A photograph of the Memphis skyline at dusk, featuring the Hernando de Soto Bridge on the left and various skyscrapers illuminated against a blue and orange sky. The text is overlaid on this image.

The Geography of Industrial Blight: Neglected Options for Sustainable Urban Revitalization, Memphis and Shelby County

North American Meetings of the Regional Science Council International
2018, San Antonio, Texas
65th Annual Meeting November 7-10

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The Case for Large-Scale Blight

- ❑ With the exception of **superfund** sites, **brownfields** and **greyfields** that have targeted redevelopment policy priorities, rarely is blight defined by **super-sized tracts** of urban land, (re)zoned as sites of industrial or commercial structures with their vast, now abandoned parking areas, given the same attention as smaller residential blighted properties.
 - ❑ We define “**Large-Scale Blight**” to categorize blighted properties more than 1 acre.
- ❑ Industrial blight is a product of leapfrogged **urban sprawl**; degraded or underutilized land with adverse social, economic, and environmental impacts on the metropolitan region’s vitality and **sustainability**.
- ❑ Cancerous-like effects of blight are realized **close to homes** and **schools** in the **neighborhood**, particularly concentrated in impoverished pockets of the metropolitan region.
- ❑ Reverting blight to **green spaces** or infill-redevelopment provides benefits to the the local economy and the environment (e.g. flood resilience).

Highlights

- ❑ Geographic Information Systems (ArcMap GIS), Shelby County Assessor of Property GIS parcel map, and Google Earth were used to verify large-scale blighted **Industrial** properties in Memphis, (scope is limited to **Memphis and Shelby County**);
- ❑ The **Geography (inventory) of industrial blight** informs public policy and comprehensive planning about the **magnitude** and **extent** of blight;
- ❑ We focus on **vacant and blighted industrial properties** that are in close proximity to **neighborhoods, schools** and roads;
- ❑ Site specific cases represent **neglected options** for sustainable urban revitalization;
 - ❑ Strategies that **mitigate** Industrial blight in the metropolitan region responsive to **social equity, economic efficiency, and environmental sustainability**.

Blight Defined

- ❑ Blight is a term commonly used for classifying **vacant, neglected, abandoned, vandalized, or boarded-up buildings, homes, and dilapidated structures.**
 - ❑ Vacant properties are often considered blighted. However, not all blighted properties are **classified** as vacant due to outdated surveying, which causes discrepancies when collecting data on blight prevalence.
 - ❑ **Large-Scale Blight** is identified as any abandoned structure(s) or concreted land, possibly containing contaminants from previous use, covering 1-75 acres. *To narrow down our search throughout **Memphis** and Shelby County, we identified only large-scale blight classified as **Industrial, Vacant.**
- ❑ Industrial blight is a **manifestation of suburbanization, decentralization of jobs and population, deindustrialization, globalization, and the transformation** of a modern to postmodern metropolitan region's **space-economy.**
 - ❑ Often located in proximity to various property types, including residential, retail, commercial, and open space throughout metropolitan region.
- ❑ Blight connotes a cancer-like condition for property values and the surrounding community, consequential for **public health, environmental quality, and economic activity.** Blight distorts the **urban pedestrian scale,** contributes to **crime, lack of flood resilience,** perpetuates **environmental injustice,** and **degrades** the value of productive land. Blight **burdens neighborhoods** and has adverse consequences for residents and the city's **ecology.**

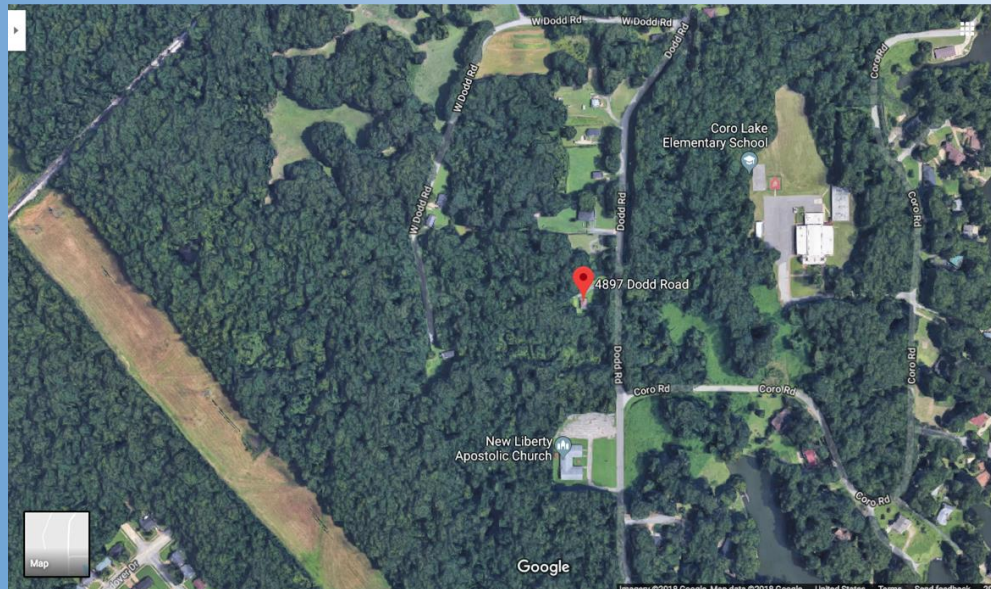
Mapping Industrial Blight

Methodology, Data, and Spatial Search Criteria

- ❖ To streamline efficient mapping in GIS, we group the large number of **residential parcels** into (census) **block groups**. The main source of GIS parcel data, including land use code, zoning, vacancy, and tax status is the county assessor of property. This significantly improves the GIS search for the sites that meet all our select criteria simultaneously. ***Our focus in this phase is limited to the proximity of industrial blight to neighborhoods and schools, which are among the critical elements of sustainable urbanism.** We use the following list of criteria to identify industrial blight. Our spatial criteria identify the whereabouts of industrial properties by using three **proximity** thresholds:
 - ❑ **Major roads, road intersections, highway access points and interchanges** (< 1 mile)
 - ❑ Accessible locations for industrial sites
 - ❑ **Neighborhoods** (< $\frac{3}{4}$ of a mile)
 - ❑ Historically provided housing with proximity to industrial jobs; blighted industrial sites now pose a threat to environmental justice (particularly in the case of abandoned brownfields)
 - ❑ **Schools** (< $\frac{1}{4}$ mile)
 - ❑ Elementary, middle, and high schools (public or private)

Sources of Industrial Blight Data

- ❑ **Shelby County Assessor of Property** (2017) obtained parcel ID, parcel size, land use codes, zoning classification, and tax status to determine liability for vacant properties.
- ❑ **PolicyMap** (2018) reports and maps **socioeconomic** and **neighborhood statistics** by zip code and **block group**.
- ❑ **Shelby County Land Bank** (2018) very few 1+ acre listings for sale, only two properties classified Vacant Industrial. Spreadsheet from Shelby County Land Bank excerpted below right.



Questionable Locations:
Dodd Road has residential blight, vacant land, and closed nearby school: Coro Elementary. Toxins? Overgrowth? Needs more investigation.

08204700000300	5305	WEAVER RD	38109	85	339	IRR	0.556	VCNT LAND	R-6	1304	\$2,500.00
08204900000130	5313	LOUISE RD	38109	132	330		1.000	VCNT LAND	R-6	1203	\$3,500.00
08204900000220	5310	NORMA RD	38109	58	165		0.210	LAND LOCKED	R-6	701	\$1,200.00
08205200000020	5000	EAST SHORE	38109	100	194		0.445	VCNT LOT	R-10	1102	\$3,500.00
08205200000490	1425	LONGCREST	38109	100	200		0.450	VCNT LOT	R-6	405	\$3,000.00
08205200000530	1379	LONGCREST RD	38109	100	200		0.450	VCNT LOT	R-6	604	\$4,000.00
08205400000020	1301	MARGARET	38109	132	220		0.530	VCNT LOT	R-6	903	\$2,500.00
08205600000040	1279	DES ARC	38109	100	200		0.450	VCNT LOT	R-6	703	\$6,000.00
08205600000070	5055	BOWERS RD	38109	100	244		0.560	VCNT LOT	R-6	1101	\$3,000.00
08205600000170	5082	HILL	38109	100	240		0.551	VCNT LOT	R-6	1203	\$3,500.00
08206000000240	1390	NORTH DR	38109	110	219		0.553	VCNT LOT	R-10	1203	\$3,000.00
08206100000190	0	PITTMAN	38109	53	123	IRR	0.136	VCNT LAND	R-10	1304	\$2,000.00
08206100000200	0	PITTMAN	38109	50	85		0.090	LAND LOCKED	R-10	702	\$400.00
08206100000220	0	PITTMAN	38109	50	100		0.110	LAND LOCKED	R-10	405	\$1,000.00
08206100000230	0	PITTMAN	38109	52	209		0.240	VCNT LOT	R-10	1101	\$2,500.00
B	08206100000240	0	PITTMAN	38109	52	209	0.240	LAND LOCKED	R-10	702	\$1,500.00
B	08206100000250	0	PITTMAN	38109	52	209	0.240	LAND LOCKED	R-10	702	\$1,500.00
B	08206100000260	0	PITTMAN	38109	52	209	0.240	LAND LOCKED	R-10	702	\$1,500.00
B	08206100000270	0	PITTMAN	38109	52	209	0.240	VCNT LOT	R-10	702	\$2,500.00
08206200000240	0	DODD	38109	70	513	IRR	1.454	VCNT LAND	IH	1203	\$3,000.00
08206200000390	0	DODD	38109	0	0		1.037	VCNT LAND	IH	1402	\$1,200.00
08207300000140	0	SHELBY - (REAR)	38109	30	100		0.070	VCNT LOT	IH	9	\$50.00
08301800000210	0	JEWELL	38128	75	406		0.699	VCNT LOT	R-10	1203	\$4,500.00

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For Sale list.18-Nov.xls

SHELBY COUNTY DELINQUENT TAX PARCELS November - 2018 (Parcel Availability and Pricing Subject to Change)

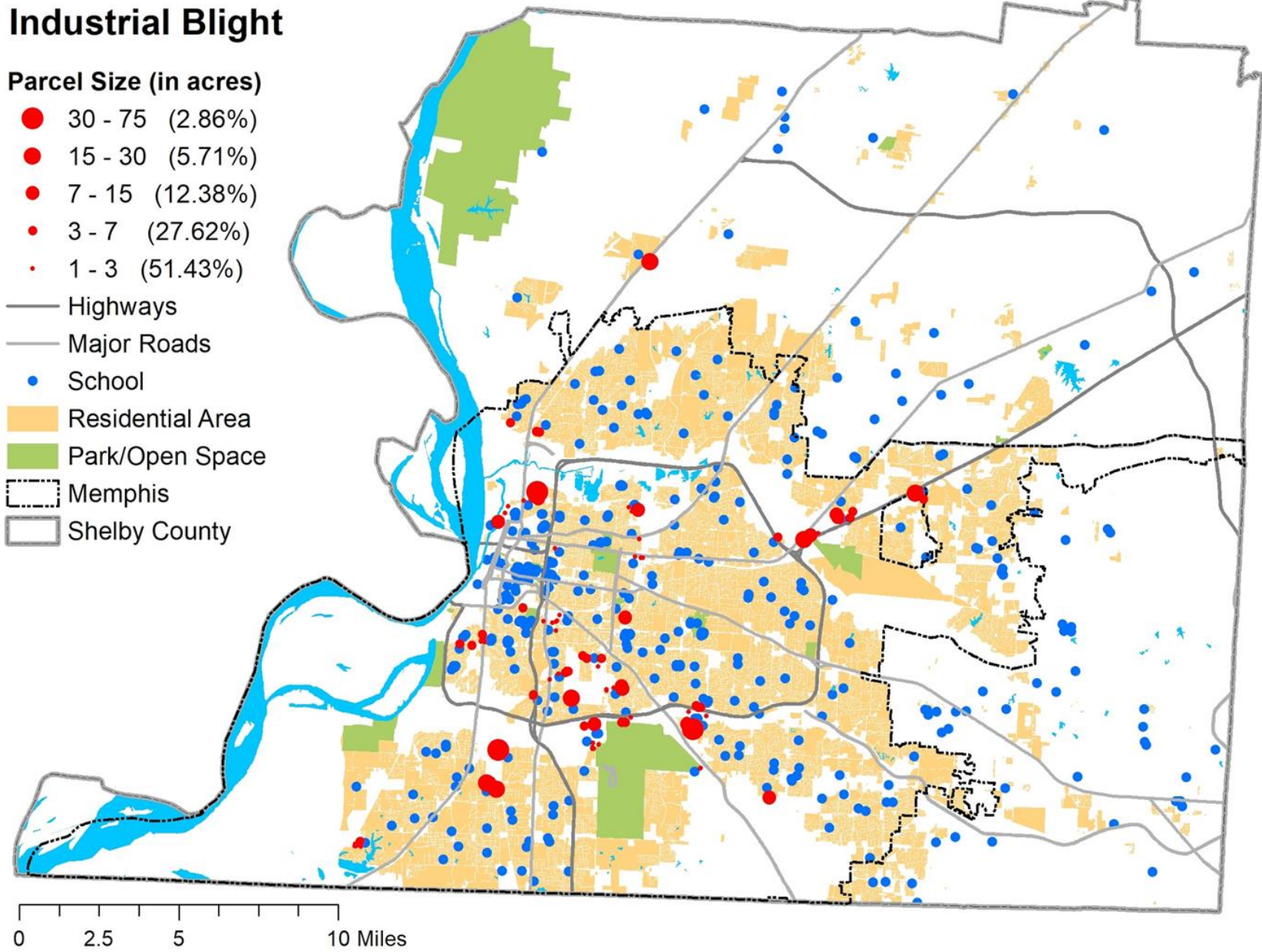
Status	Tax Parcel ID No.	No.	Street	Zip Code	Width	Depth	Config	Size (Ac.)	Improvements	Zoning	Tax Sale	Asking Price
	08301800000310	3326	JEWELL RD	38128	49	406		0.455	VCNT LOT	R-10	1302	\$2,000.00
	08302900000170	3390	CHAPEL	38128	50	150		0.170	VCNT LOT	R-6	1004	\$2,000.00
	08302900000240	3379	PLUM AV	38128	50	150		0.170	VCNT LOT	R-6	1004	\$2,000.00
	08303000000170	0	SPRING	38128	15	150		0.046	VCNT LAND	R-6	1302	\$50.00
	08303000000210	0	SPRING	38128	15	150		0.050	LAND LOCKED	R-6	405	\$800.00

Limitations of Using Assessor of Property Data to Identify Industrial Blight

- ❑ Inconsistencies between zoning and land use classifications:
 - ❑ Parcels that have been rezoned, but current use not updated in the dataset--undercounting problem
 - ❑ Parcels that are zoned as industrial, but are classified for residential use--overcounting.
- ❑ Classification of GIS field mismatch problem, e.g. classified vacant and zoned industrial:
 - ❑ Parcels that are classified as vacant, but are not vacant--overcounting
 - ❑ Parcels that are not classified as vacant, but are vacant--undercounting
- ❑ Blight-adjacent mismatch problem
 - ❑ Parcels that are adjacent to blighted properties (classified vacant, zoned industrial)--overcounting properties
 - ❑ Parcels (zoned industrial) that have been vacant for years, and are now overgrown--overcounting properties
- ❑ Ambiguous zoning
 - ❑ Mismatch between property class, zoning code, and land use code--properties not counted

Open Districts	
P	Parks
OS	Open Space
FW	Floodway
CA	Conservation Agriculture
CIV	Civic
Residential Districts	
R-MP	Manufactured Home Park
R-E	Residential – Estate
R-15	Residential Single-Family – 15
R-10	Residential Single-Family – 10
R-8	Residential Single-Family – 8
R-6	Residential Single-Family – 6
R-3	Residential Single-Family – 3
RU-1	Residential Urban – 1
RU-2	Residential Urban – 2
RU-3	Residential Urban – 3
RU-4	Residential Urban – 4
RU-5	Residential Urban – 5
Mixed Use Districts	
RW	Residential Work
OG	Office General
CMU-1	Commercial Mixed Use – 1
CMU-2	Commercial Mixed Use – 2
CMU-3	Commercial Mixed Use – 3
CBD	Central Business
CMP-1	Campus Master Plan – 1
CMP-2	Campus Master Plan – 2
Industrial Districts	
EMP	Employment
WD	Warehouse & Distribution
IH	Heavy Industrial
Special Purpose Districts*	
SCBID	South Central Business Improvement
U	Uptown
Overlay Districts	
-MO	Medical Overlay
-UDO	University Overlay
-TO	Transitional Office Overlay
-RC	Residential Corridor Overlay
-H	Historic Overlay
-AP	Airport Overlay
-FP	Floodplain Overlay
-FC	Fletcher Creek Overlay
-NC	Neighborhood Conservation Overlay
DELETED DISTRICTS	
R-HO	Residential Home Overlay
Win Park SPD	Winchester Park Special Pilot District

The Geography of Industrial Blight

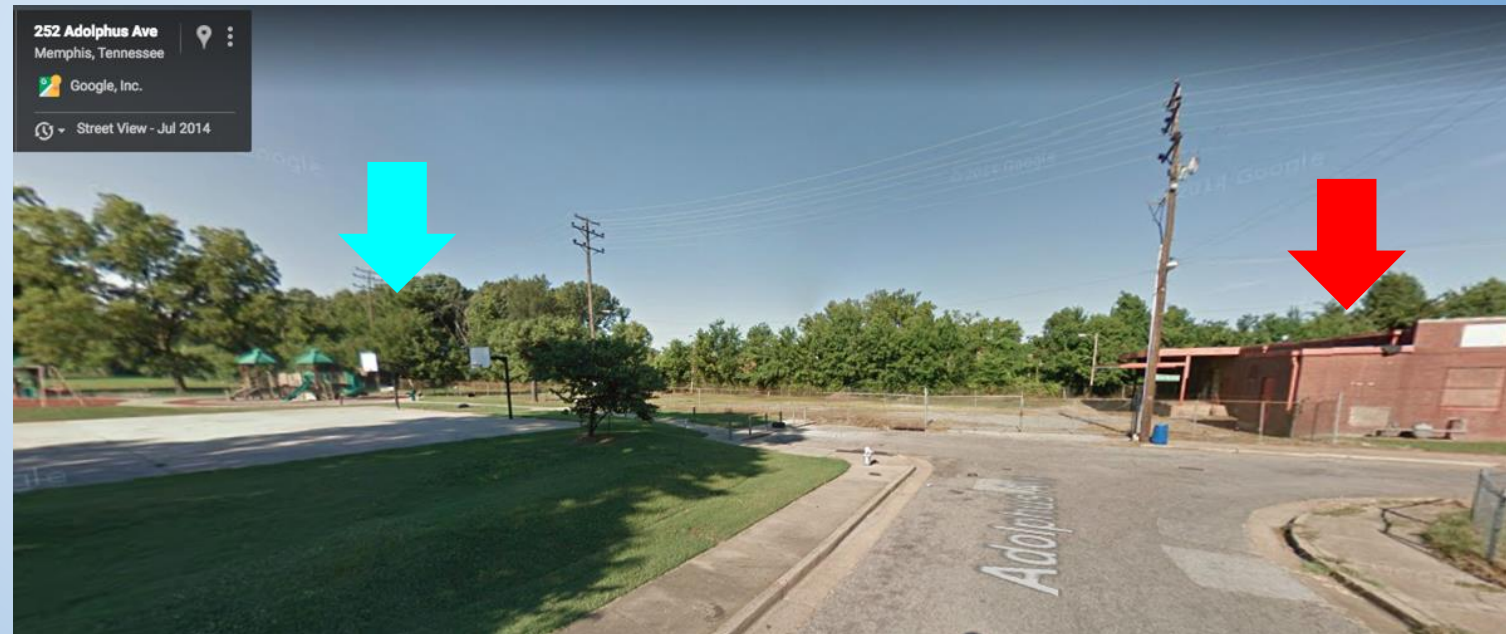


Memphis and Shelby County TN

Expansive Impacts of Blight

- ❑ Increased surface runoff
- ❑ Reduced flood resistance
- ❑ Decreased natural habitat
- ❑ Environmental degradation
- ❑ Wasted resource of space
- ❑ Attracts crime and reflects poverty
- ❑ Lowers nearby property values
- ❑ Reduces potential tax revenues
- ❑ Lower quality of life in neighborhood
- ❑ Lack of business investment
- ❑ Dangerous, fire hazard, unsafe use of land (Code of Ordinances, 2007)

- ❑ The impact of Industrial blight can be measured in terms of **social equity, economic efficiency, and environmental sustainability**—the **3-Es of sustainable development**.

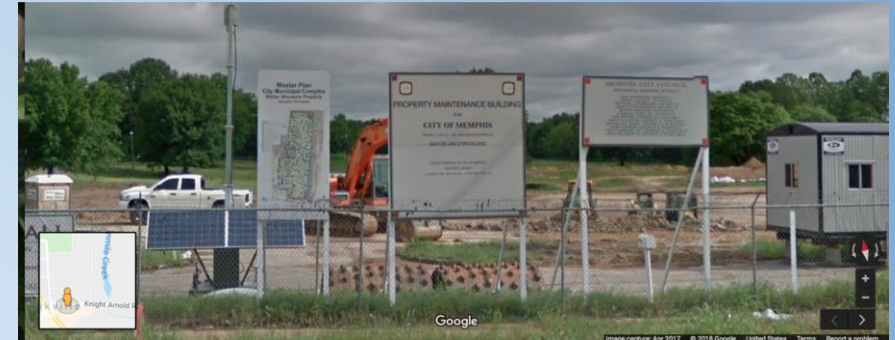


Blight adjacent to school playground in South Memphis, 1.7 miles from Stax Museum of American Soul Music - could be reused as green space, urban garden or extension of playground for surrounding community

Site Specific Cases: Large-Scale Industrial Blight in Proximity to Neighborhood and Schools

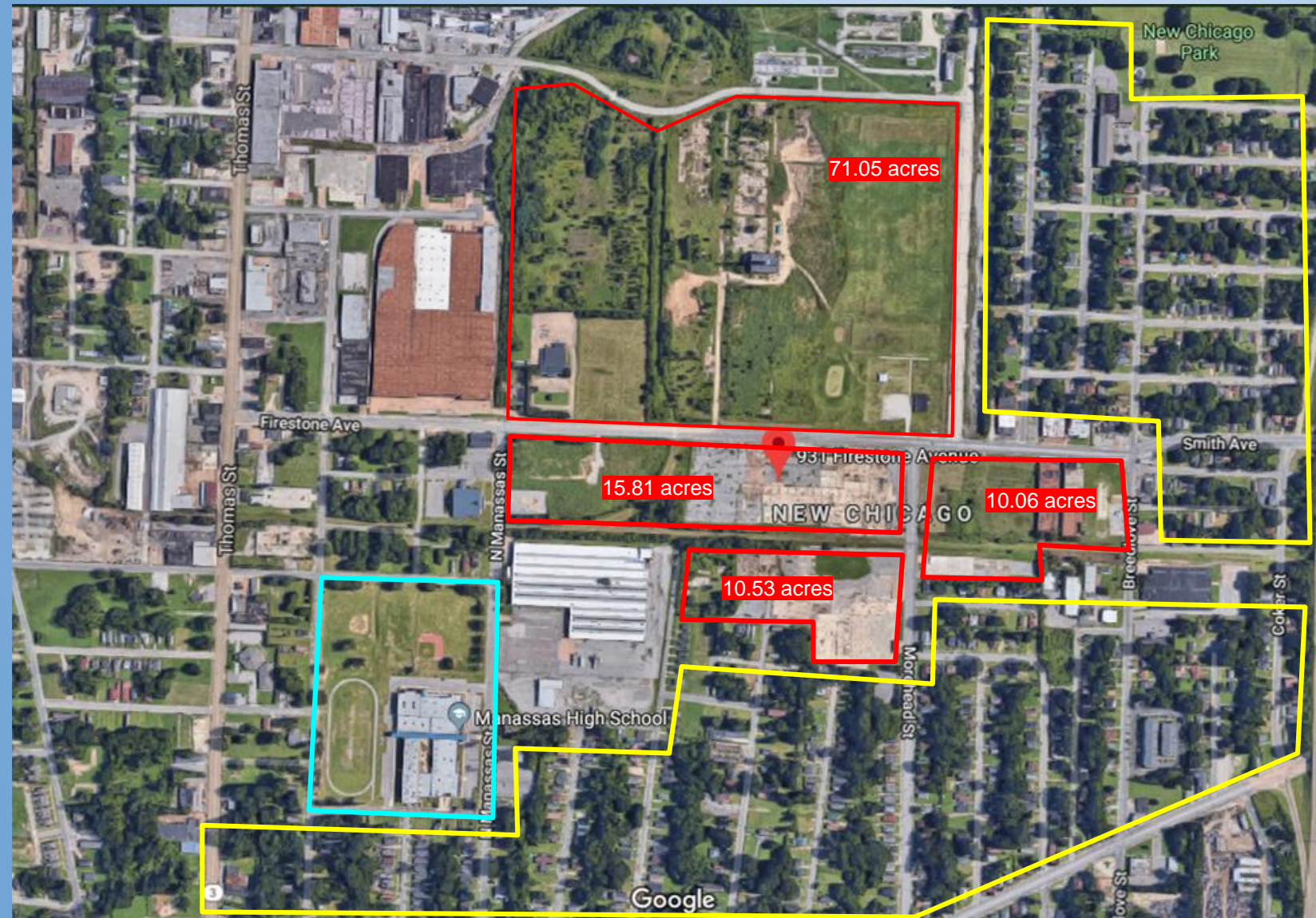


Red: Vacant Land, Cyan: School, Yellow: Residential Area



- 1. Abandoned Industrial Site:**
3800 Knight Arnold Rd. Memphis, TN 38118
(82.89 acres) *PARTS OF SITE ARE IN USE AND UNDER CONSTRUCTION - entire apartment complex on right side of site is BLIGHTED / boarded up
 - American Way Middle School (center-left) rated C- by Niche.com 2018
 - Getwell Elementary School (center-right) rated C- by Niche.com 2018
 - Residential Area has a Median Home Value of \$68.2K, Block Group 2010
 - Block Group Vacancy 51.72%
 - Block Group Poverty 34.43% (Census Tract, 2010)
 - Walkability 39%
 - Public Transit Accessible
 - Within 100-500 Year Flood Zone, FEMA

Site Specific Cases: Large-Scale Industrial Blight in Proximity to Neighborhood and School

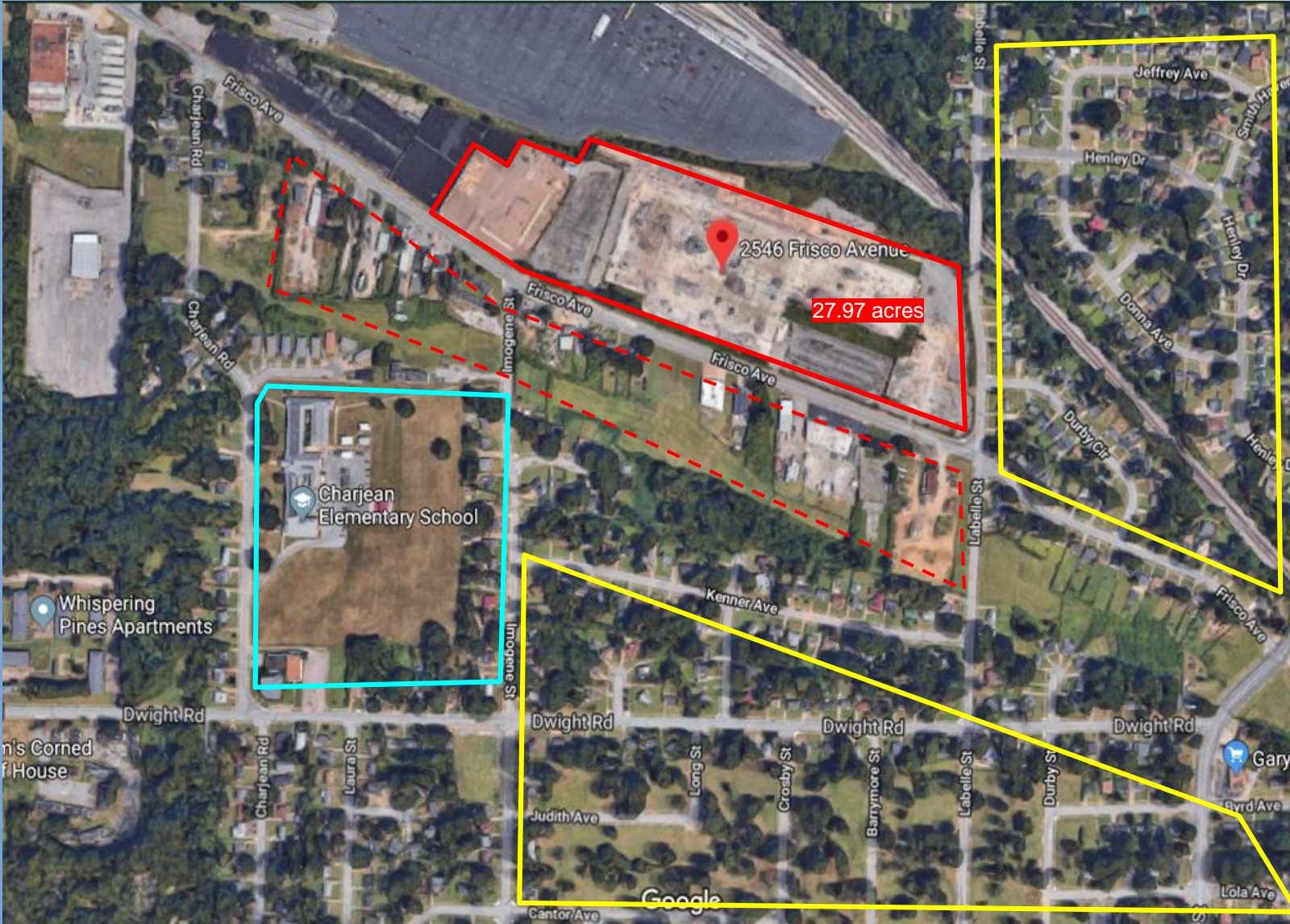


2. Abandoned Industrial Site
931 Firestone Ave. Memphis,
TN 38107 (107.45 acres)

- Manassas High School rated C- by Niche.com, 2018
- Residential area has a median home value of \$39K
- Block Group Vacancy 32.5%
- Block Group Poverty 25%
- Walkability 35%
- No Public Transit stop
- Food Desert
- 0.49 miles from 100-500 Year Flood Zone, FEMA

Red: Vacant Land, Cyan: School, Yellow: Residential Area

Site Specific Cases: Large-Scale Industrial Blight in Proximity to Neighborhood and School



3. Abandoned Industrial Site
2546 Frisco Ave. Memphis, TN 38114
(27.97 acres) *most buildings/businesses in between site and residential area are BLIGHTED / abandoned as well

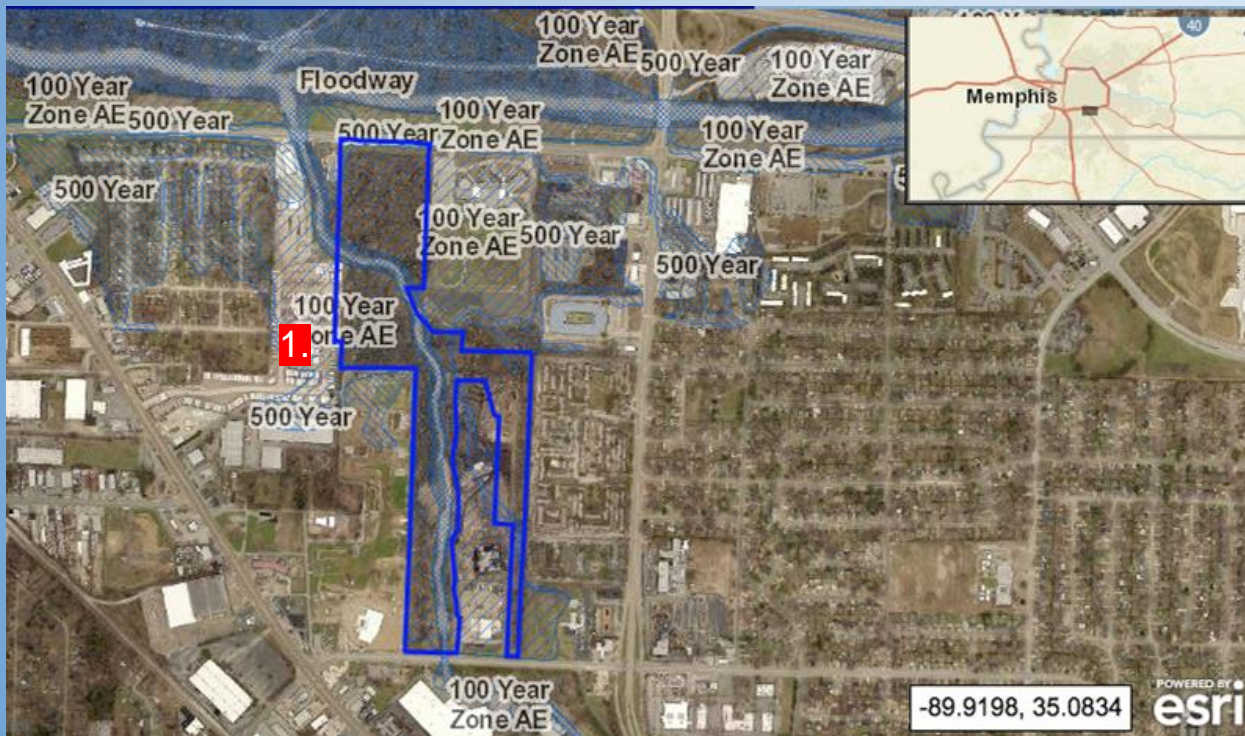
- Charjean Elementary School rated C- by Niche.com 2018
- Block Group Median Home Value of \$49.7K
- Block Group Vacancy 27.3%
- Block Group Poverty 44%
- Walkability 25%
- No Public Transit stop
- 0.84 miles from 100-500 Year Flood Zone, FEMA

Red: Vacant Land, Cyan: School, Yellow: Residential Area

Large-Scale Industrial Blight in Proximity FEMA Flood Zones

SHELBY COUNTY, TN

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Exemplary Case: Railroad Park Birmingham, Alabama

- ❑ Blighted industrial site, similar to sites in Memphis, containing abandoned warehouses is now a 19 acre park, opened in 2010.
- ❑ Provides 4-block stretch coverage of mixed-use green space alongside railway in Downtown Birmingham.
- ❑ Walkability score is 77%



Schematic view of the proposed [Railroad Reservation Park](#) in the [2004 City Center Master Plan Update](#) by Urban Design Associates.



Exemplary Case: Yale Science Park New Haven, Connecticut

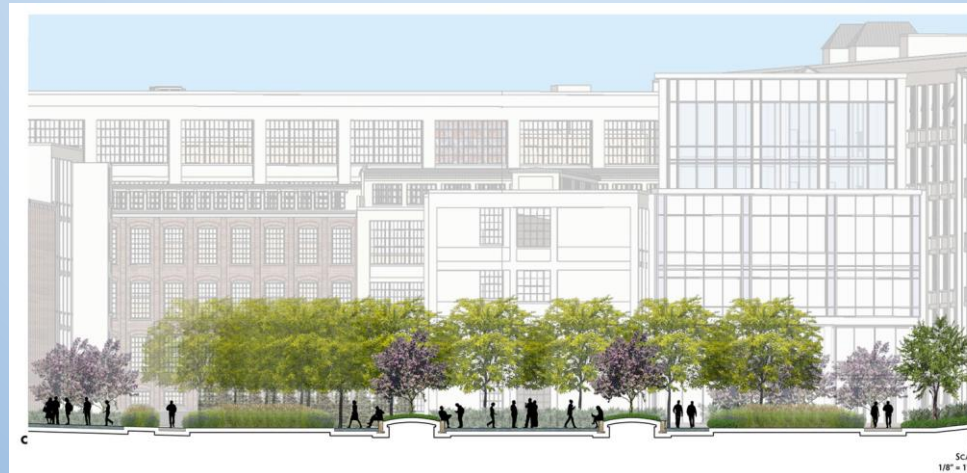
- ❖ Exemplary practices from cities that have revitalized and increased sustainability by alleviating Industrial blight with infill, like turning brownfield green in New Haven.
- ❖ 80-acre brownfield site near Yale University repurposed as vibrant innovation district with mixed-income housing.

Infill Brownfield

- Existing infrastructure
- Savings in local government infrastructure
- Expansion of housing, service types mixed land use in proximity to jobs and services
- Multi-modal accessibility
- Alternative to greenfield sites
- Open space preservation
- Urban revitalization incentives



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Bethany Hughes Portfolio



Chris Randall, HUD USER

Findings and Conclusions

- ❑ The **blighted industrial properties** that meet our spatial search criteria of **proximity to school, residential and major road and highway total = 105*** (1.2 percent of the total (8,521) industrial properties in city and county) range in parcel size from 1 to 75 acres.
- ❑ Blighted industrial properties are concentrated in **North and South Memphis**, (Zip Codes: 38106, 38107, 38114, 38118).
- ❑ The **average size** of blighted industrial properties within Memphis is **6.2 acres**.
- ❑ **Quarter-mile buffer** around blighted industrial properties in Memphis **identified 49 schools**, public and private, elementary, middle and high school.
- ❑ **Three-fourth mile buffer** around blighted industrial properties identified **neighborhoods**.
- ❑ With **residential and school in proximity to blighted industrial properties** in inner city locations, we observed **low median home value** and **C- school rating**.
- ❑ **Site-specific socio-economic statistics** shown on slides 10-12 indicate correlation of blight with degraded neighborhood quality, including public transit access and walkability.
- ❑ Next phase is to determine the total number of blighted properties classified as **Commercial, Vacant** in proximity to schools and neighborhoods. Many more large-scale blighted properties exist within Memphis and Shelby County.

Areas of Further Research

- ❑ For first phase in identifying large-scale blight, our focus was on industrial vacant properties. Logical next steps are to map 1-75 acre vacant/blighted commercial, retail and mixed use properties.
- ❑ Since Industrial blight is a manifestation of the suburbanization and decentralization of jobs and population, inner city limit is a logical focus for mapping--the origin of expansion and industry. Further study could go towards specific suburbs within Shelby County.
- ❑ A number of blighted industrial properties are located within the 100-500 year flood zone. Highest and best use of these properties is likely a remediation recommendation as a green space, to minimize runoff.
- ❑ Walkability scores overall are generally low near blighted industrial properties. Among remediation strategies are infill development enhancing mixed land-use, density and walkability, of the surrounding community.
- ❑ In future research we will develop a framework with a “checklist” of criteria that provides a template for decision-makers to assess Industrial blight with local, site-specific priorities, opportunities and constraints including potential for remediation, mitigation, and (infill) redevelopment alternatives.
- ❑ After identifying, suggesting solutions for site specific cases is end goal.

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