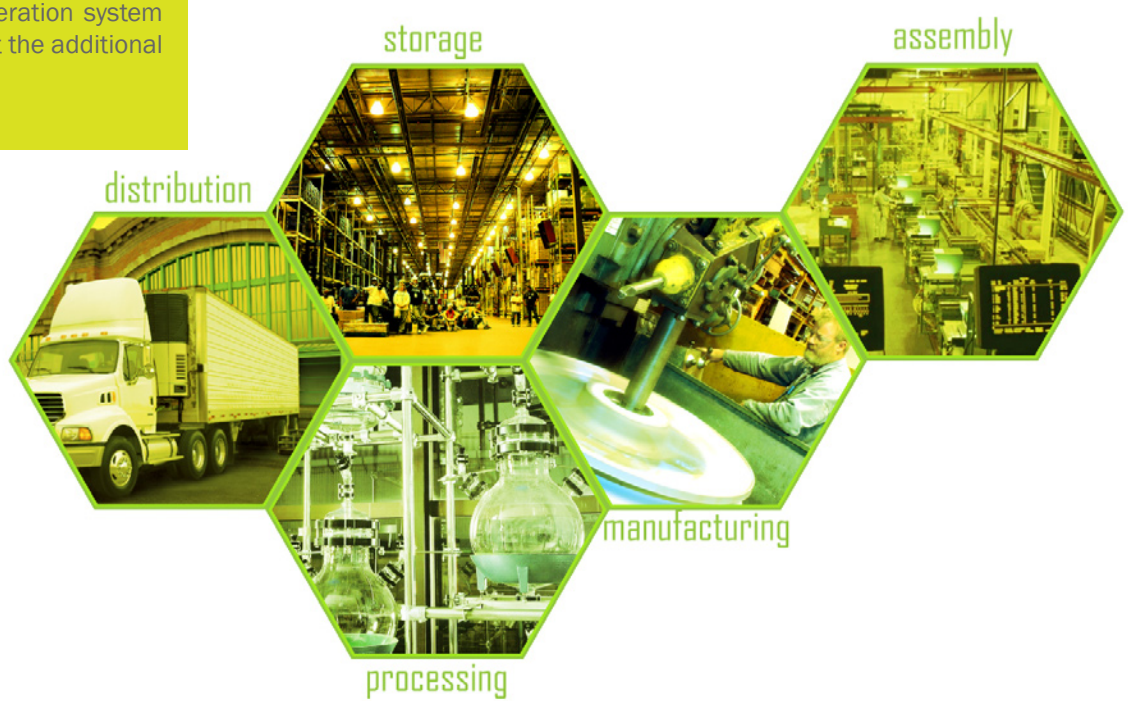
Foodtown, Sao Paolo, Brazil

The Foodtown complex utilizes shared facilities for McDonald's suppliers including a meat plant, bakery and a distribution facility. "It's a concept by which you minimize your logistical costs by processing your high-movement items in a single location." The companies jointly own the waste treatment operation and a refrigeration facility, as well as fire protection systems, parking facilities and utilities, including natural gas and hot water. "A stand-alone distribution facility ordinarily would require a complete refrigeration system for its storage coolers and freezers and several duplicate components as a swing unit for regular maintenance and possible breakdowns. Within the Foodtown complex, however, the common refrigeration system provides the necessary duplication in its larger scope without the additional expense to any one company."

www.AllBusiness.com

3.3 Organize an inter-company panel to identify opportunities to combine redundant functions or processes

Functions central to the core business of the Rubbertown companies may contain redundancies from one plant to another. Apart from peripheral safety, security, emergency response, maintenance and marketing functions, there may be core manufacturing, processing, assembly, storage, distribution or supply processes that could be combined, merged or synergized for the mutual benefit of participating companies. However, due to the technical and/or proprietary nature of these processes, the companies themselves - perhaps facilitated by an outside organization - should endeavor to organize an inter-company panel in order to identify and strategize about these opportunities.



BY-PRODUCT SYNERGIES (BPS)

By-product synergy (BPS) is the practice of matching under-valued by-products or waste streams with potential users, helping to create new revenues or savings for the organizations involved while simultaneously addressing social and environmental impacts. Participating company engineers and operations staff are exposed to each other's production processes, input needs, and waste streams and through facilitated collaboration identify innovative ways of integrating their operations to cut pollution, save energy, reduce material costs and improve the bottom line. BPS promotes a shift from a waste disposal system to a reuse methodology, saving energy and cutting emissions*.

3.4 Create a SynergyMap Tool to document and help match the by-products of Rubbertown businesses to potential users.

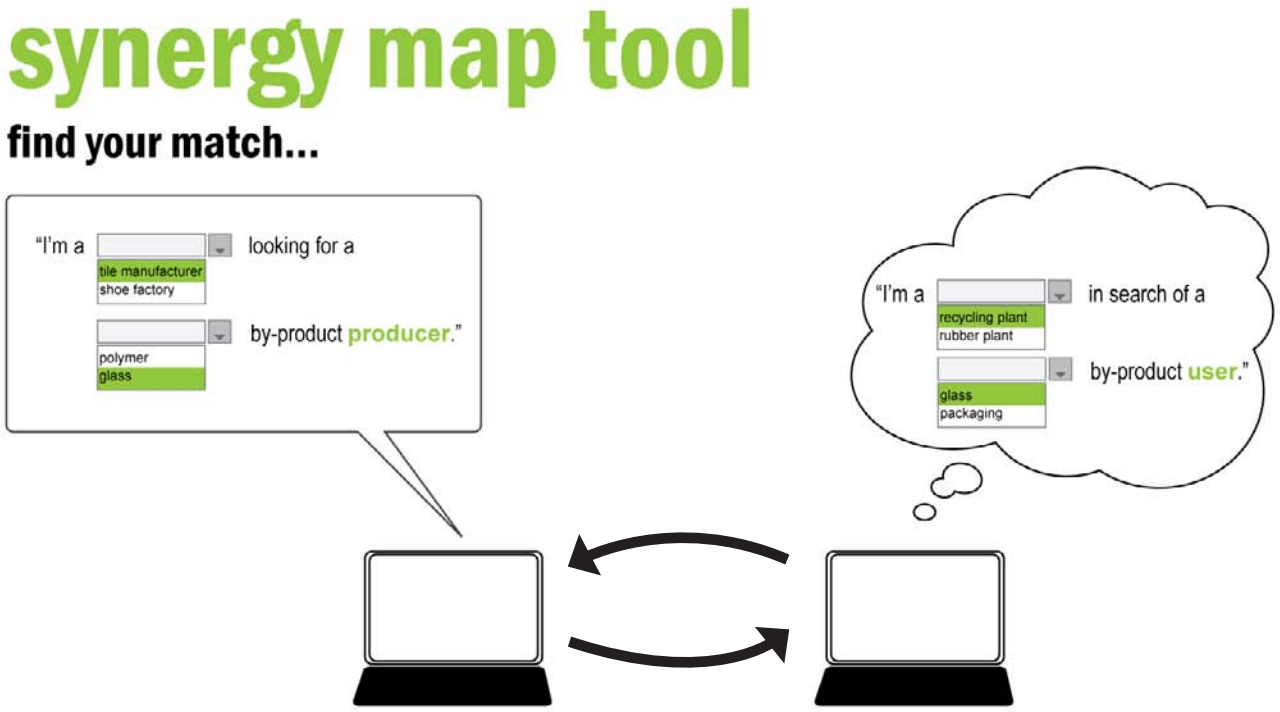
Information is the key to taking advantage of potential synergies in an environment where industrial processes are proprietary, sensitive, or complex. The Rubbertown community of companies, as well as other industrial firms across the region, should be able to access a members-only database and GIS-based mapping program that lists (anonymously, if necessary) the by-products and needs of member companies, plots them on a map, and provides contact information. Such a tool could be a first step at enabling the synergistic utilization of one company's by-product or waste stream by another, reducing environmental impact and growing the bottom line for member companies.

PRECEDENT

Greater Sudbury Development Corporation's Synergy-Finder Tool, Greater Sudbury, Canada

We've all heard the adage that one person's trash is another person's treasure. Two years ago the GSDC initiated and funded an Eco-industrial Waste Streams Study to see how much 'treasure' was being disposed of by the City's private and public sector businesses and institutions. The purpose of the study was to identify existing sources of industrial waste in Greater Sudbury and determine possible resource synergies where one business could benefit through the sharing of consumer, commercial and industrial waste streams. The study, completed in 2007, led to the development of an Eco-industrial Database, an online 'synergy-finder' that lists the needs and by-products of 100 local businesses and plots their locations on a GIS-based map. It is a virtual networking tool that is helping local businesses find value in their waste products.

www.greatersudbury.ca/cms/index.cfm?app=div_earthcare&lang=en&currID=6995&parID=6847



*Source: USBCSD

3.5 Develop partnerships between regional agencies to implement a Louisville Regional BPS Network

The U.S. Business Council for Sustainable Development (USBCSD) sponsors By-Product Synergy (BPS) Networks across the nation that facilitate processes for identifying and implementing by-product synergies among a select group of local industries. In Rubbertown, the University of Louisville and the Kentuckiana Regional Planning and Development Agency (KIPDA) could partner with the USBCSD to undertake such an effort.

The implementation of a local BPS Network is a year-long process that begins by cataloging each organization's inflows and outflows in a confidential, uniform database that is analyzed for synergies by an experienced project team and through facilitated working sessions with the participants. Participants discover many valuable connections between themselves and other industries in the region. They create action plans for synergies judged commercially viable, and organize strategies for addressing technical, regulatory or other barriers. The industry groups continue to convene for as long as there is value to the participants.

BPS Networks have achieved remarkable success in locations throughout the United States. Established and emerging BPS programs are underway in Chicago, Kansas City, Ohio, New Jersey, New England, the Gulf Coast, and Puget Sound. The Council worked with the City of Chicago in 2007 to establish a network of businesses that by 2008 had diverted more than 22,000 tons of landfill-bound waste, achieved $4.5 million in savings and new revenue, and reduced 50,000 tons of CO2 emissions. In Kansas City companies and regulatory agencies have worked together for more than three years and explored more than 50 synergies, 29 of which have resulted in the reuse of more than 33,000 tons of landfill material.

PRECEDENT

USBCSD Regional BPS Case Studies

Some examples of by-product synergies achieved by ongoing regional networks include:

Sulfur Dioxide Scrubber By-Products Create in Gypsum: A partnership was established between American Electric Power and CertainTeed, a subsidiary of St. Gobain, to convert flue gas desulfurization (FGD) residue into a feedstock for wallboard manufacturing. FGD residue consists largely of gypsum, a key input to the production of wallboard. To take advantage of this natural synergy, CertainTeed built a new manufacturing facility in close proximity to AEP's power plants in Moundsville, West Virginia. The FGD systems at the power plants remove sulfur dioxide (SO2) from the flue gas produced during coal combustion. The SO2 is absorbed into limestone slurry, and then reacts with the calcium in the limestone to form gypsum.

Shoe Manufacturing Waste to Feed for Polymer Company: Texon International generates a substantial amount of polymer-based waste when manufacturing shoe components such as insoles for the footwear industry, much of which is sent to landfills. As part of a BPS network, Texon is working with Polymer Industries UK, which is reprocessing up to 1,000 tons of Texon's polymer-based waste per year and saving Texon more than $83,000 in diverted landfill disposal costs. In addition, 3,645 tons of C02 is offset through recycling polymers and fewer trips to the landfill. Polymer Industries also supplies a polymer bead derived from the original waste material, that is fed back into Texon's manufacturing process, and has produced synthetic suede from recycled material that Texon is considering using.

Paint By-Product to Power Wash Material and Kiln Fuel: AkzoNobel, an aerospace coatings manufacturer, was exploring reuse opportunities for its waste paint material and partnered with a Missouri cement kiln organization that discovered it could save money by using the paint by-product in a power wash for the kiln's tanker trucks and railroad car interiors, reducing AkzoNobel's waste disposal costs. The solid in the by-product forms a gritty spray that is power-sprayed with a nozzle, similar to sand blasting. After the car is cleaned, the by-product material is captured and fed as supplemental fuel for the cement kiln. The company presented this BPS project as a beneficial reuse project to get U.S. EPA permission for the exchange.

http://www.usbcsd.org/resources/documents/BPS%20Examples.pdf

** NOTE: Dow Chemical is already currently involved in an intra-company synergy program with USBCSD in non-chlorinated waste reuse at six of its Gulf Coast facilities.

BUSINESS SYNERGIES

In addition to by-product synergies and opportunities for shared facilities and cooperation, there are potential business synergies that should be considered in any land acquisition strategy or future development scenario for the Rubbertown Corridor. Greater Louisville Inc., with Metro Louisville Economic Development Department should actively seek to find a home for businesses that can benefit from plant expertise, infrastructure, products or processes, or who could provide service or supply functions to the plants themselves.

PRECEDENT

MIO Culture, Philadelphia, PA

Based out of Philadelphia, MIO builds on a strong local manufacturing base and a diverse pool of creative individuals that is ever-present in the city by developing products in conjunction with local producers - integrating existing technologies and industries into a profitable value-added system that is both socially and environmentally responsible. Through eco-intelligent design and close partnership with local manufacturers, MIO Culture re-purposes existing by-product streams – such as pulp from a local corrugated cardboard box maker – into modular 3D wallpaper panels - developing a parallel fabrication process on the manufacturer's own floor.

3.6 Recruit firms whose core businesses synergize with those of Rubbertown or Riverport companies

Greater Louisville Inc., in conjunction with Metro Government's Economic Development Department, should seek to find a home on developable land in the Rubbertown Corridor for businesses that can benefit from the expertise, infrastructure, products or processes of existing Rubbertown companies or who could provide service, supply, distribution, or upstream/downstream production roles to the plants themselves. Examples of such companies could include:

- **Pyrolysis Research & Development –** Researching alternative energy technologies based on materials that are manufactured in Rubbertown could utilize concentrated institutional knowledge.
- **Industrial Machinery, Tooling and Metal Products –** The location of companies such as GCH, a manufacturer of metal products for the building trades – including scrubber equipment, conveyors, dust systems, metal decking, platforms and rails – within the Rubbertown Corridor would allow for product development and innovation in close proximity with large industrial users.
- **Packaging Supply Companies –** The siting of a packaging maker for products manufactured in nearby Riverport could derive proximity advantages such as increased responsiveness, small batch cost-effectiveness, and "face-time" in product development.
- **Warehousing, Distribution and Logistics –** Rubbertown's tremendous access – to the interstate system, freight rail, river, airport and UPS Worldport– makes it an ideal location for the logistics industry, with or without local companies' distribution functions.
- **Software Vendors and Maintenance –** Aside from diversifying Rubbertown as an industrial district, tech companies such as software vendors could take advantage of the scale of Rubbertown operations by partnering to troubleshoot and develop new software in conjunction with the larger companies.

4 IMPROVE INFRASTRUCTURE – IMPROVE QUALITY OF LIFE

Infrastructure impacts the quality of life dramatically in the Rubbertown area. Often rural in character, the arterial and feeder streets serving Rubbertown are narrow and carry heavy tractor-trailer traffic. Combined with a number of freight rail crossings in the area and the virtual wall formed by I-264, conditions can be unwelcoming and even dangerous for pedestrians, bicyclists, and residential traffic. A lack of lighting and sidewalks further exacerbate these conditions. Recommendations in this section include short-term, achievable improvements aimed at improving the day-to-day experience of residents and workers in the Corridor, coupled with long-term initiatives that will require advocacy, partnerships and significant funding.

Barge facility product lift over the floodwall of the Ohio River.

4.1 Establish a web-based mapping program to track quality-of-life issues such as illegal dumping, flooding, graffiti, lighting or odor

In addition to providing information about useful resources and safety in Riverside Gardens, Lake Dreamland, and other neighborhoods that are within or near the Rubbertown Corridor, an interactive web-based mapping program would allow for reporting the location of quality-of-life issues, and for monitoring response and cleanup. Such a tool is inexpensive to create and could become an important tool on the RCAC website to generate further discussion and coordination.

4.2 Explore utilizing discretionary funding through Louisville Metro or DOE grants to fund solar light installation

In keeping with the goal of greening Rubbertown, it is recommended that new solar-powered lighting be considered for main thoroughfares such as Camp Ground Road and Lees Lane. Using solar-powered, rather than traditional, lighting avoids the need to hook up to the existing power infrastructure, resulting in less expense and more flexibility in the placement of the lights. With vocal support for improved lighting and nighttime safety in areas of the Corridor, Louisville Metro could be approached for discretionary funds available for district projects. Alternatively, the Department of Energy offers Energy Efficiency and Conservation Block Grants (EECBGs) through the American Recovery and Reinvestment Act (ARRA) as formula, non-competitive grants awarded to state and local governments, the stated purpose of which includes "installation of energy efficient traffic signals and street lighting." Louisville has already received such EECBG funding for solar-powered street lighting downtown, and Rubbertown may be able to take advantage if Metro receives additional funding.
http://www1.eere.energy.gov/wip/eecbg.html

4.3 Extend sewer infrastructure south

While basic utilities including power and municipal water supplies are available the entire length of Camp Ground Road, our analysis indicated that sewer service is currently unavailable to the properties south of Ralph Ave and north of Riverside Gardens. Extending sewers north from Lees Lane, or south along Camp Ground Road, would significantly help to render the large properties along the southern reaches of Camp Ground "shovel-ready" for new industrial development. The installation of a sewer main also could be accomplished in tandem with improvements to Camp Ground Road described in Recommendation 4.7 below.

4.4 Develop landscape design guidelines for frontage roads

Design guidelines drafted by a Rubbertown Business Improvement District (Recommendation 1.3), and approved by the Metro Council, could serve to coordinate incremental investment in the Corridor and begin to unify the look and feel of the Rubbertown Corridor into a more consistent and attractive experience. Upgrades to existing plants, such as increased or re-configured parking, street work, or new development, would trigger the implementation of design standards that would offer guidance on colors, materials, signage, lighting, landscaping, and fencing. Over time, the character of the Corridor would evolve toward a more distinctive, coherent – and green – industrial park experience.

PRECEDENT

CAMDEN Interactive Issue Map

In Camden, New Jersey, Hopeworks developed an Interactive Issue Map for the District Council Collaborative Board that allows residents to anonymously report unsafe quality of life conditions and keep track of actions taken to address them.

www.camdendccb.org

FIG 50 DIAGRAM OF POTENTIAL RIVER ACCESS POINTS.

4.5 Provide public access to the River

Rubbertown companies or entities in control of property with convenient and safe access to the Ohio River should negotiate an easement with Metro Government that relieves them of liability in order to provide public access to the River. With a forty-foot floodwall and dense nodes of industry long separating the surrounding communities from their River, such a gesture would foster a conciliatory atmosphere and improve opportunities for recreation in West Louisville for residents and employees alike. Potential access points could include:

> MSD property off the Southwestern Parkway
> Improved Lees Lane Landfill connection
> Restored Paddy's Run

4.6 Install sidewalks for the safety of pedestrians

While not necessary on every road in the Rubbertown Corridor, the limited installation of new sidewalks should be considered in select residential areas – especially along Lees Lane, Kramers Lane, Ralph Avenue, and upper Camp Ground Road. This improvement would benefit the residents by making travel by foot possible, and safe, on the often heavily truck-trafficked lanes and by linking areas already slated for sidewalk widening or improvement – such as the segment of Lees Lane from Camp Ground out to Cane Run Road – to nearby residential neighborhoods. Better sidewalks would decrease reliance on auto travel and open pedestrian access to area parks, schools, the River, or commercial businesses on Cane Run. Additionally, the installation of sidewalks along the industrial segment of Algonquin Parkway between Chickasaw Park and I-264 (also the route of the Louisville Loop bike lane) could help to improve the market potential of smaller vacant properties.

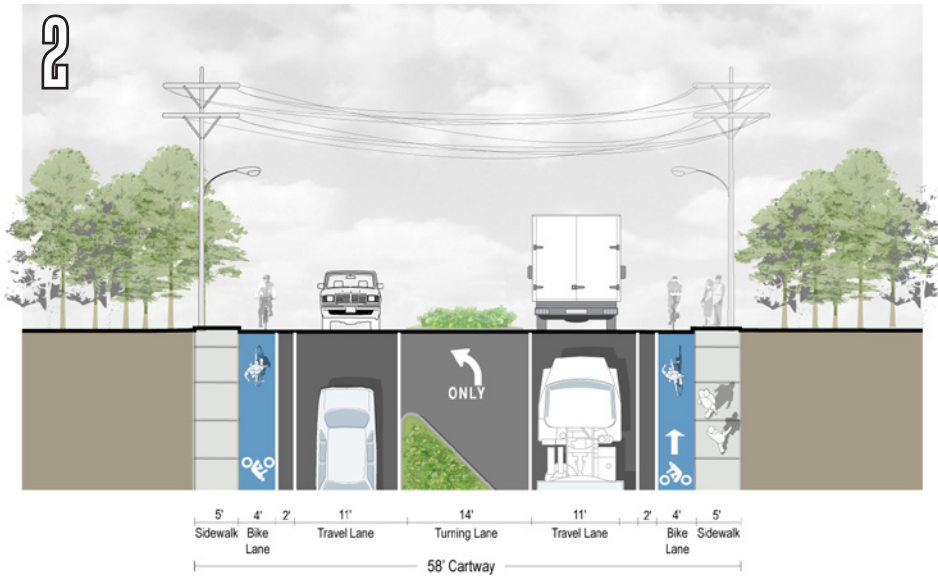
FIG 51 RECOMMENDED SIDEWALK IMPROVEMENTS

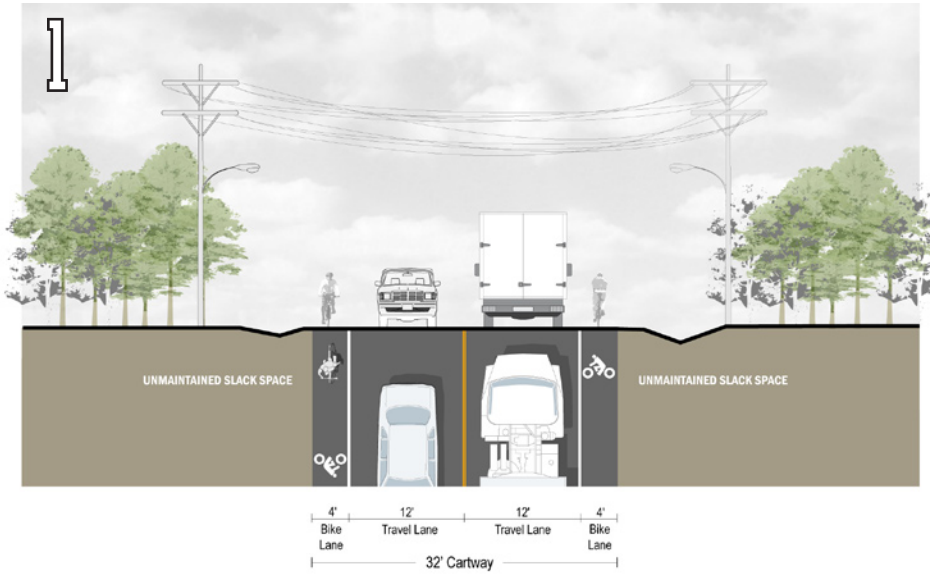
PLANNED SIDEWALK IMPROVEMENTS

POTENTIAL SIDEWALK IMPROVEMENTS

4.7 Improve and widen Camp Ground Road

Subsequent planning efforts for the Rubbertown Corridor should include a traffic study focusing on Corridor circulation, and specifically, Camp Ground Road. The segment of Camp Ground Road that traverses Rubbertown is narrow, crowded with truck traffic, dangerous to bicyclists on the too-narrow bike lanes (formerly shoulders), and devoid of pedestrians altogether. Taking into account the limiting width of infrastructure – power lines and light poles along the right-of-way – two alternative improvement scenarios are proposed that would better accommodate trucks, cars, bicyclists and pedestrians. The scenarios include potentially expanding the right-of-way to include a turning lane to ease backups caused by traffic seeking to make left turns, adding buffer zones between the auto traffic and bike lanes to dramatically increase the perceived and real safety for cyclists, and installing curbs and sidewalks to provide a pedestrian "backbone" through the district. New lighting and landscaping would serve to create a distinctive industrial boulevard for the Corridor that will physically market Rubbertown and represent the ongoing evolution into a sustainable and diverse job center.





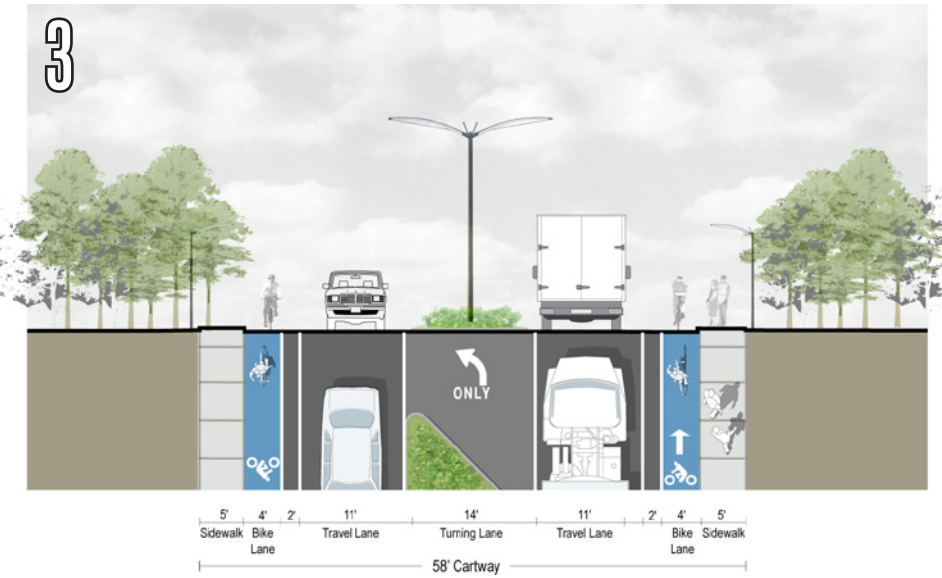


FIG 52 POTENTIAL CAMP GROUND ROAD IMPROVEMENTS BETWEEN LEES LANE AND RALPH AVENUE. (1) EXISTING ROADWAY (2) WIDENED WITH SIDEWALKS, BUFFERED BIKE LANES AND PLANTED MEDIAN (3) WITH SOLAR LIGHTING.

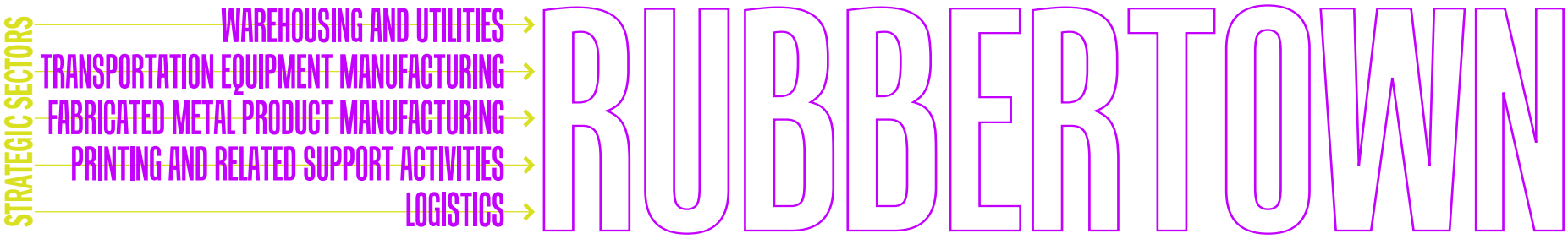
41st and Algonquin Parkway, Rubbertown

5 PURSUE SUSTAINABLE BUSINESS DEVELOPMENT STRATEGY

5.1 Recruit companies within industries that would benefit from business clusters in Rubbertown

Recently, more industrial product has been developed in the fast-growing suburbs in Bullitt County and Southern Indiana. Rubbertown should implement a focused development strategy in order to recruit and retain companies within target industries and prevent them from locating outside of the city. Target industries are those that are clustered in Rubbertown and could also benefit from some of the physical and locational advantages of the district.

The economic development recommendations in this section provide key strategies to help stem the continued loss of market share of industrial space to suburban markets and encourage new businesses to locate within Rubbertown. As part of this strategy, companies within the **following strategic sectors should be recruited to Rubbertown:**



It is important to note that all of these industrial sectors can be developed as green facilities. This is not the industry of years past but a clean and green opportunity to create more jobs for the area. The opportunity is to reposition Rubbertown as both a "green distribution" and "light manufacturing" alternative for the region building on its existing market strengths.

5.2 Utilize federal and state incentive programs to recruit companies to and retain companies in Rubbertown

There are many state and federal incentive programs that could be used to help Rubbertown's existing companies grow, and recruit new companies to the district. The following are among the incentive programs available to promote economic development and growth within Rubbertown:

- Kentucky Business Investment (KBI) – Provides income tax credits and wage assessments to new and existing agribusinesses, regional and national headquarters, manufacturing companies, and non-retail service or technology related companies that locate or expand operations in Kentucky.

- Kentucky Reinvestment Act (KRA) — Manufacturing companies that make minimum capital investments of $2.5 million and retain 85 percent of their workforce are eligible for this state tax credit. Tax credit reduces state corporate income tax liability in the amount of 50% of the capital investment and 100% of training costs. Companies that have received KIRA funding are ineligible for the program.

- Federal Funds – Manufacturing companies in Rubbertown produce component parts that support Federal defense, energy, and other programs. The city could work with Rubbertown local and parent companies to procure federal funding for manufacturing that supports federal initiatives.

5.3 Work with Corporate Headquarters to Expand Existing Rubbertown Businesses

Rubbertown is the manufacturing hub for multinational chemical companies in Louisville. Dow Chemical, Dupont, Lubrizol, Carbide Industries, Hexion Specialty Chemicals, and Arkema are among the international chemical manufacturing companies located within Rubbertown. Decisions about site expansion, consolidation, and closure are made at the corporate headquarter sites, and none of the Rubbertown companies are headquartered in Louisville.

Greater Louisville Inc. could expand its relationships with the corporate headquarter representatives to understand corporate expansion and consolidation strategies and help direct growth to Louisville. While Greater Louisville Inc. works closely with the plant managers in Rubbertown to make the case to headquarters for expansion in Louisville, developing more direct relationships with corporate headquarters could also work from the top-down to help Rubbertown industries expand.

5.4 Tap into Workforce Training Programs

Rubbertown has experienced workforce challenges that are common to manufacturing districts throughout the country. There has been a decline in jobs within Rubbertown companies, and the manufacturing workforce is aging and nearing retirement age. Many manufacturing jobs in Rubbertown are not held by West Louisville residents. Job creation for residents in neighborhoods surrounding Rubbertown, including West Louisville, is a primary goal of this revitalization strategy.

Targeted workforce training programs could provide specialized training that focuses on skills deemed necessary by companies in the strategic industry clusters. Conversations with representatives of companies located in Rubbertown indicated that there are specific gaps that could be addressed by workforce training programs. **The following jobs are in high demand in Rubbertown**:

- CHEMICAL PROCESS TECHNOLOGY
- MAINTENANCE CRAFTSMEN
- INSTRUMENT AND ELECTRICAL TECHNICIANS
- UTILITIES OPERATORS
- CONTROLS ENGINEERS

In addition to technical skills, Rubbertown could serve as the site for a centralized safety and environmental training center serving industries in Rubbertown and the entire Louisville industrial market. Due to the city's centrality, a national-scale safety training center might be viable in Rubbertown as well. Currently, Rubbertown companies send their employees to out-of-state safety and environmental training programs.

PURSUE CATALYTIC DEVELOPMENT OPPORTUNITIES

Rubbertown remains a viable industrial district despite the unique challenges discussed in the analysis of this report. For Rubbertown to thrive well into the future, a clear vision must be articulated to guide future physical development. The recommendations in this section consider the Rubbertown Corridor as three separate and distinct sub-districts: the northern "Parkway" area, the central "Gateway" area, and the large area south of Kramers Lane and Senn Road that remains relatively undeveloped, apart from the two established residential communities. These recommendations are geared toward guiding new development consistent with the long-term vision for Rubbertown as a greened, integrated industrial park that capitalizes on its excellent infrastructure and co-exists harmoniously with neighboring residential communities.

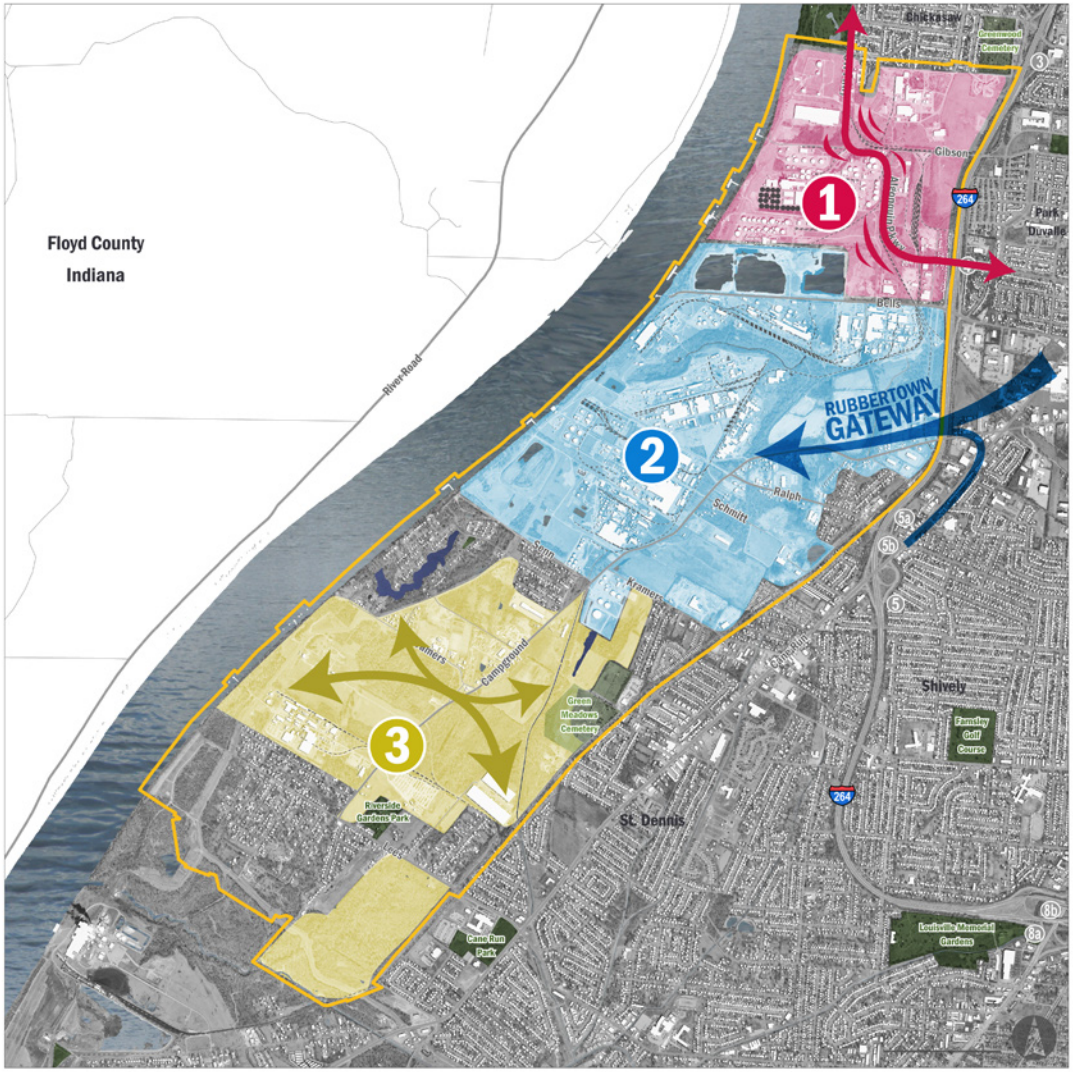


FIG 53 RUBBERTOWN SUB-DISTRICTS

6.1 Create an infill development plan for underutilized sites along Algonquin / SW Parkway

The northern end of the Rubbertown Corridor is uniquely positioned for a more diverse mix of industrial and commercial development owing to several small sites available along the Algonquin and Southwest Parkways that are highly visible and accessible. Several mid-size sites could also be assembled or carved from underutilized portions of existing properties, such as the Carbide Industries settling ponds property southwest of the Parkway. Further study and planning should be undertaken to identify synergistic opportunities that could enhance and take advantage of the Rubbertown chemical cluster and whose space needs are compatible with the inventory of develop-able properties here.

FIG 54 SUB-AREA 1

6.2 Master-plan the heart of Rubbertown centered on Ralph Avenue and Camp Ground Road

A focused development plan should be generated to coordinate improvements in several areas related to new development in the core manufacturing area. This development will serve to reinforce the core of Rubbertown's industrial businesses and establish an attractive gateway from I-264, Cane Run Road and West Louisville. Specifically, the development plan should seek to:

> Site and develop a Cooperative Resource Center that is centrally and prominently located to welcome visitors to the district (Recommendation 3.2);
> Identify and test mid-size vacant sites, such as the Carbide and PolyOne Properties on Camp Ground Road, for new development;
> Identify additional land assembly opportunities of unused and underutilized properties;
> Identify opportunities to recycle existing landfills for alternative industrial use (Recommendation 6.4)
> Target potential users of available land inventory based on synergies with existing companies (Recommendation 3.6);
> Design gateways and signage for the primary Rubbertown entry points (Ralph, Camp Ground, Kramers) and;
> Rationalize land use patterns to help create smooth transitions between residential use to industrial and commercial activities (Recommendation 6.5).

FIG 55 SUB-AREA 2

6.3 Spur development of an Eco-Distribution Park in Rubbertown South

Target the southern half of the Rubbertown Corridor for new logistics industry development, in keeping with the large parcels, great access (highway, river and rail), industrial deed restrictions (Atkemix Ten property) and the community consensus that no new large chemical plants be developed in the area. While a single new eco-distribution center would be unique in this area and a beneficial marketing tool for the Corridor, a grouping of such facilities would be the first of its kind in Kentucky or Indiana and could prove to be a powerful engine for further economic development of the area. Since ProLogis - one of the world's largest logistics facility developers - has pledged that all of its new distribution facilities in the United States will comply with the U.S. Green Building Council's LEED green building standard, one strategy to spark eco-distribution center development in the corridor would be for Louisville Metro Government to partner with ProLogis, offering significant incentives to jumpstart new development in the Rubbertown Corridor.

Eco-distribution criteria include:

> **LEED buildings** (natural light and energy-efficient lighting systems, reflective roofs, facilities for alternative transportation, recycled materials, on-site recycling, landscaping, water conservation);
> **Renewable energy** production and use (wind and solar);
> Commitment to **GHG reduction** and carbon credit trading program through offsets and energy efficient measures, **clean energy truck fleet** and;
> **Process efficiency**, including: conveying and handling processes, increased flow-through, optimized transportation processes using transportation management, improved cartonization, electronic interfaces for warehouse efficiency/supply chain management.

PRECEDENT

Walmart Eco-Distribution Center, Canada

Wal-Mart Canada plans to open a 450,000-sq.-ft. distribution center this fall, which will be one of the most energy-efficient facilities of its kind in North America. Its entire lift truck fleet will be powered by hydrogen fuel cells and the entire facility will be lit by LED lighting. Wal-Mart expects to save an estimated 1.4 million kilowatt-hours annually–enough to power 121 average-size Canadian households for a year. Wal-Mart also plans to test solar and wind energy by installing 16 solar thermal panels and a 225-kilowatt wind turbine, which will produce enough energy to supply 55 average-size Canadian homes. The refrigeration system requires less power than conventional systems and uses ammonia instead of refrigerants. Waste heat from the refrigeration system will heat the facility during the winter months. The facility also uses fly-ash concrete flooring, high-efficiency doorways between temperature zones, insulated dock plates, upgraded dock seals, water efficient bathrooms, stormwater management, and a white roof membrane that deflects an estimated 85 percent of sunlight to reduce heat gain and demand on the electrical grid.

www.ddimagazine.com/displayanddesignideas/content_display/industry-news/e3i2fac53d5f65010f7bdeebfab2f04db92

Adnam Brewery Distribution Center, England

Adnams' 25,640 sq. ft. eco-distribution center is situated within a disused gravel pit set in 85 acres of grassland. The gravel pit offers thermal stability because it is below ground level, and the surrounding wildlife park shields the building from view and minimizes the impact of noise and light. The walls are made of locally-sourced lime, quarry waste and hemp blocks, which have excellent mechanical, insulating and environmental qualities. Typically cool temperatures for brewery distribution are accomplished through multiple refrigeration units, but this building requires no refrigeration whatsoever. Stormwater is absorbed by a green roof and stored on-site for flushing toilets and washing trucks. The distribution center is on course to be one of the first commercial buildings to receive a BRE Environmental Assessment method rating of 'excellent' for energy efficiency.

http://davidbockman.wordpress.com/2010/03/02/greenroof-adnams-brewery/

PRECEDENT

iPORT 12, Carteret, NJ

The 1.2 million sq. ft. warehouse adjacent to Port Newark is built on a landfill. It is supported on recycled oil pipes driven down 70 ft. to hit bedrock, a new standard in warehouse design. In addition to restoring natural wetlands, iPort 12 mitigated the site's environmental hazards by properly closing the landfill and incorporating a methane and leachate collection and monitoring system.

http://www.kssarchitects.com/content/project.php?type_id=22&project_id=243

6.4 Explore the opportunities to recycle existing landfill sites for new industrial development

In the heart of the Corridor along Kramers Lane and across Camp Ground Road from American Synthetic Rubber Corp (ASRC) lie the Camp Ground and Kramers Landfills. Both sites have been closed since the early nineties, are no longer subject to state oversight, and are owned by ASRC and Waste Management, respectively. Last year, ASRC and Waste Management worked with the Wildlife Habitat Council to have the combined site certified as native plant wildlife habitats under the WHC Wildlife at Work Program. ASRC has done an outstanding job of shepherding this site back to a natural state and this green area development has received a lot of positive feedback from the community. At the same time, a compatible use for a portion of the remaining acreage on the 132-acre site may be possible. Specifically, there may be an opportunity to set a precedent in Louisville for the active recycling of contaminated land by utilizing a portion of the landfills fronting on Camp Ground or Kramers to explore innovative methods of new industrial development.

6.5 Explore with Rubbertown companies the possibilities of co-siting

One potential use for the significant amount of “slack space” in the sprawling chemical plant sites is based on the concept of co-siting. The Louisville Chemistry Partnership or, potentially, a Rubbertown Industrial Business Improvement District (IBID) should market opportunities for related manufacturers to lease space on existing plant land. Co-siting in this way benefits both companies – the plants derive lease income and fees for hosting water, sewer, power, and even raw material supply or storage and the co-sited companies are freed to focus on their core business instead of site, facility, and infrastructure.

Slack space around the Dow Chemical facility.

PRECEDENT

Port of Rotterdam Co-Siting, Netherlands

One of the strongest points of the Port of Rotterdam’s (petro)chemical cluster is that many of the companies do business with each other. Cooperation can take on added dimensions with the arrival of newcomers on the site of, or adjacent to, existing companies. This is the concept of co-siting. To make the Rotterdam port area more attractive for chemical investors, the Rotterdam Municipal Port Management (RMPM) started pro-actively marketing the co-siting concept in cooperation with a number of chemical enterprises in the second half of the 1990’s. Co-siting gives companies a viable alternative to the more traditional greenfield investment that requires investing in an entire series of site facilities and services. That especially helps companies just starting up. The investment threshold is kept as low as possible because companies are able to make use of existing facilities and services in a great many cases.

One striking co-siting project in the port is the arrival of the Turkish chemical group Organik. A family-operated business founded in 1924, Organik is located at Vopak’s Chemiehaven site in the Botlek area. The president of Organik, Aldo Kaslowski, makes it perfectly clear that the advantages of co-siting were the deciding factor in his decision to go with Rotterdam. The company wants to maximize facility-sharing with its host, Vopak. In this way, Organik is able to direct its complete attention to its core business: the production of water-based polymers. “I don’t want to lose valuable time and money by having to set up water, electricity, safety and so on, ourselves. The more we are able to share, the lower the costs.” Co-siting partner Vopak will also manage handling and storage of raw materials for Organik. It is just one more reason for the Turkish company to choose this particular site. “We want to keep the raw materials as close to us as possible.”

http://goliath.ecnext.com/coms2/gi_0199-3132132/Win-win-the-undeniable-advantages.html

6.6 Facilitate the transition of select properties away from residential use

The transition away from residential land use in select areas of the Rubbertown Corridor should be encouraged. While residential use is scattered across Rubbertown, there are small pockets of housing that face significant challenges including: isolation from nearby residential uses; high vacancy rates or large number of buildings in poor physical condition, and; proximity to high intensity industrial plants in the district. Transition away from residential use would help to consolidate housing in areas where it is the most established and stable, while also providing opportunities to assemble additional land for new industrial uses and local jobs. Further study and discussion with property owners is necessary for any transition in land use to occur.

Residents in the Rubbertown area have expressed great interest in a large-scale buyout or relocation of their homes from the area. However, a corridor-wide buyout would be extremely expensive, ranging from a low estimate of $67 million to a high of $137 million. While buyouts funded by FEMA and facilitated by local governments are not unheard of, these are most commonly associated with flood or other natural disaster risk or damages.

Industrial and residential uses are in close proximity to one another in Rubbertown.

Given the strong desire from many residents for relocation, potential buyout scenarios should be the subject of further feasibility studies. The intent is to identify the resources available for potential relocation and to develop a phasing plan that matches the available funding to the residential areas where buyouts will provide the greatest benefit to both existing residents and adjacent businesses. Based on the field survey conducted for this study, three small areas, relatively isolated from other residential areas, could be considered as near-term opportunities to transition residential to industrial use, provided a more in depth implementation analysis: The triangle formed by Camp Ground Road and Ralph Ave, west of Likens Ave where few homes currently exist; isolated properties on the east side of Camp Ground Road stretching along Schmitt Road, and; properties along 40th and 41st Street north of Bells Lane.

06

IMPLEMENTATION

06 IMPLEMENTATION

APPROACH

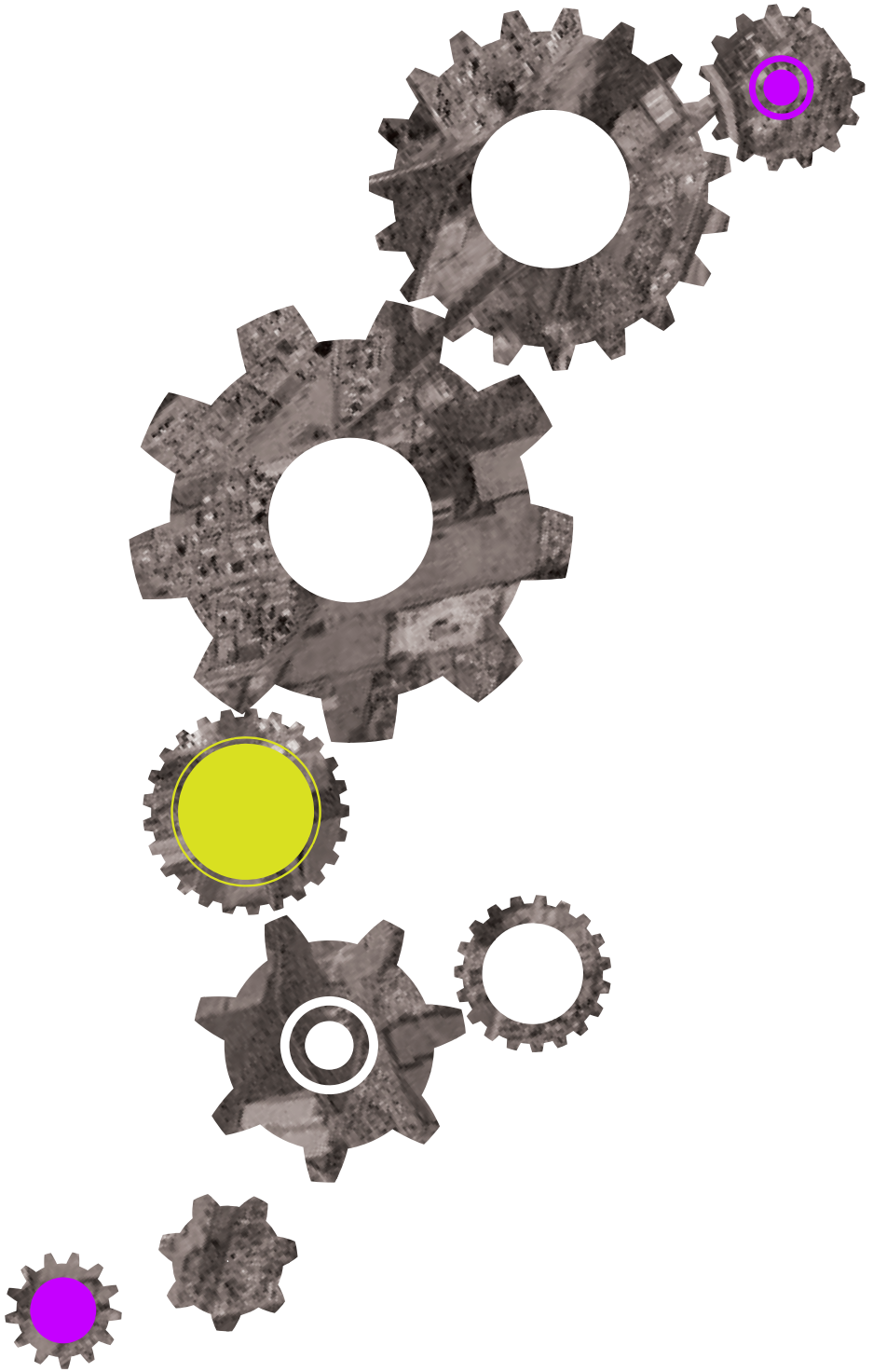
The Economic Development Strategy for the Rubbertown Corridor is a comprehensive plan that provides a road map for increasing the competitiveness and sustainability of Rubbertown, while improving relationships with surrounding communities. Although the plan contains multiple strategies to pursue, each recommendation requires a different set of partners, enabling many proposals to be addressed concurrently. In addition, many of the recommendations are tailored to low-cost solutions that can be implemented in the short term and through the capacity of corridor businesses and organizations.

This Economic Development Strategy for the Rubbertown Corridor will require coordination and financing – in some cases beyond local means. City, State, and Federal agencies, Rubbertown companies, and interested developers must create an active dialog about these recommendations. As with any implementation strategy, project partners must seek to blend dollars from both public and private sources as well as foundations to maximize impact.

The implementation of this plan hinges on three key factors: (1) Coordinated strategic, and sustained investment from local industries and businesses with a vested stake in the future of Rubbertown; (2) A strong partnership with Metro Louisville and regional agencies to assist with improving the quality of the environment, business recruitment, workforce development, infrastructure and funding, and; (3) Expanded community engagement to help further improve relations between business and residents and identify issues of mutual concern.

This is a living document, one that will evolve as more discussions take place. Funding sources, political representatives, the economy, community leaders, on the ground conditions, and even some local priorities will change in ways that are impossible to fully predict. The recommendations contained within this plan should be critically re-evaluated as implementation moves forward. If necessary, new recommendations should be considered that reinforce the principles set forth during this process.

But in the meantime, in coming weeks and months, it will be important to keep the momentum built during the planning process alive.



TAKE SOME IMMEDIATE NEXT STEPS

The Rubbertown stakeholders and project partners will need to take several important next steps – with Louisville Metro Government, with potential funders, and with the residents and Rubbertown companies themselves – to ensure that those involved stay involved and embrace an active role in the plan's implementation.

Form a Rubbertown Industrial Business Improvement District (IBID)

There is tremendous potential for the Rubbertown companies to work together in order to bring about many of the improvements to the district outlined in this report. The creation of a non-profit industrial business improvement district (IBID) could provide the organizational means to fund and implement district improvements by voluntary assessment of members. However, the IBID could also serve in a planning capacity as a forum for discussion for companies interested in coordinating shared facilities, by-product synergies, co-siting, or other cooperative strategies outlined herein. This is where an inter-company panel could be convened to identify opportunities to combine redundant functions or processes.

Strengthen RCAC and WJCCTF Linkages

The Rubbertown Community Advisory Committee and the West Jefferson County Community Task Force should coordinate their activities immediately in order to provide a clear venue for communication between representatives of the Rubbertown companies and area residents. While these two groups currently operate largely independent of one another, cross-referencing one another's meetings and activities will provide a forum for multi-stakeholder discussion, prioritization and advocacy for improving the interface between industry and West Jefferson County communities outlined in this plan.

Create a Website

A website should be created, either as an extension or upgrade of the Louisville Chemistry Partnership's current site, or a new presence entirely (perhaps associated with a Rubbertown IBID) – in order to provide a central clearinghouse for all things Rubbertown – including STAR updates and information; information on the ongoing adoption, evolution and implementation of this plan; a "Made in Rubbertown" marketing campaign and Corridor property listings; a Rubbertown Community Calendar; and the hosting of a Synergy Map tool. The web presence should be consistently branded with other marketing materials and urban design upgrades to the Corridor in order to strengthen and enhance a newly-emergent identity for the industrial district.

PHASING AND PRIORITY PROJECTS

Attached is an Implementation Matrix that details the timeframe, responsibility and partners, and potential funding sources for each recommendation, to help guide and keep track of the progress in implementing the Plan's components. The spreadsheet should be actively used, updated, and changed once implementation commences. Similarly, although a number of potential funding sources are identified for some items, it is the responsibility of the project partners to determine the most attainable source of funds at the time fundraising efforts are underway. To accomplish many of these projects, an Industrial Business Improvement District, as described above, or a similar mechanism is needed to help pool the individual investments of local businesses such that they have a measurable and positive impact on the community. Coupled with investments by local businesses, Metro Louisville and their partners must also play a critical role by helping to put a spotlight on both the issues and opportunities associated with Rubbertown.

IMPLEMENTATION MATRIX

SHORT TERM = 1-2 YEARS, MID-TERM = 3-5 YEARS, LONG-TERM = >5 YEARS
PRIORITY PROJECT INDICATED BY >

		What Rubbetown should do tomorrow			
		ACTION	**TIMEFRAME**	**RESPONSIBILITY / PARTNERS**	**POTENTIAL SOURCE OF FUNDS**
>		Form a Rubbertown Industrial Business Improvement District (IBID)	NOW	Rubbertown Companies	Voluntary Assessment
>		Strengthen RCAC and WJCCTF linkages	NOW	RCAC & WJCCTF, Metro Economic Development Department (EDD)	--
>		Create a website	NOW	LCP, Greater Louisville Inc. (GLI)	LCP / IBID
		1. Rubbertown 2.0: Redefine the Identity & Communicate It			
Priority	**Number**	**Recommendation**	**Timeframe**	**Responsibility / Partners**	**Potential Source Of Funds**
>	1.1	Develop a "Made in Rubbertown" marketing campaign	SHORT-TERM	LCP, GLI, EDD, RCAC	IBID, GLI, EDD
>	1.2	Develop & disseminate conceptual designs for key properties	SHORT-TERM	LCP, GLI, EDD	IBID, GLI, EDD
	1.3	Create a strong on-line presence and marketing materials	SHORT-TERM	LCP, GLI	IBID, GLI, EDD
	1.4	Design primary gateways	LONG-TERM	GLI, EDD	Transportation Enhancement Program / Kentuckiana Regional Planning and Development Agency (KIPDA), Kentucky Transportation Cabinet (KYTC)
	1.5	Introduce signage and wayfinding	MID-TERM	GLI, EDD, LCP	Kentucky Transportation Cabinet, Public Works & Assets, IBID
	1.6	Creatively integrate public art	MID-TERM	GLI, EDD,	Foundation assistance, National Endownment for the Arts
>	1.7	Expand presence of RCAC and link with WJCCTF to actively engage community	SHORT-TERM	RCAC, WJCCTF	--
>	1.8	Raise awareness of green jobs in Rubbertown	SHORT-TERM	LCP	IBID, GLI, EDD
	1.9	Consider re-naming Rubbertown	LONG-TERM	LCP, GLI, EDD, RCAC, Community	--

2. Demonstrate a Long-Term Commitment to Sustainability

Priority	Number	Recommendation	TIMEFRAME	Responsibility / Partners	Potential Source of Funds
	2.1	Explore leasing space on top of large floorplate buildings for LG&E solar panel arrays	LONG-TERM	E. ON. U.S. LLC, Kentucky Solar Partnership (KSP), LCP	State Sales Tax Exemption, IBID
>	2.2	Create a Rubbertown energy profile to assess opportunities for energy cascading, co-generation, alternative energy and efficiency capacity	SHORT-TERM	GLI, EDD, Go Green Louisville	Lousivlle Metro
	2.3	Explore the use of slack space around tanks and buildings - as well as the tops and sides of the tanks themselves - for habitat restoration and bioremediation	MID-TERM	Go Green Louisville, Rubbertown businesses	Louisvlle Metro, foundation assistance
>	2.4	Implement multifunctional Stormwater Best Management Practices (BMPs)	SHORT-TERM	LCP, Metro Sewer District	Foundation assistance, Louisville Metro

3. Leverage Opportunities for Cooperation & Synergy

Priority	Number	Recommendation	TIMEFRAME	Responsibility / Partners	Potential Source of Funds
	3.1	Pursue construction of a shared barge facility off Bells Lane	LONG-TERM	Carbide, Dupont, LCP	Carbide, Dupont, other local industries
	3.2	Evaluate the potential of a Rubbertown Cooperative Resource Center	MID-TERM	LCP	IBID
>	3.3	Organize an inter-company panel to identify opportunities to combine redundant functions or processes	SHORT-TERM	LCP	--
>	3.4	Create a SynergyMap Tool to document and help match the by-products of Rubbertown businesses to potential users.	SHORT-TERM	U.S. Business Council for Sustainable Development, LCP	IBID
	3.5	Develop partnerships between regional agencies to implement a Louisville Regional BPS Network	MID-TERM	U.S. Business Council for Sustainable Development, University of Louisville, KIPDA	U.S. Business Council for Sustainable Development, Louisville Metro , KIPDA
	3.6	Recruit firms whose core businesses synergize with those of Rubbertown or Riverport companies	ONGOING	GLI, EDD	--

4. Improve Infrastructure, Improve Quality of Life

Priority	Number	Recommendation	TIMEFRAME	Responsibility / Partners	Potential Source of Funds
>	4.1	Establish a web-based mapping program to track quality-of-life issues such as illegal dumping, flooding, graffiti, lighting or odor	SHORT-TERM	RCAC, WJCCTF	Louisville Metro, IBID
	4.2	Explore utilizing discretionary funding through Louisville Metro or DOE grants to fund solar light installation	MID-TERM	LCP, RCAC, WJCCTF	DOE, Louisville Metro, IBID
	4.3	Extend sewer infrastructure south	LONG-TERM	MCD, Louisvlle Metro, LCP	MSD
	4.4	Develop landscape design guidelines for frontage roads	MID-TERM	LCP, RCAC, WJCCTF	Property owners, KIPDA
	4.5	Provide public access to the River	MID-TERM	Metro Parks, RCAC, WJCCTF	KIPDA, Metro Parks
>	4.6	Install sidewalks for the safety of pedestrians	SHORT-TERM	Public Works	KIPDA, KYTC, Louisvlle Metro
	4.7	Improve and widen Camp Ground Road	LONG-TERM	LCP, RCAC, WJCCTF	KIPDA, KYTC, Louisvlle Metro

5. Pursue Sustainable Business Development Strategy

Priority		Recommendation	TIMEFRAME	Responsibility / Partners	Potential Source of Funds
	5.1	Recruit companies within industries that would benefit from business clusters in Rubbertown	LONG-TERM	GLI, EDD	--
>	5.2	Utilize federal and state incentive programs to recruit companies to and retain companies in Rubbertown	SHORT-TERM	GLI, EDD	--
	5.3	Work with Corporate Headquarters to Expand Existing Rubbertown Businesses	ONGOING	GLI, EDD, LCP	--
	5.4	Tap into Workforce Training Programs	ONGOING	GLI, EDD, LCP	--

6. Pursue Catalytic Land Development Opportunities

Priority		Recommendation	TIMEFRAME	Responsibility / Partners	Potential Source of Funds
	6.1	Create an infill development plan for underutilized sites along Algonquin / SW Parkway	MID-TERM	RCAC, LCP, Dept. of Planning & Design	EDD, GLI, LCP
>	6.2	Master-plan the heart of Rubbertown centered on Ralph Avenue and Camp Ground Road	SHORT-TERM	RCAC, LCP, Dept. of Planning & Design	EDD, GLI, LCP
	6.3	Spur development of an Eco-Distribution Park in Rubbertown South	MID-TERM	GLI, Private landowner, Realtor, MSD, LCP	Private dollars, Metro Louisville
	6.4	Explore the opportunities to recycle existing landfill sites for new industrial development	LONG-TERM	GLI, EDD, LCP	Metro Louisville
	6.5	Explore with Rubbertown companies the possibilities of co-siting	ONGOING	LCP	--
	6.6	Facilitate the transition of select properties away from residential use	MID-TERM	Metro Louiville, LCP	Metro Louisville, EPA