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


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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 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 However, not all blighted properties are classified as vacant due to outdated surveying, which causes discrepancies when collecting data on blight prevalence.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.
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** (< ¾ 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** (< ¼ 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.
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
Industrial Blight

Parcel Size (in acres)
- 30 - 75 (2.86%)
- 15 - 30 (5.71%)
- 7 - 15 (12.38%)
- 3 - 7 (27.62%)
- 1 - 3 (51.43%)

Highways
Major Roads
School
Residential Area
Park/Open Space
Memphis
Shelby County
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
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
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
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%
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
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.
References


https://www.cfgnh.org/About/NewsEvents/ViewArticle/tabid/96/ArticleId/102/Turning-Brownfields-Green.aspx


https://www.census.gov/eos/www/naics/


