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# Chemical Exposure from Manufactured Gas Plants: Demographic & Governmental Research

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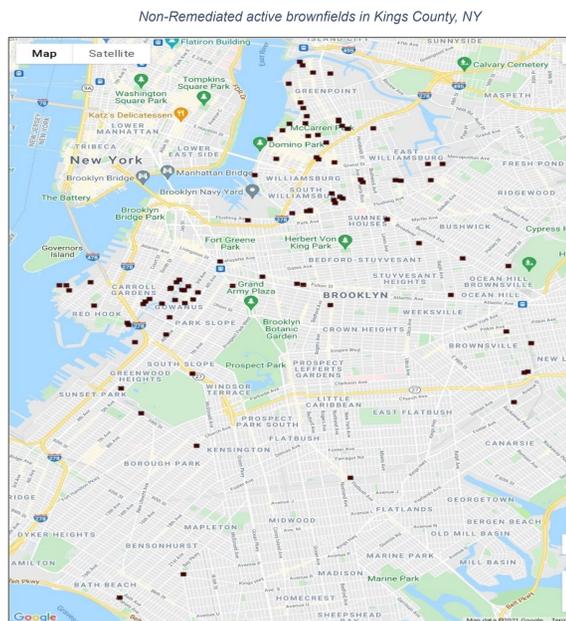
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## ABSTRACT

There are thousands of brownfields in New York on former Manufactured Gas Plants (MGP) similar to the Public Place site in Gowanus, Brooklyn. Public Place is an active brownfield abutting an EPA Superfund site currently undergoing remediation. After consulting recent literature finding that populations living on and near superfund sites have lower life expectancy that also correlate with "socio-demographic factors" like income and race, we used American Community Survey data to conduct a demographic analysis of census districts within the rezone area. Assessment of current demographic data shows that Gowanus residents living within census districts overlapping with the rezone area are both less wealthy and more racially diverse than residents in surrounding districts. Environmental justice and public health concerns remain after remediation of Public Place and other Gowanus brownfields because of the extent of pollution and flood conditions of this area. However, if rezoning is implemented, demographics of this area will likely change in ways that complicate correlations between race, income, and environmental justice.

## DISCUSSION



## MATERIALS AND METHODS

- Extensive literature and Database research was conducted to prove hypothesis

- Historical and scientific literature and demographic data were selected carefully to explain this research.

- Key words: Manufactured Gas Plant (MGP), Rezone, Brownfields, Remediation

- NYS DEP GIS data sets were used to see active/non-active brownfields in Kings County.

- American Community Survey was used to collect demographic data including: racial and income demographics for the areas adjacent to public place.

- Experts Consulted: Professor Nora Almeida

## INTRODUCTION

Department of Environmental Conservation (DEC) who is responsible for remediation in New York State didn't see the potential numbers of MGP until 1990s. The process of remediation starts with a site characterization, progresses to a remedial investigation, then to a feasibility study and continues into the design and construction of the remedy. Since 2000, the amount of sites have increased steadily from approximately 90 to more than 200 today. MGPs have a long history in New York State, starting in 1826 with a small demonstration plant in New York City that produced gas from whale oil. From this modest beginning through the closure of the last active plant in 1972, MGPs were a visible and important part of life throughout the State. The responsibility for most of the MGPs identified in the State can be tied to one of the nine gas utilities which still operate in the state. It should be noted that some gas manufacturing companies (particularly in smaller towns) went out of business without being consolidated or taken over by larger utility companies. The New York State DEC continues its research efforts to locate these plants so they can be investigated and, if necessary, cleaned up. Since the problems associated with the former MGP sites were identified, the Department has been working with the utilities on a statewide basis to identify, investigate and clean up MGP sites. The Department will either seek to identify a responsible party or address the remaining identified former MGP sites under either the State Superfund or one of the Department brownfield programs.

Census Data of Five Districts Associated with Gowanus based on Race and Income

Table with 7 columns: Statistics, Census Tract 71, Kings County, New York, Census Tract 75, Kings County, New York, Census Tract 77, Kings County, New York, Census Tract 119, Kings County, New York, Census Tract 127, Kings County, New York, TOTAL (All Selected Census Tracts). Rows include Total Population, Race, Hispanic or Latino by Race, and Household Income.

The Gowanus rezone area sits in Brooklyn's Community Board (CB) 6, in-between the neighborhoods of Carroll Gardens, Park Slope, and Boerum Hill. The demographic research indicates that in Gowanus Brooklyn communities currently living next to the Superfund site and on former MGPs are both more racially diverse and lower income than residents in surrounding districts. A recent study in Nature found disproportionate numbers of low income, non-white residents live near EPA superfund sites and face increased public health risks. This demographic data could change if the rezoning plan is finalized and implemented. The Gowanus rezoning would potentially introduce environmental justice concerns if low income housing was concentrated on Public Place. However, the number of active brownfields in this area, where both low income and market rate housing will be developed illustrate that the environmental and demographic correlation is complex and inconclusive in urban, gentrifying areas like Brooklyn.

The Gowanus Rezoning



## RESULTS

New York State DEC shows over 50 active Brownfield sites in their database in Kings County, NY and more than 15 in the Gowanus rezone area. We focused on 5 census districts in our analysis to see population statistics for the section of Gowanus, Brooklyn currently being rezoned. We looked at data such as total population, income, and race to see if the new potential "affordable housing" and school could be actually affordable for people already living in the area and whether affordable units would be concentrated on polluted sites. The census districts that primarily intersect with the rezone area are 71, 119, and 127 (and to a smaller extent 75 and 77). Districts 71 and 127 with almost 10,000 total residents are predominantly African American and Latino with incomes below \$60,00 per year and almost no homeownership. District 119 with 1,300 residents is both whiter and wealthier but has a lower overall population and is still more diverse than surrounding areas in CB6. New housing would include market rate housing and low income housing developed on former MGPs.

## CONCLUSION

Brownfields are abandoned or underutilized industrial and commercial sites that are, or are perceived to be, chemically, physically, or biologically contaminated. In the early 1990s, a coalition of big-city mayors and legislators from urban industrial states pressured the US Congress and the US Environmental Protection Agency to start a pilot program that would turn these eyesores into new factories, businesses, and other job- and tax-creating activities. Housing was not an initial focus. The analysis of demographic data obtained from the American Community Survey within the districts of the rezoning of Gowanus, raises concerns about environmental justice and equity if affordable housing is concentrated on former MGPs. If the rezoning is implemented, new developments of both low and market rate housing will potentially change the demographics of this area and complicate correlations between race, income, and environmental justice.

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