

## Past Is Prologue When It Comes To Increasing Installed Capacity

Before Article X was reauthorized, the DEC granted Title V permits to sites that were predominantly located in potential environmental justice areas. In the absence of the Article X power plant licensing law, utilities were siting 79.9-megawatt facilities. There was some concern, from an environmental justice perspective, that these 'mini' plants would be disproportionately sited in minority neighborhoods. The New York State Department of Environmental Conservation (DEC) issued air pollution control permits in 2001 to the New York Power Authority (NYPA) to allow the construction and operation of six new electric generating facilities in three New York City boroughs and Brentwood, Suffolk County. Permits, known as State Facility permits, were issued for new facilities in the following locations:

- Harlem River Yard Plant - East 132nd Street, Bronx, 2 turbines;
- Hell Gate - East 132nd to East 134th streets and Locust Avenue, Bronx, 2 turbines;
- North 1st Street Plant - North 1st Street and River Street, Brooklyn, 1 turbine;
- 23rd and 3rd Plant - 23rd and 3rd avenues, Brooklyn, 2 turbines;
- Vernon Boulevard Plant - 42-30 Vernon Boulevard, Queens, 2 turbines; and
- Brentwood - at the former Pilgrim State Hospital, Brentwood, Suffolk County, 1 turbine.

Although touted as a hedge against blackouts, local communities complained about disproportionate impacts. Five of the six units are located in environmental justice areas. It might make sense to the utilities to place new capacity at current sites, but when those sites are located in vulnerable communities, it represents an environmental injustice. We can assume that if the 2,000 megawatts of IPEC

power are reduced or eliminated, additional capacity will be constructed in current plant locations.

### Economic Injustice

In addition to clean air and other environmental considerations, economic factors will also create a burden on vulnerable communities. Utilities are already struggling to address post deregulation price adjustments. Wholesale rates were deregulated while retail rates were largely frozen. Utilities are seeking rate increases to make up for those years. New York already has the highest utility rates in the nation. Yet, the state is considering options that could lead to the closure of an emission free electricity asset? Most environmental groups might not care about the high cost of energy and electricity, but AAEA does. Low-income people will have to choose between heating and cooling or eating and keeping a roof over their heads. Poor, single mothers with asthmatic children will not be able to afford the expensive asthma medications (nebulizer, steroids).

We agree with the Charles River Associates finding that, "Every replacement option studied will result in a cost increase to energy consumers throughout the state, either through increased market prices or subsidies to new generators. If the market is allowed to function without subsidies for new generation, consumer prices will see marked increases."<sup>63</sup> CRA points out that, "NYC consumers would pay approximately \$300 million per year more for wholesale energy, or approximately a 5-10% increase."<sup>64</sup> Even more disturbing, the CRA finds that,

Our analysis indicates that the additional costs to consumers from the various options range from a total net present value (NPV) of \$691 million for a combined cycle thermal replacement option in the Lower Hudson Valley and NYC to \$2.1 billion for a low carbon solution. These costs are in addition to increased costs for energy,

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<sup>63</sup> Charles River Associates, Indian Point Energy Center Retirement Analysis, Prepared for New York Department of Environmental Protection, August 2, 2011, p. 11.

<sup>64</sup> Id



an given the large uncertainties associated with project development, should be considered a minimum.<sup>65</sup>

Clearly low-income people in vulnerable communities will be devastated by such massive price increases. Fish eggs are important, but the lives of low-income people and vulnerable children are valuable too. These circumstances should be considered under the 'adverse environmental impacts' section related to best technology available.

### Energy Security On The Backs of Vulnerable Communities

Proponents of shutting down IPEC will tout the sufficiency of NYC's installed capacity and planned capacity additions. However, these additions are largely natural gas based and dependent upon the security of pipelines in order to assure grid reliability. What happens if there are pipeline disruptions or severe winters such as the 2013/14 winter? The answer is fuel oil will be used to replace any eliminations of natural gas. According to Charles River Associates,

An important, but little known, component of NYC's energy security is the supply of natural gas. The NYC market always operates a base level of oil fired generating capacity to avoid electrical load shedding events in the event of an interruption to the gas pipeline flows. There is a substantial possibility that the requirement to dependence on gas flows to support 2,000 MW of generation in the Lower Hudson Valley could introduce additional reliability constraints and changes in market operations with unknown economic consequences.<sup>66</sup>

Much of this oil fired generating capacity is located in vulnerable communities. In the event of a major natural gas disruption, these vulnerable communities would suffer the consequences of additional air pollution loads. IPEC is a major insurance policy against such possibilities.

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<sup>65</sup> Id  
<sup>66</sup> Id

## Prevention of Significant Deterioration

Buchanan, New York is a nonattainment area for ozone (See Figure 1). It is an attainment area for particulate matter (PM). Cooling towers could push an area that is in attainment for PM into nonattainment. Not only does the cooling tower recommendation represent a shutdown threat to IPEC, it also represents a new air pollution threat to the local area.

Figure 1

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The attainment status for this location is provided below. (Areas classified as attainment are those that meet all ambient air quality standards for a designated criteria air pollutant.)<sup>67</sup>

### **Criteria Pollutant Attainment Status**

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Particulate Matter (PM) ATTAINMENT

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Particulate Matter < 10 $\mu$  in diameter (PM10) ATTAINMENT

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Sulfur Dioxide (SO<sub>2</sub>) ATTAINMENT

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Ozone\* SEVERE NON-ATTAINMENT

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Oxides of Nitrogen (NO<sub>x</sub>)\*\* ATTAINMENT

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Carbon Monoxide (CO) ATTAINMENT

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\* Ozone is regulated in terms of the emissions of volatile organic compounds (VOC) and/or oxides of nitrogen (NO<sub>x</sub>) which are ozone precursors.

\*\* NO<sub>x</sub> has a separate ambient air quality standard in addition to being an ozone precursor

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DEC does not directly regulate mineral deposition from the cooling towers. It appears that salt deposition from certain cooling tower configurations would push the area into nonattainment for particulate matter. According to a TRC report:

TRC evaluated air quality impacts and other environmental considerations of the Project, which is identified by Entergy's consultant Enercon to consist of two hybrid circular mechanical draft cooling towers, one for each steam turbine condenser at

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<sup>67</sup> DEC Permit Review, p. 2. [http://www.dec.ny.gov/dardata/boss/afs/permits/prr\\_355220008700019\\_r1.pdf](http://www.dec.ny.gov/dardata/boss/afs/permits/prr_355220008700019_r1.pdf)

IPEC. The purpose of the Project cooling towers is to dissipate heat generated by the stations.

The circulating water was conservatively assumed to contain as much as 7,200 ppm of total dissolved solids, primarily as sodium chloride (NaCl).<sup>41</sup> As drift droplets are emitted and deposit downwind from the towers the minerals in the circulating water may be deposited. Cooling tower drift from the Project cooling towers is anticipated to be kept to a minimum through the use of high efficiency drift eliminators with liquid water drift being maintained at or below 0.001% of the circulating water rate. However, due to the substantial height of the tower and exhaust plume, the mineral (i.e., salt) nonetheless would be carried a considerable distance from the cooling towers being studied.

The worst case particulate matter impacts occurred during wet mode operating conditions. The maximum ground level concentrations of PM-10 and PM-2.5, when added to a representative background concentration for Westchester County were shown to exceed the NAAQS by a substantial margin.

TRC and Enercon concluded that the Project's closed cycle cooling towers would emit particulates in excess of 100 tons per year, the regulatory threshold for requiring the Project to undergo a major new source review for particulate emissions, triggering a state requirement for obtaining an air quality construction and operating permit under 6 NYCRR Parts 201 and 231. TRC assessed the impact of the fine particulate on the local and surrounding communities and determined that it posed a significant adverse threat to the ambient air quality. TRC further concluded that mitigation measures that could reduce the adverse impact, such as higher efficiency drift eliminators or reductions in the dissolved solids content of the circulating water, do not sufficiently eliminate the adverse impact or are infeasible. In conclusion, TRC's AERMOD analysis demonstrates that the particulate emissions from the Project cooling towers will cause an adverse air quality impact to the surrounding community, such that obtaining a required construction and operating air emissions permit pursuant to 6 NYCRR Part 201 would not be possible.<sup>68</sup>

In addition to representing an environmental injustice to vulnerable communities in New York City, the cooling tower recommendation turns an attainment area for

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<sup>68</sup> TRC IPEC Cooling Tower Air Quality Modeling, p. 25: 5.1-5.2. <http://www.readbag.com/dec-ny-docs-permits-ej-operations-pdf-entcoolingtwr2>

PM into a nonattainment area. How can DEC do this? The agency is supposed to be protecting the air quality of the state, but is contributing to pollution by recommending cooling towers for IPEC.

The cooling tower recommendation triggers Prevention of Significant Deterioration (PSD), which applies to major modifications at existing sources for pollutants where the area the source is located is in attainment with the National Ambient Air Quality Standards (NAAQS). It requires the following:

1. installation of the "Best Available Control Technology (BACT);"
2. an air quality analysis;
3. an additional impacts analysis; and
4. public involvement.

DEC is standing PSD on its head by recommending a BTA that creates a situation that requires a BACT for its installation. Just as DEC did not consider environmental justice in its permit review, it also has not included public involvement for this PSD issue.<sup>69</sup>

### Natural Gas

Very low natural gas prices are causing nuclear plants to close and preventing renewables projects from being constructed. AAEA is concerned that low natural gas prices could ultimately lead to the closure of IPEC. The Vermont Yankee closure announcement is the best example of this phenomenon. Replacing 2,000 MW of emission free electricity provided by IPEC with natural gas will lead to increased emissions in the nonattainment Lower Hudson Valley. Considering that it would cost approximately \$15-\$20 billion to replace IPEC with another 2,000 MW nuclear power facility, it begs credulity that DEC would instigate any scenario that would lead to the closure of this multi-billion dollar

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<sup>69</sup> EPA, Prevention of Significant Deterioration (PSD), Basic Information.

asset. Such a plan is not on the radar screen for New York. Disruptions, increased smog production, price unpredictability, methane leakage and CO2 emissions contributing to global warming and monopoly considerations all point to maintaining diversity in our energy delivery as an important condition for energy stability in New York. Press reports have been highlighting the situation for years now:

Across the country, utilities are turning to natural gas to generate electricity, with 258 plants expected to be built from 2011 through 2015. The U.S. Energy Information Administration says it costs about \$978 per kilowatt of capacity to build and fuel a big gas-fired power plant, compared with \$5,339 per kilowatt for a nuclear plant.

Enormous quantities of natural gas have been discovered in the U.S., especially in underground shale formations, where it is being extracted through hydraulic fracturing, or "fracking."<sup>70</sup>

It simply is not logical or reasonable to limit or eliminate a reliable non-emitting source of electricity with emitting sources. DEC should be encouraging IPEC to remain open, not proposing unnecessary retrofits that it knows will lead to closure of the facility.

Con Edison provides gas to customers in Manhattan, the Bronx, parts of Queens and Westchester County (See Map).<sup>71</sup> Con Edison in New York estimated that the typical home-heating customer would see a gas bill this month (February 2014) of \$388, which would be nearly 17 percent above last February.<sup>72</sup>

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<http://www.epa.gov/NSR/psd.html>

<sup>70</sup> The Wall Street Journal, March 15, 2012.

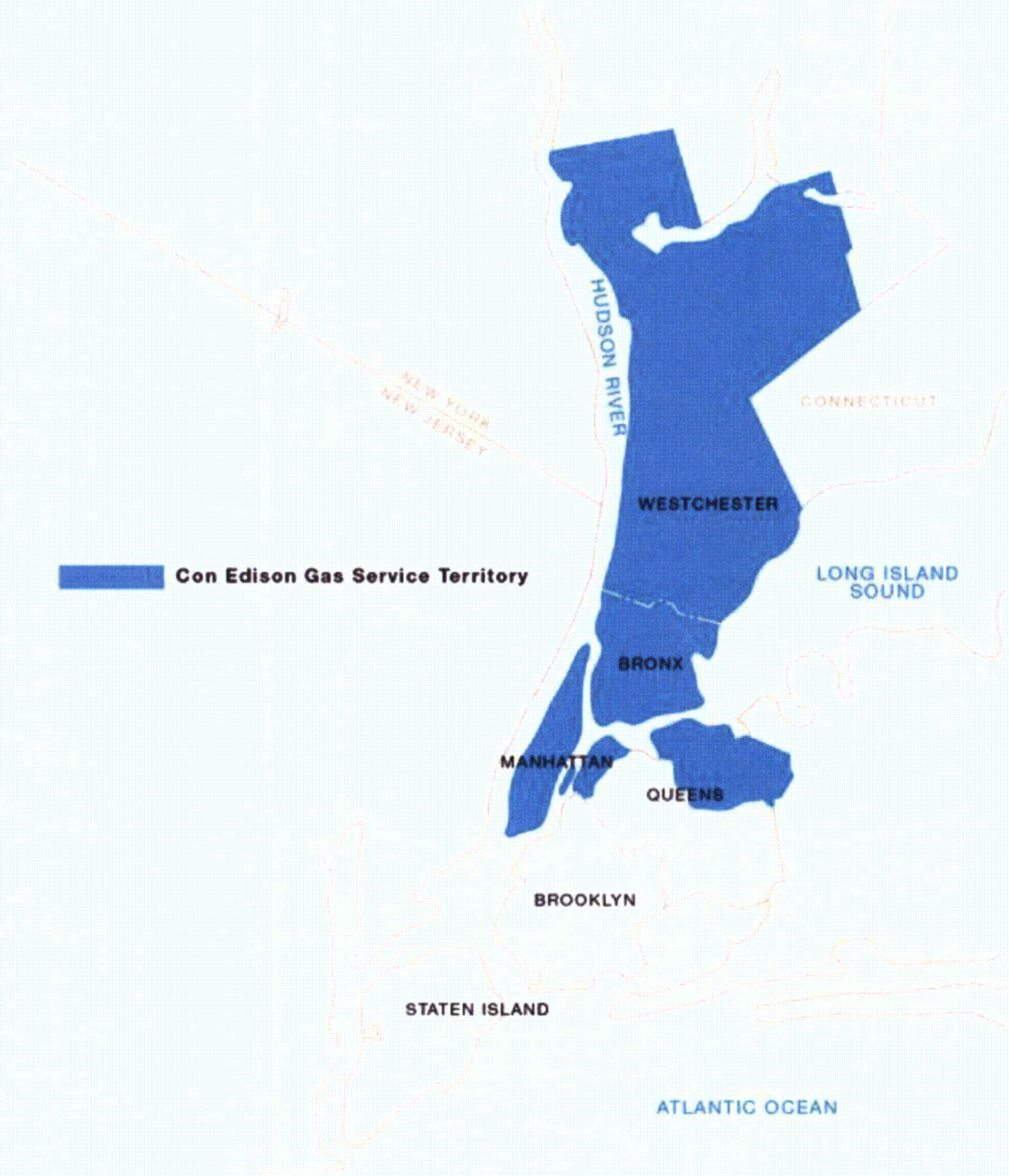
<http://online.wsj.com/news/articles/SB10001424052702304459804577281490129153610>

<sup>71</sup> Con Ed.

<sup>72</sup> The Washington Post, February 24, 2014.

<http://www.washingtonpost.com/blogs/wonkblog/wp/2014/02/24/a-400-gas-bill-its-on-its->

## ConEd Gas Service Territory Map



Some think the natural gas industry is purposefully keeping the price low in order to hurt or kill renewables and nuclear power projects:

By pursuing horizontal drilling and hydraulic fracturing technology as rapidly as possible, gas suppliers have successfully lowered the price at which they are selling their fuel to a level that is unprofitable for most of their less heavily capitalized competitors. Since most gas extractors also extract oil, they have been able to finance their unprofitable gas operations from the healthy profits obtained by selling liquid petroleum at prices that are five times as high today as they were a dozen years ago.

The long-running natural gas sales event has been working in the same way that sales events normally work. More customers are being attracted by the seductive pricing. They are building infrastructure that will take advantage of current natural gas prices, but that infrastructure will lock-in continued purchase of their chosen fuel option. Natural gas competitors are being weakened by being forced to either stop selling or to sell their product at prices that provide little, no, or negative margin above cost.

Each large nuclear plant produces as much energy each day as 200 million cubic feet of natural gas burned in an efficient combined cycle gas turbine (CCGT) plant. When there was a prospect of 28 new plants — with many more to follow if those plants were successful — the natural gas industry was facing the prospect of permanently losing a lucrative market for their product. The initial loss upon completion of 28 new nuclear plants would be about 3 billion cubic feet per day, and that number had the potential for substantial growth.

Is it really surprising that there has been an almost non-stop effort since 2007 to teach us all that natural gas is clean, cheap, and abundant and that climate change is not as worrisome as it seemed to be?<sup>73</sup>

AAEA is not anti natural gas. We simply want an 'all of the above' energy strategy that will provide reliable delivery of electricity at reasonable prices.

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<sup>73</sup> The Energy Collective, December 29, 2013. <http://theenergycollective.com/rodadams/322121/are->

## Conclusion

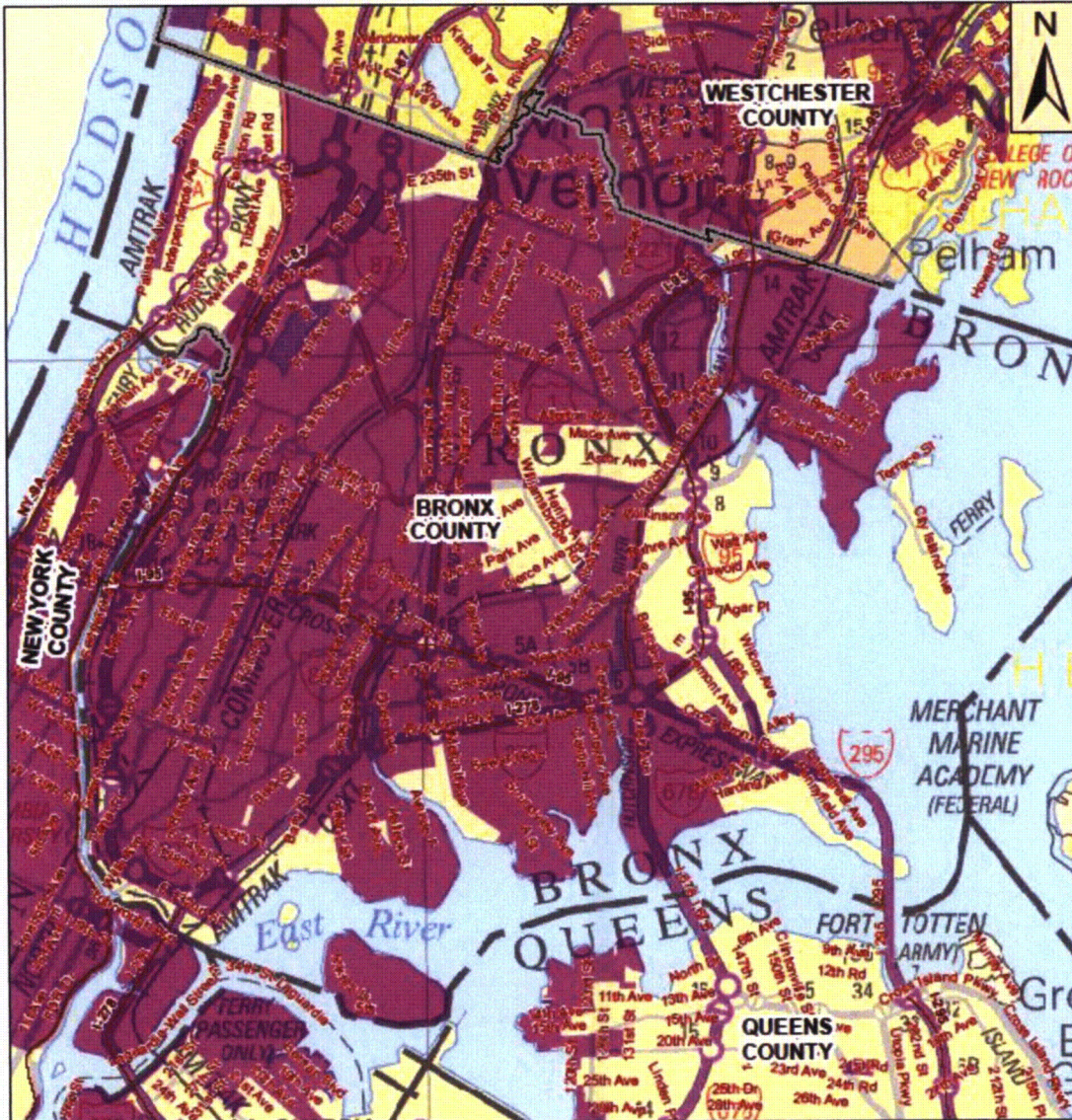
AAEA opposes the DEC recommendations for cooling towers and summer closures. These recommendations, if finalized, will lead to the closure of IPEC. The closure of IPEC will trigger environmental injustice in environmental justice areas. DEC should accept wedgewire screens as BTA and approve the SPDES and Water Quality Certification for IPEC



## Attachment A

### (Potential Environmental Justice Areas)

Potential Environmental Justice Areas in Bronx County, New York  
 Click on any Potential EJ Area outlined in blue for a detailed map



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Data Source for Potential Environmental Justice Areas:  
 U.S. Census Bureau, 2000 U.S. Census

#### Legend

- Potential EJ Area
- County Boundary

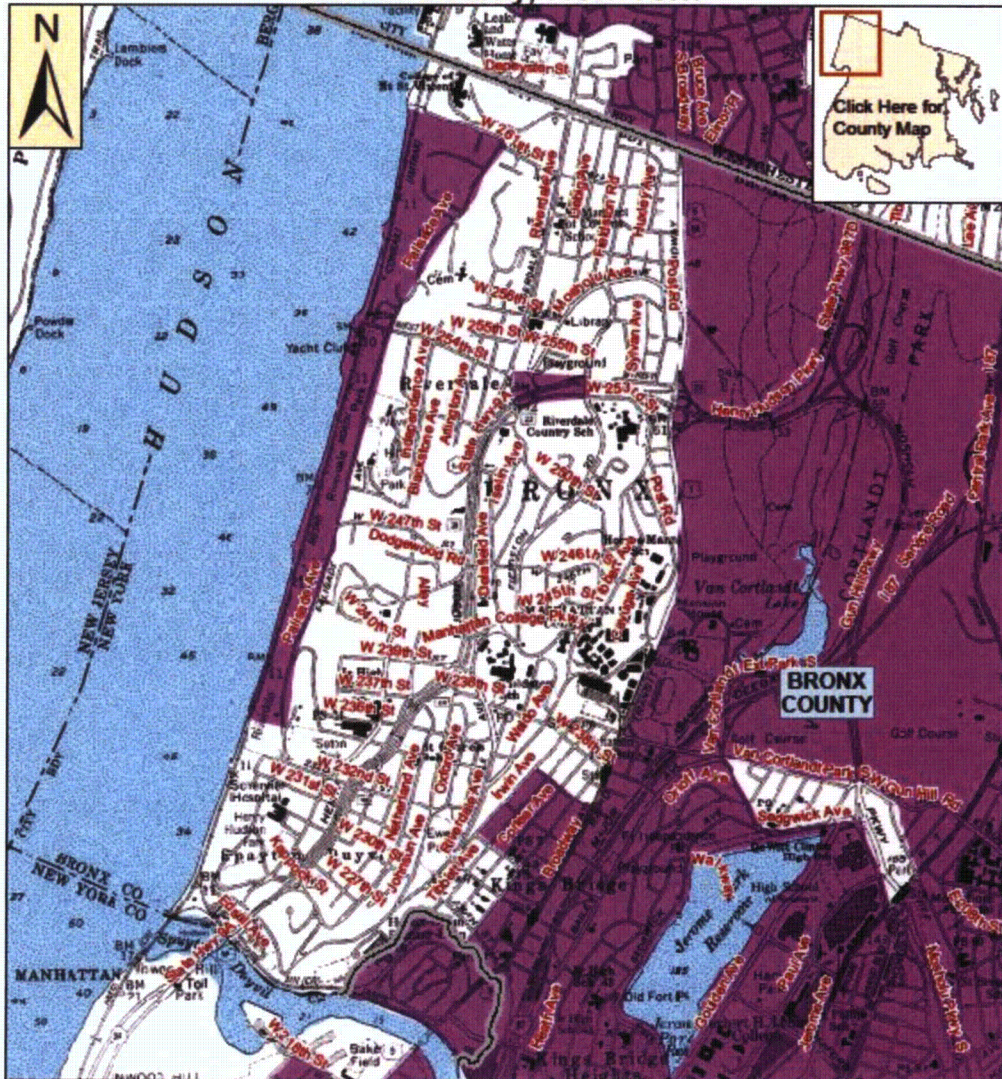
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# Potential Environmental Justice Areas in Northwest Bronx County, New York



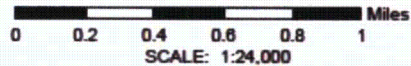
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## Legend

- Potential EJ Area
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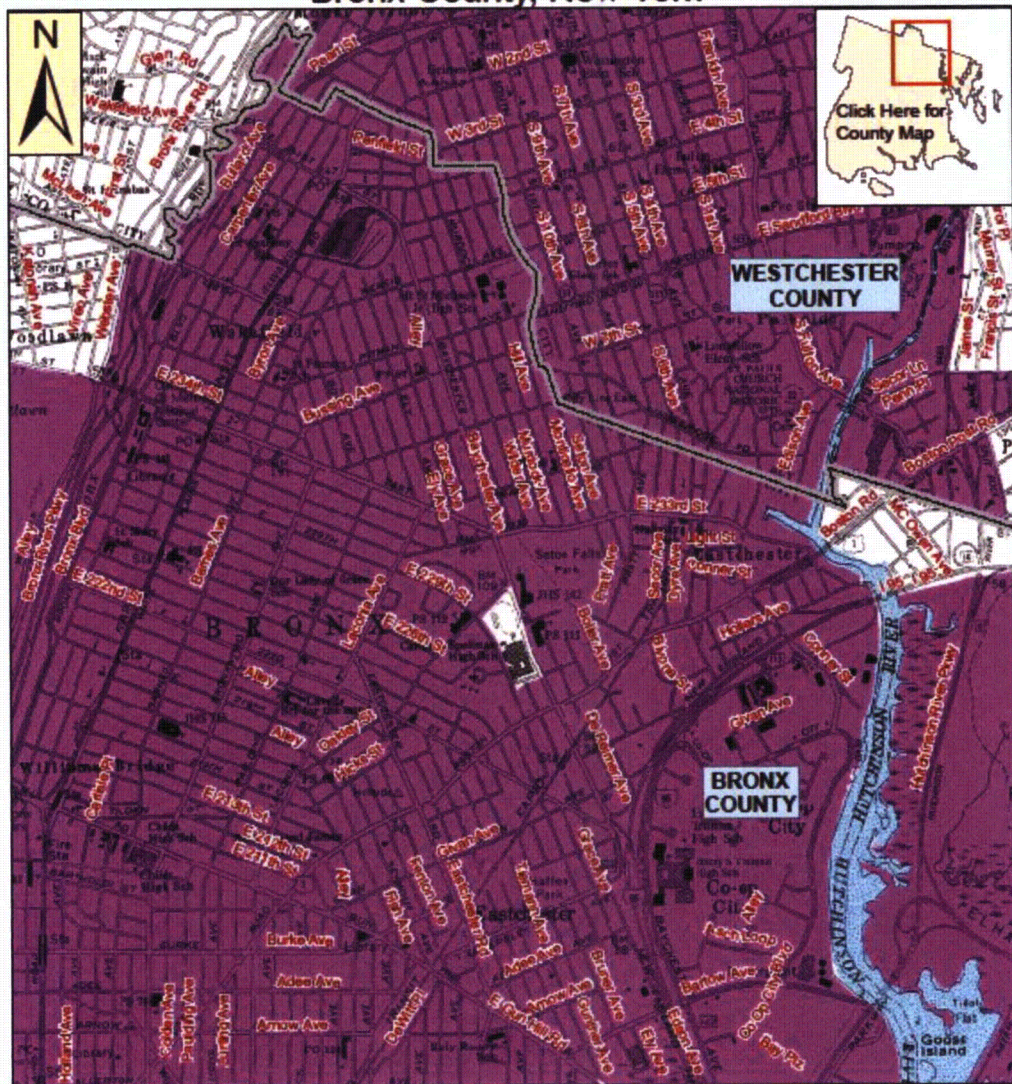


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## Potential Environmental Justice Areas in North Central Bronx County, New York



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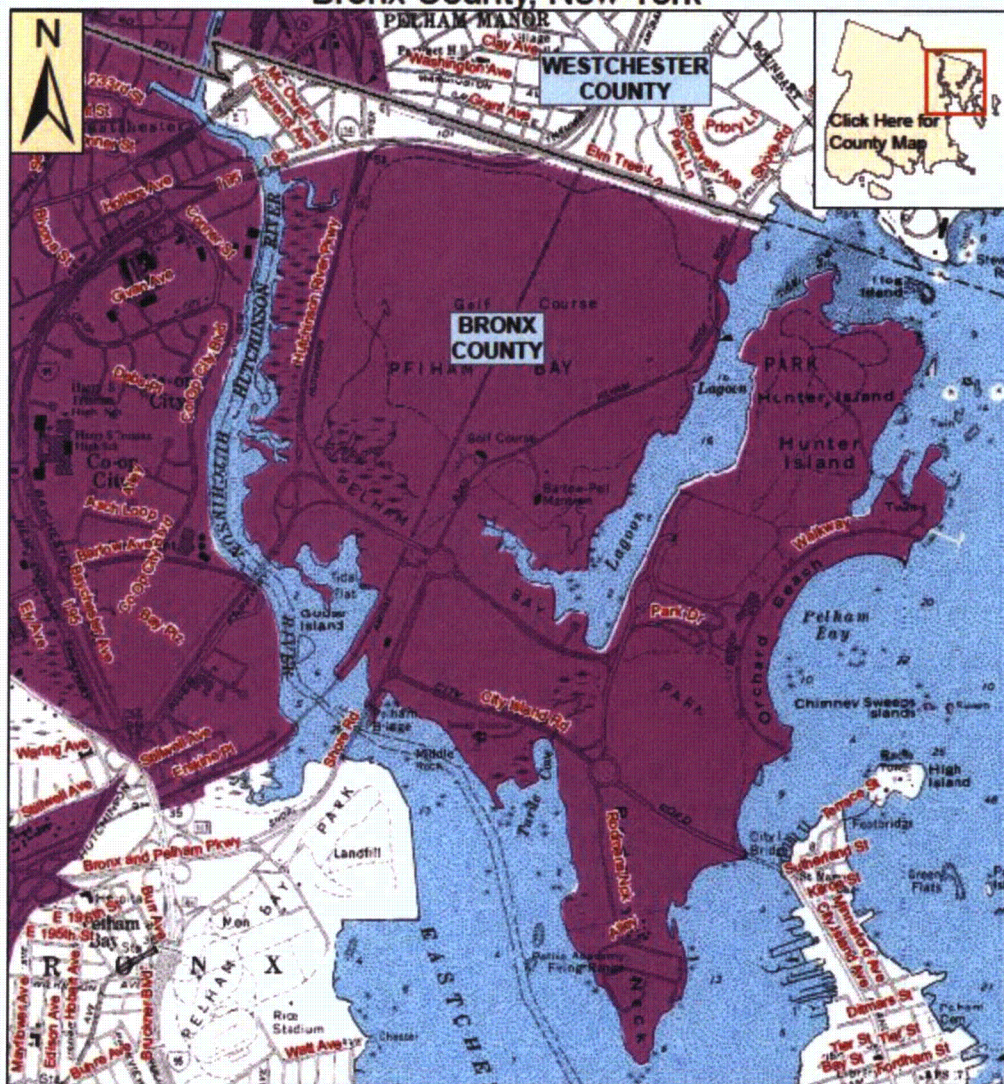
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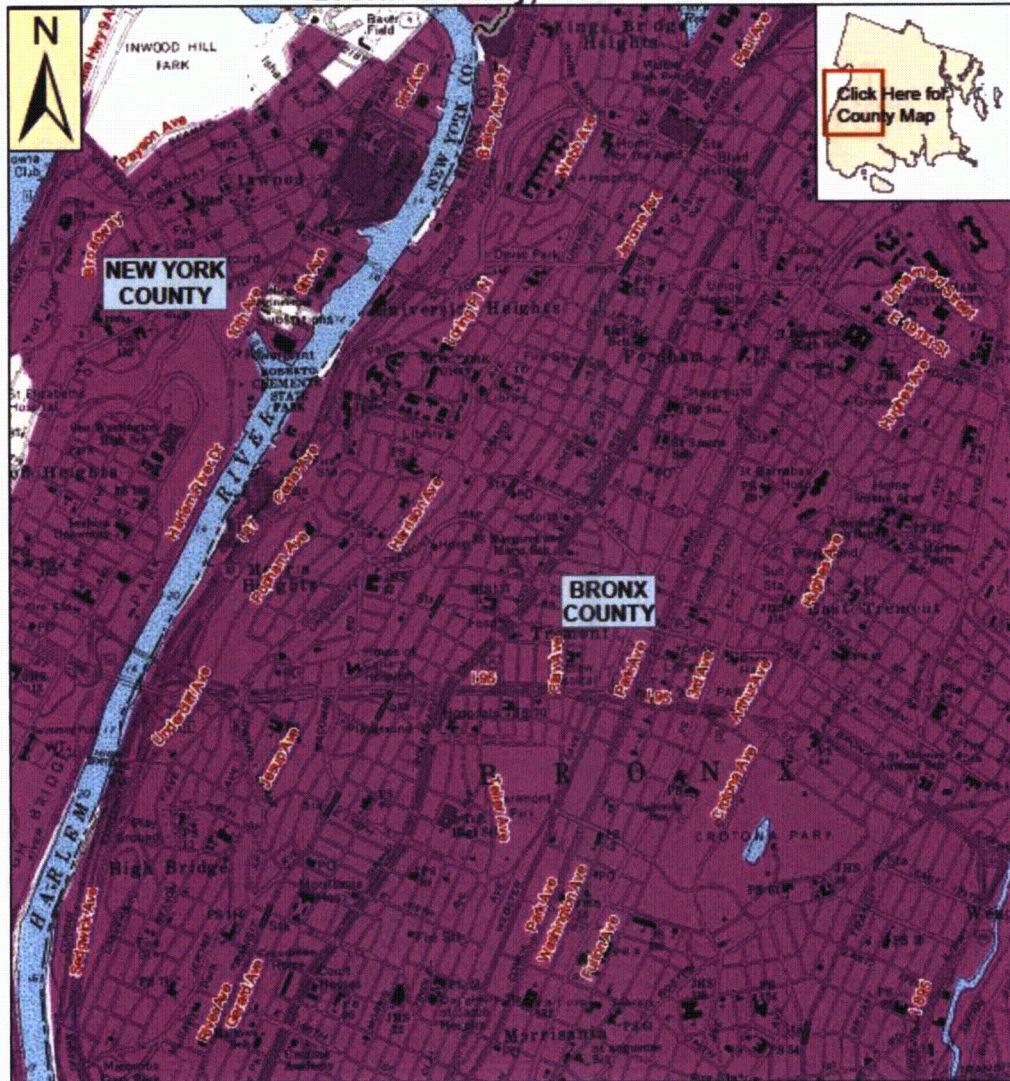


# Potential Environmental Justice Areas in Northeast Bronx County, New York





# Potential Environmental Justice Areas in East Central Bronx County, New York



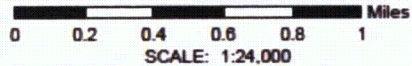
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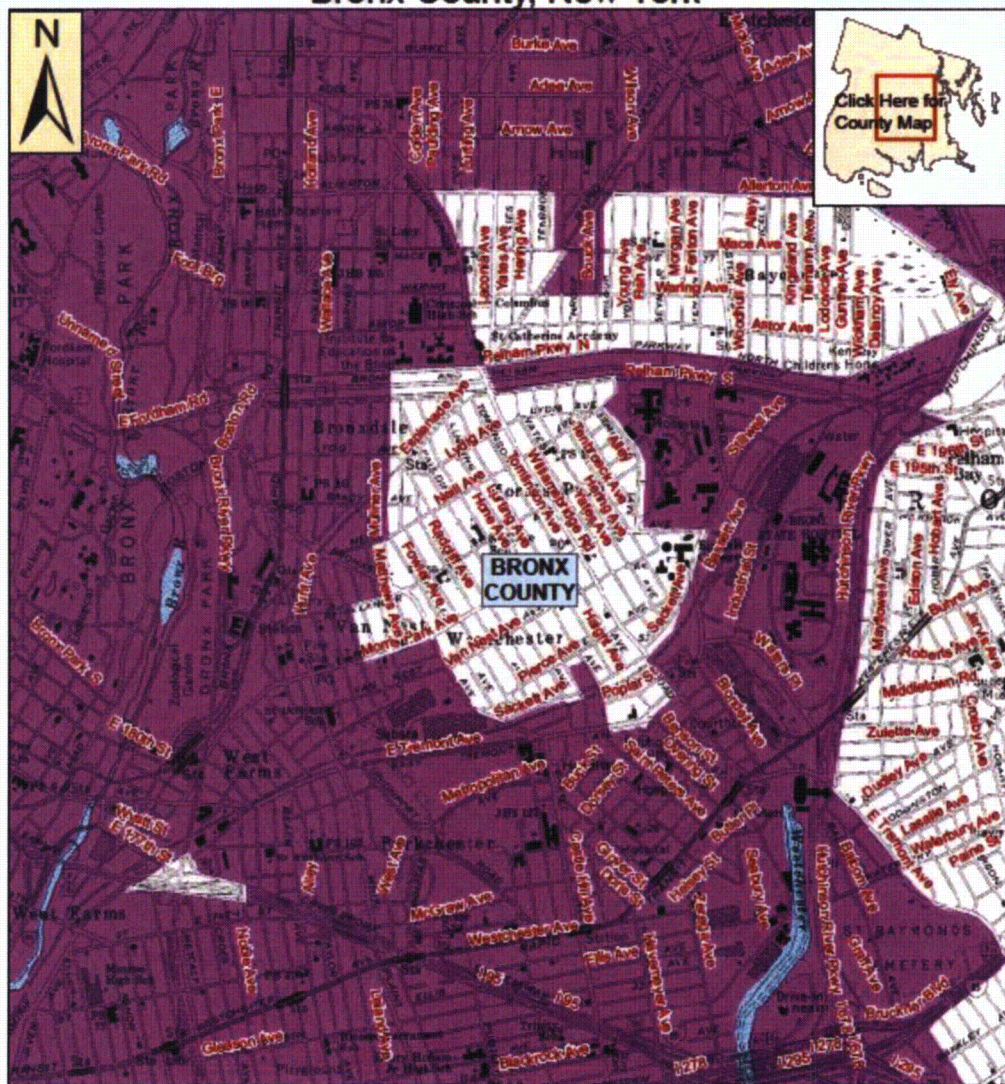


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## Potential Environmental Justice Areas in East Central Bronx County, New York



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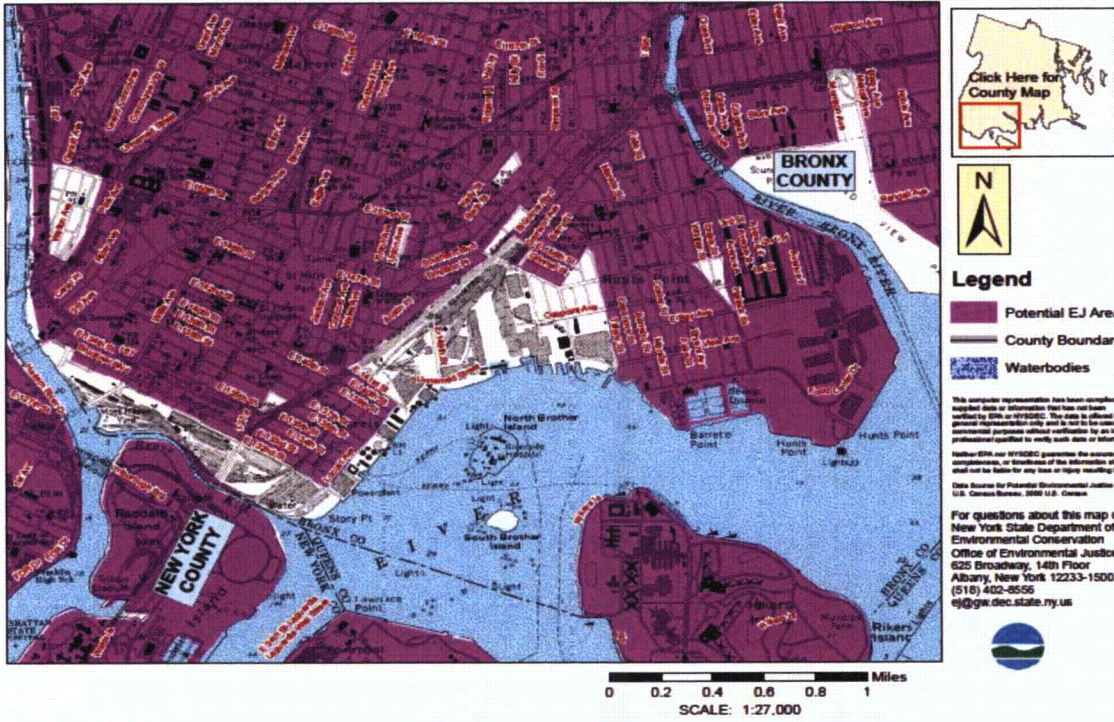
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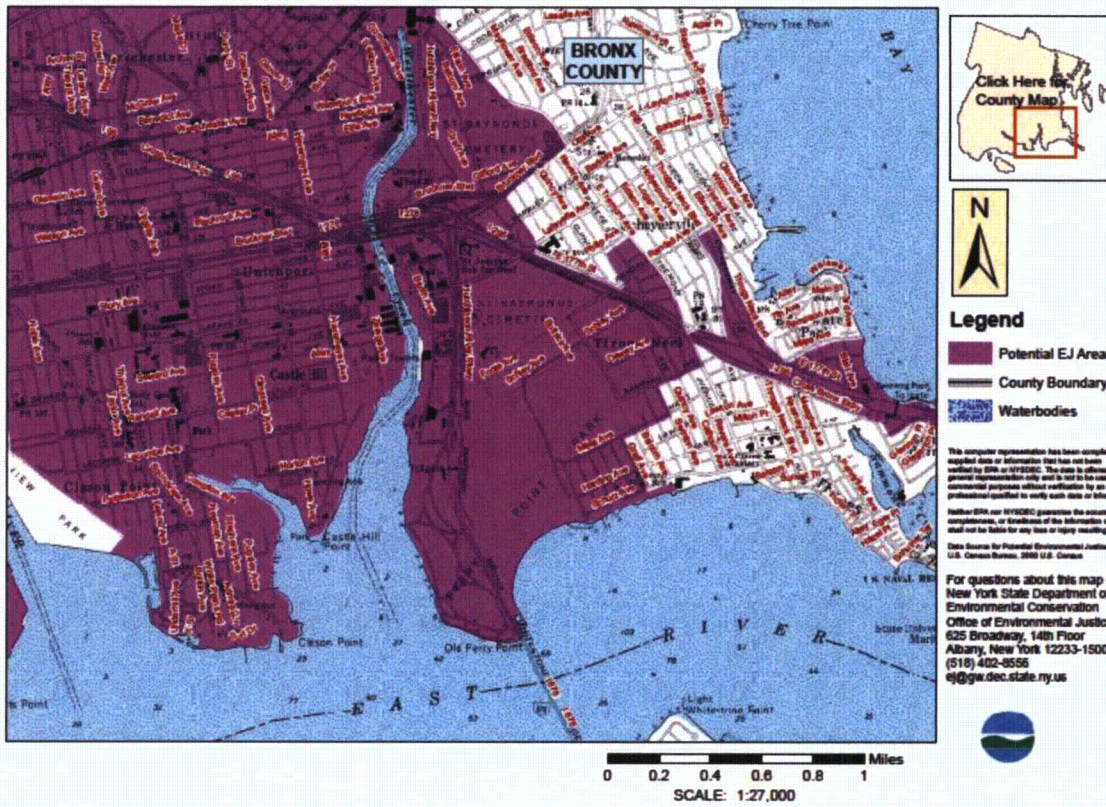


## Potential Environmental Justice Areas in Southwest Bronx County, New York





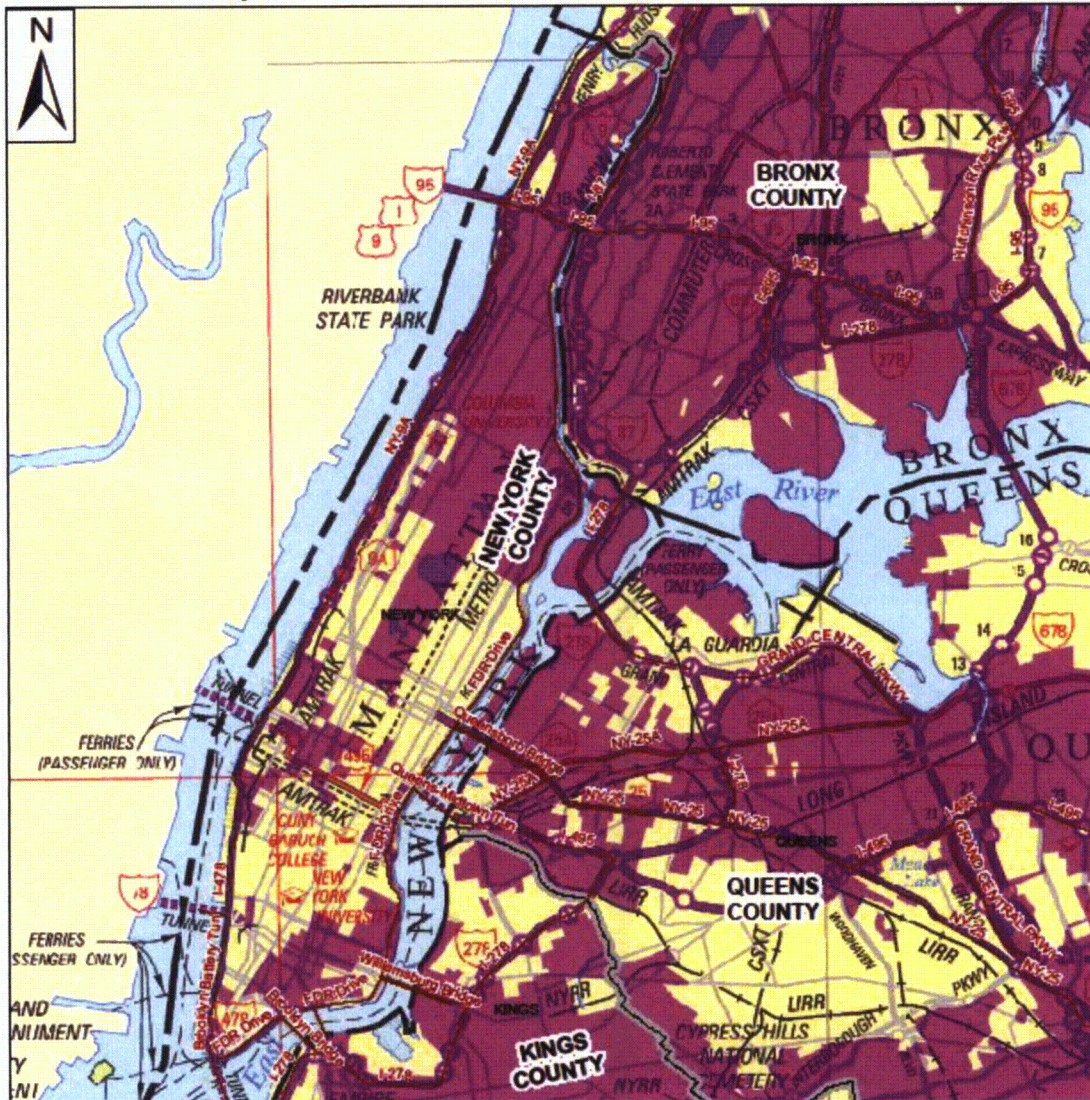
## Potential Environmental Justice Areas in Southeast Bronx County, New York





# Potential Environmental Justice Areas in New York County (Manhattan), New York

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**Legend**

- Potential EJ Area
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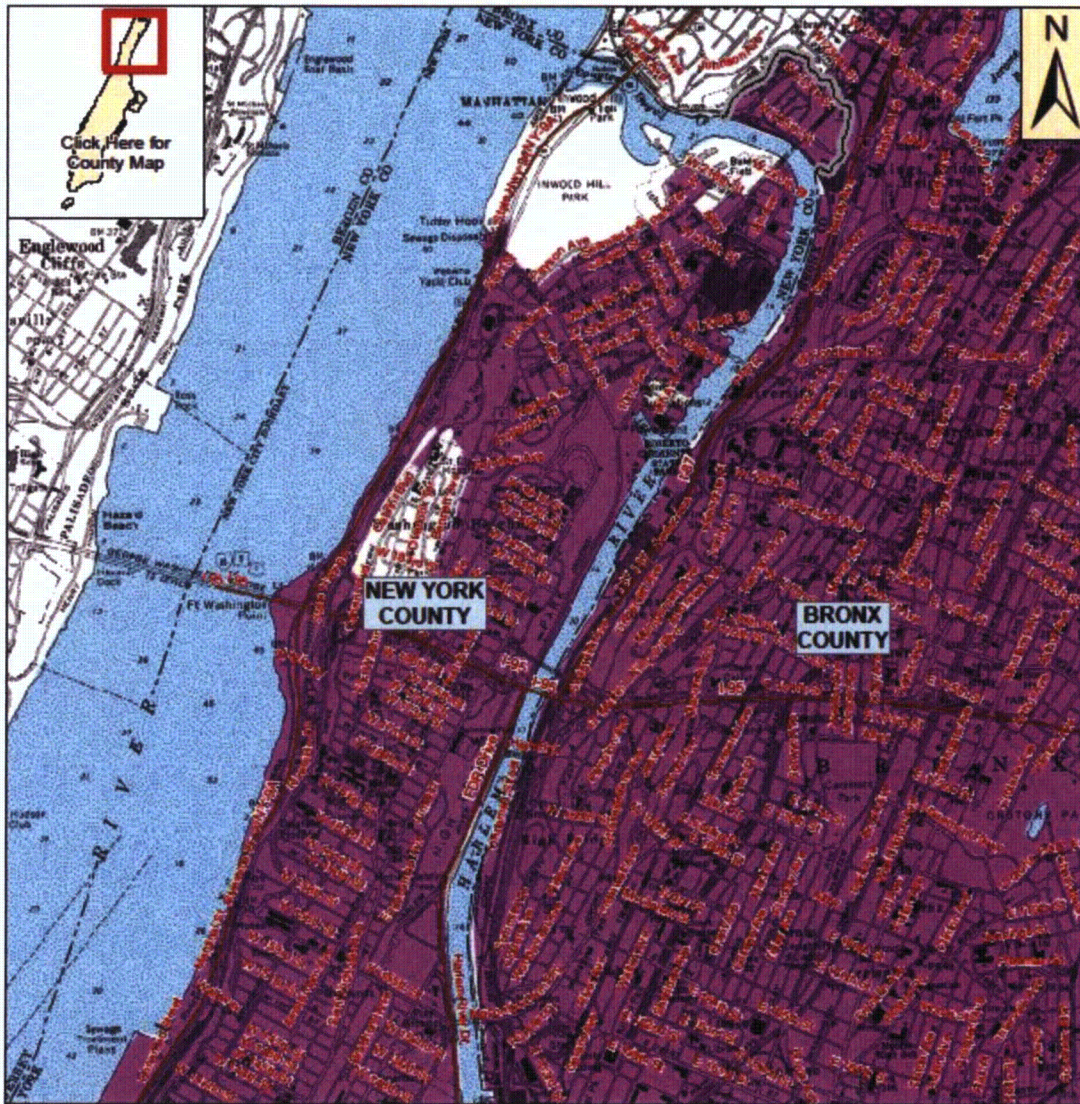
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## Potential Environmental Justice Areas in Northern New York County (Manhattan), New York



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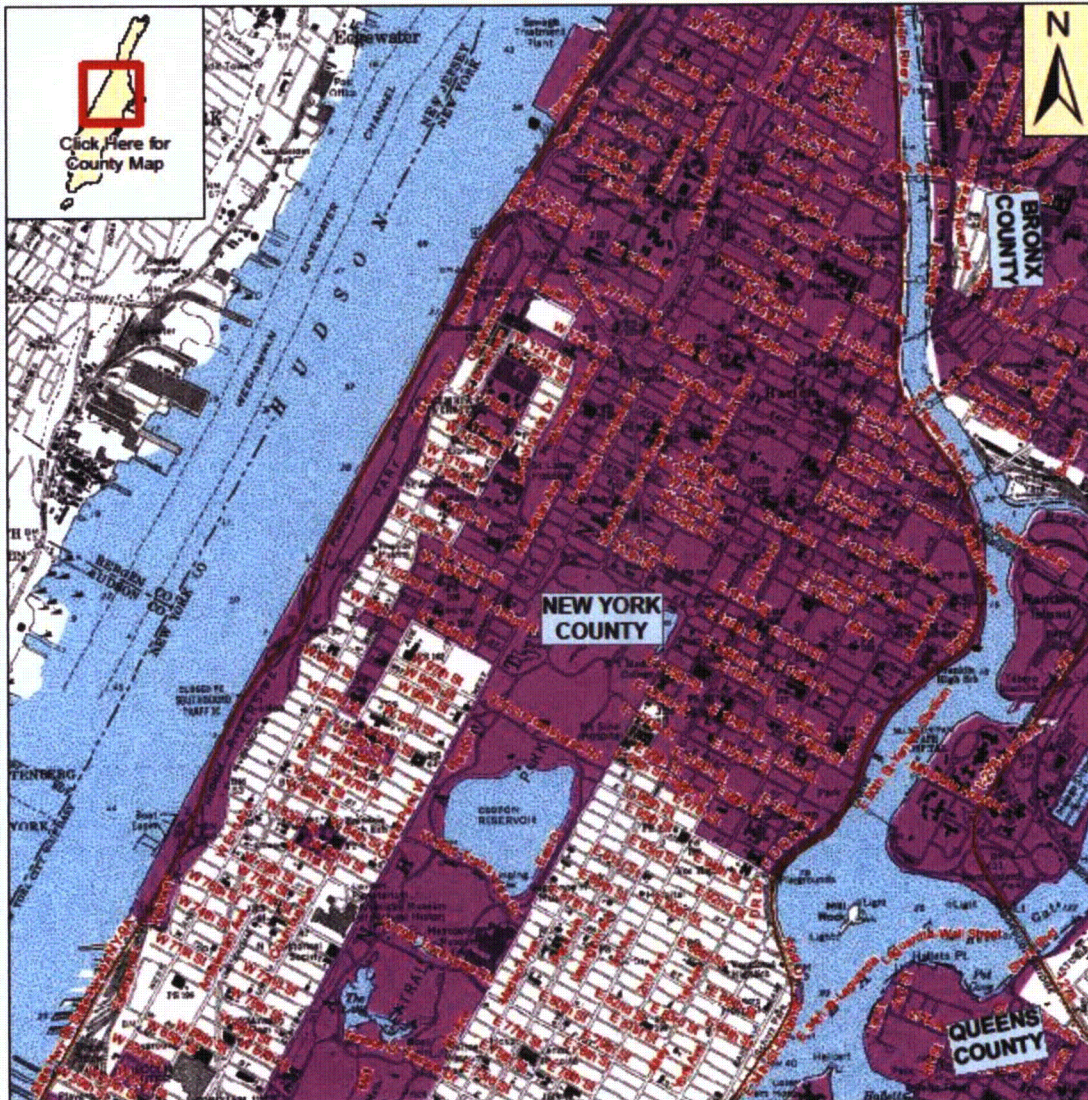
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## Potential Environmental Justice Areas in North Central New York County (Manhattan), New York






  
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- Legend**
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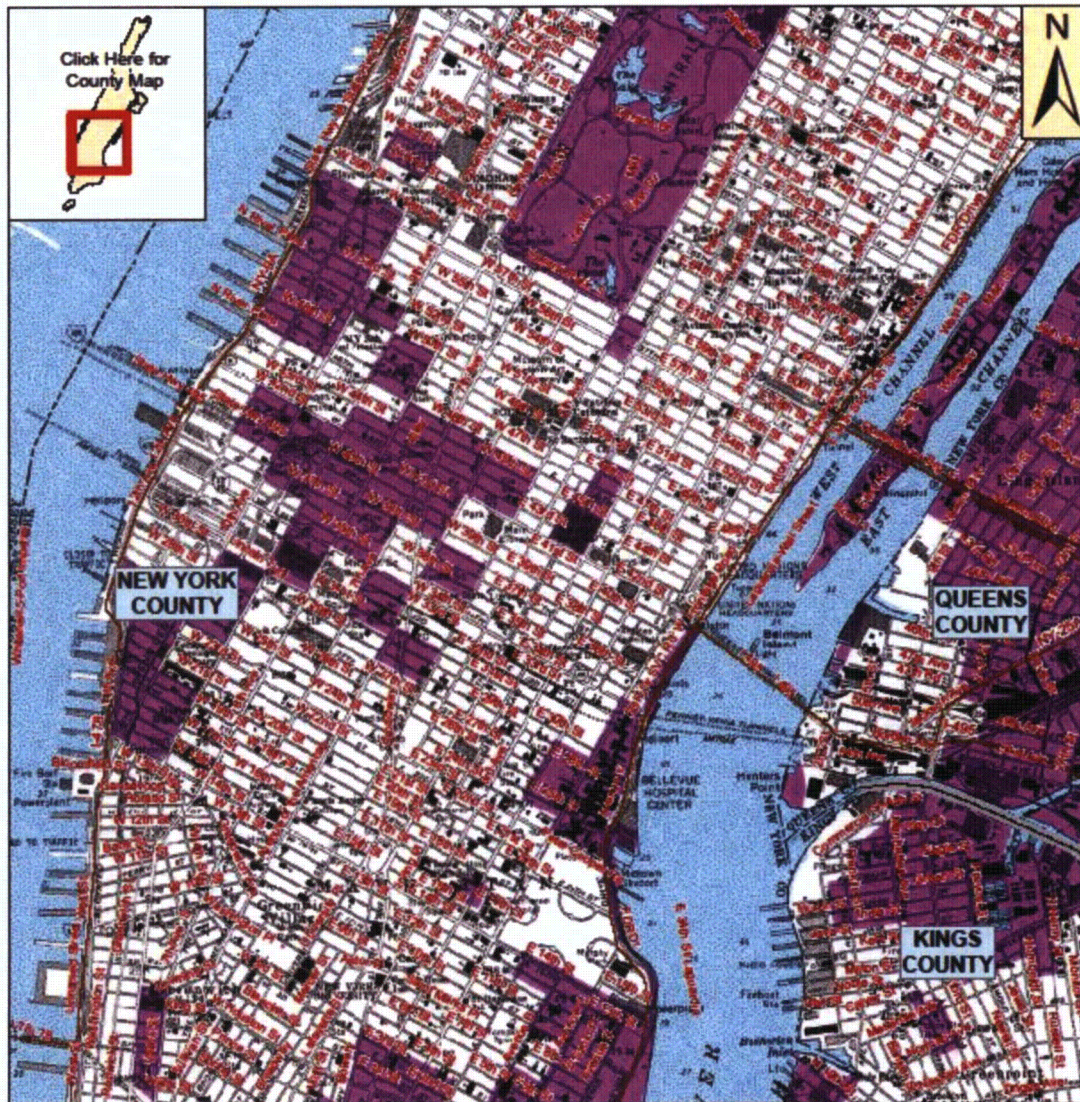
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# Potential Environmental Justice Areas in South Central New York County (Manhattan), New York






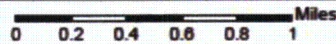
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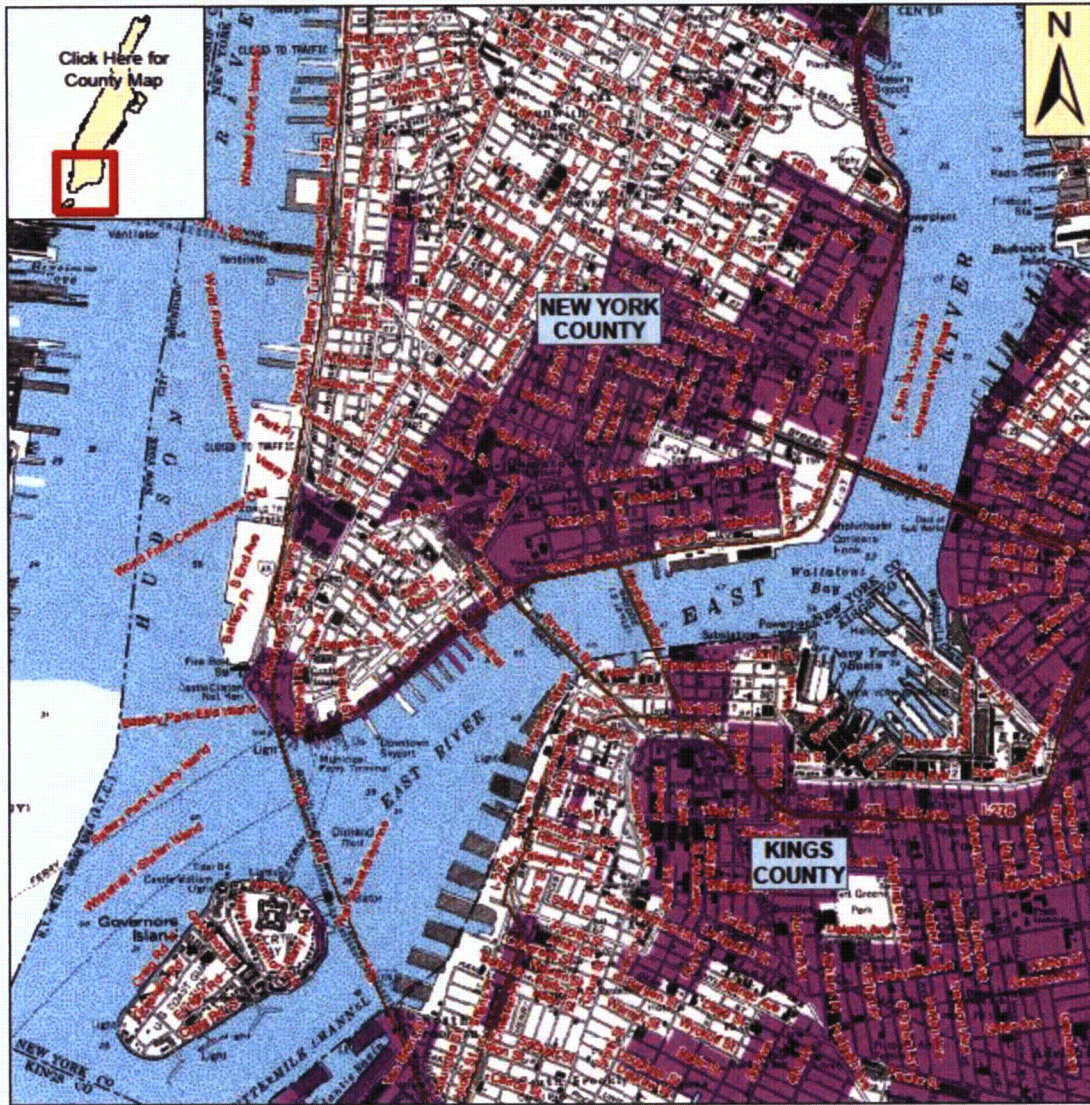
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## Potential Environmental Justice Areas in Southern New York County (Manhattan), New York



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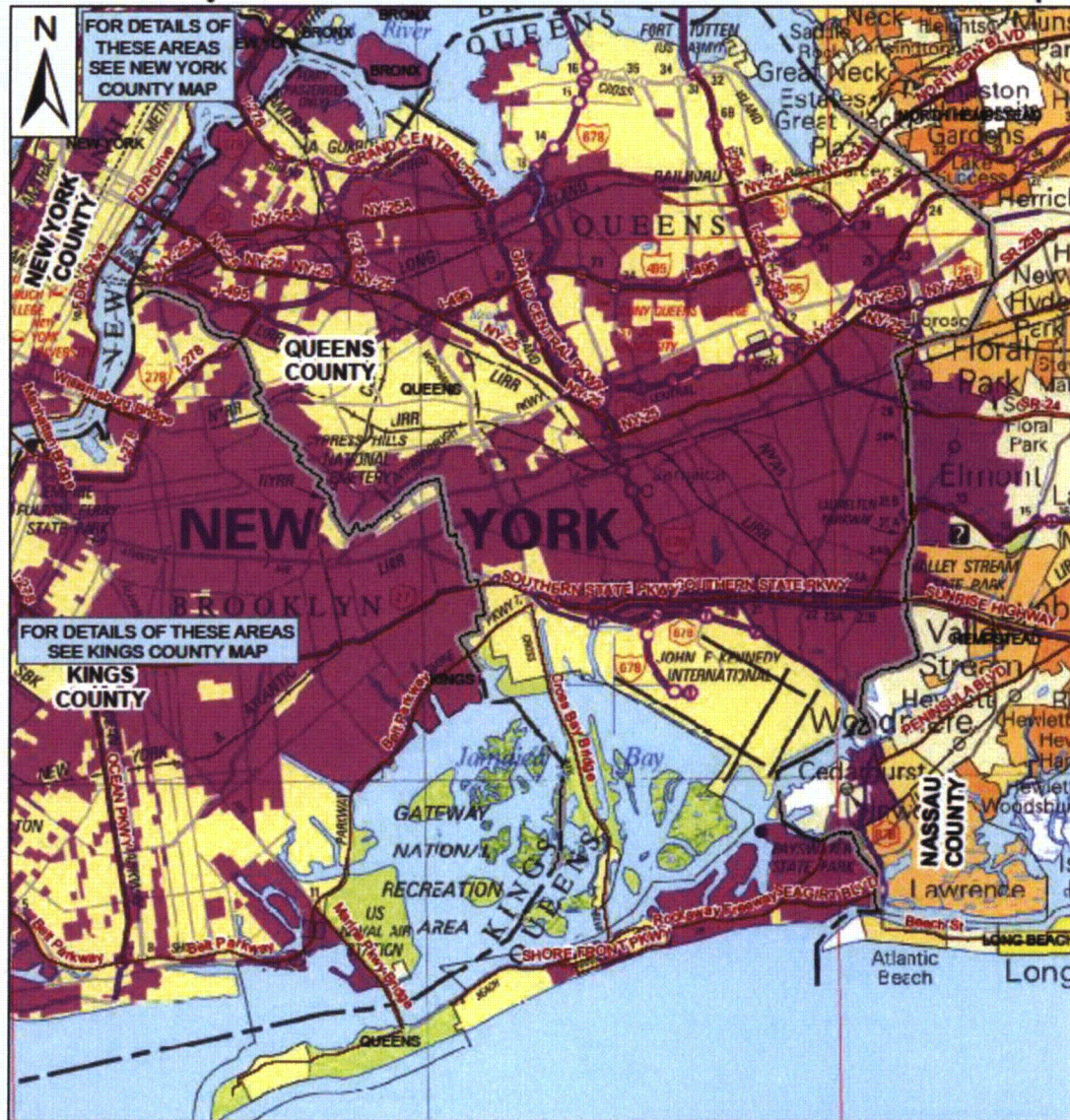
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Potential Environmental Justice Areas in Queens County, New York  
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**Legend**

- Potential EJ Area
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# Potential Environmental Justice Areas in Northwest Queens County, New York



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- County Boundary
- Waterbodies

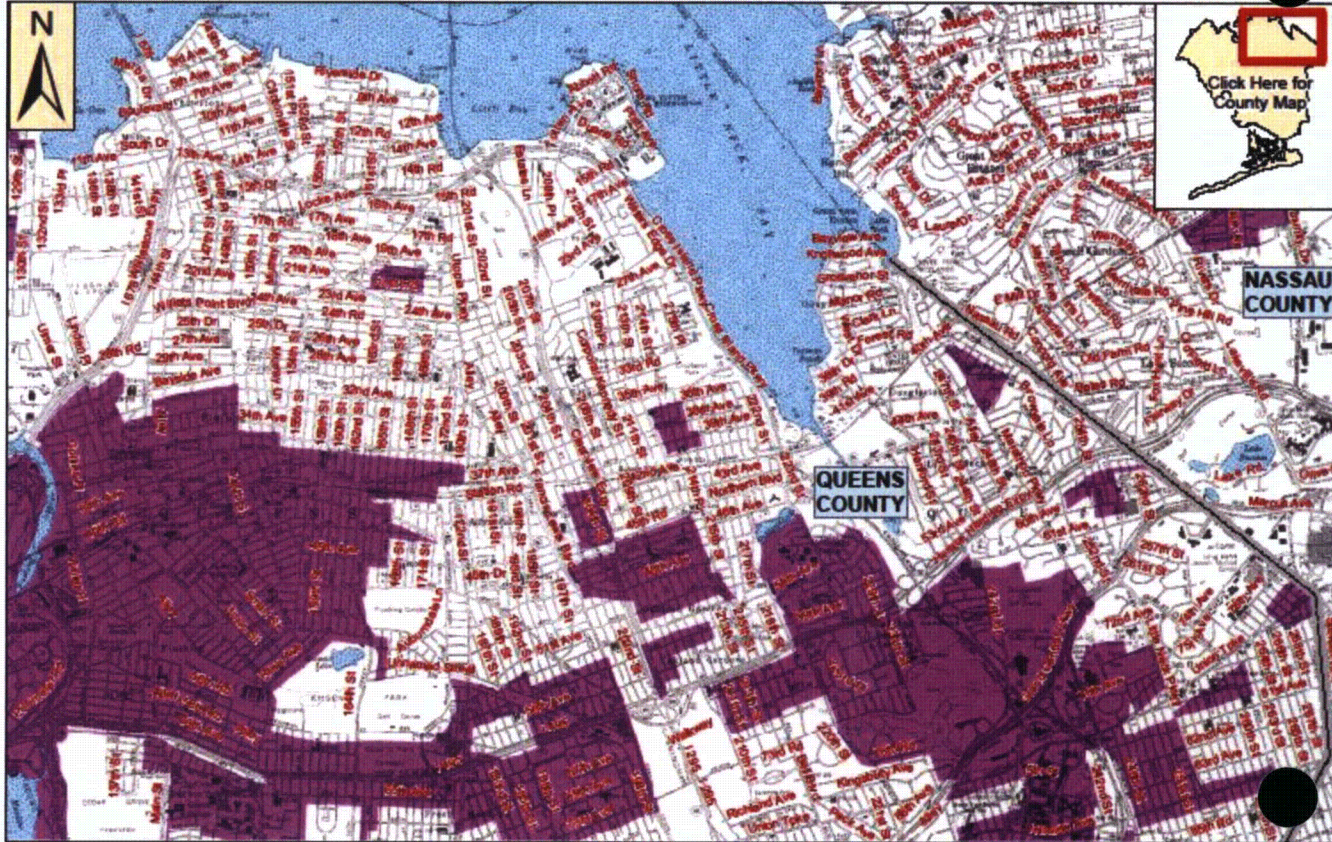
0 0.2 0.4 0.6 0.8 1 Miles  
SCALE: 1:45,000

For questions about this map contact  
New York State Department of  
Environmental Conservation  
Office of Environmental Justice  
625 Broadway, 14th Floor  
Albany, New York 12243-1500  
(518) 402-8598  
e@epw.dec.state.ny.us





# Potential Environmental Justice Areas in Northeast Queens County, New York



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Data Source for Potential Environmental Justice Areas  
U.S. Census Bureau, 2000 U.S. Census

## Legend

- Potential EJ Area
- County Boundary
- Waterbodies

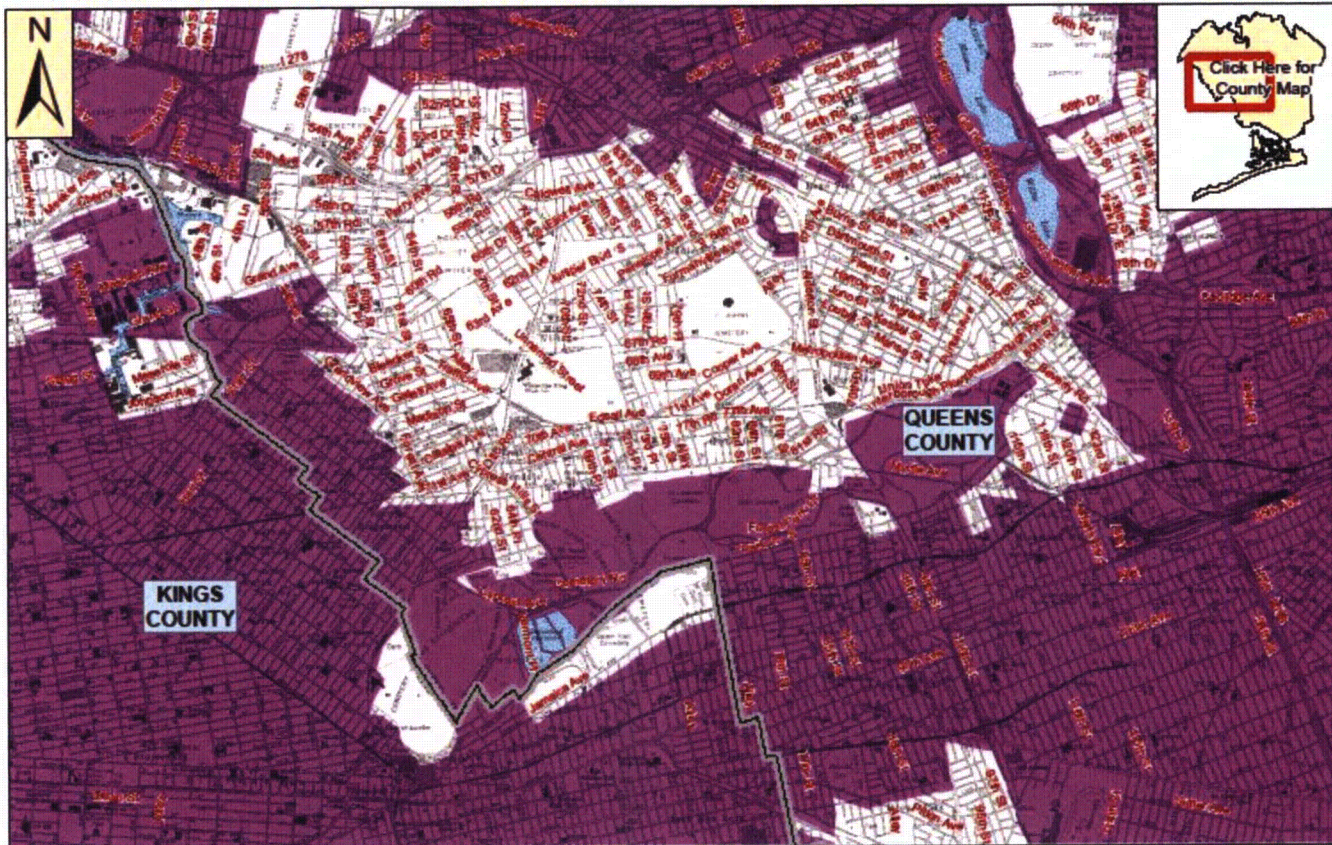
0 0.2 0.4 0.6 0.8 1 Miles  
SCALE: 1:45,000

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Office of Environmental Justice  
625 Broadway, 14th Floor  
Albany, New York 12233-1500  
(518) 402-8558  
eje@epa.state.ny.us





# Potential Environmental Justice Areas in West Central Queens County, New York



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Date Source for Potential Environmental Justice Areas  
U.S. Census Bureau, 2000 U.S. Census

## Legend

- Potential EJ Area
- County Boundary
- Waterbodies

0 0.2 0.4 0.6 0.8 1 Miles  
SCALE: 1:45,000

For questions about this map contact  
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Office of Environmental Justice  
625 Broadway, 14th Floor  
Albany, New York 12233-1500  
(518) 402-6556  
e@epa.dec.state.ny.us





# Potential Environmental Justice Areas in East Central Queens County, New York



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Data Source for Potential Environmental Justice Areas  
U.S. Census Bureau, 2000 U.S. Census

- Legend**
- Potential EJ Area
  - County Boundary
  - Waterbodies

Miles  
0 0.2 0.4 0.6 0.8 1  
SCALE: 1:45,000

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Office of Environmental Justice  
625 Broadway, 14th Floor  
Albany, New York 12233-1500  
(518) 402-6558  
e@epa.dec.state.ny.us





## Potential Environmental Justice Areas in Southern Queens County, New York






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Data Source for Potential Environmental Justice Areas:  
U.S. Census Bureau, 2000 U.S. Census

### Legend

-  Potential EJ Area
-  County Boundary
-  Waterbodies

0 0.2 0.4 0.6 0.8 1 Miles

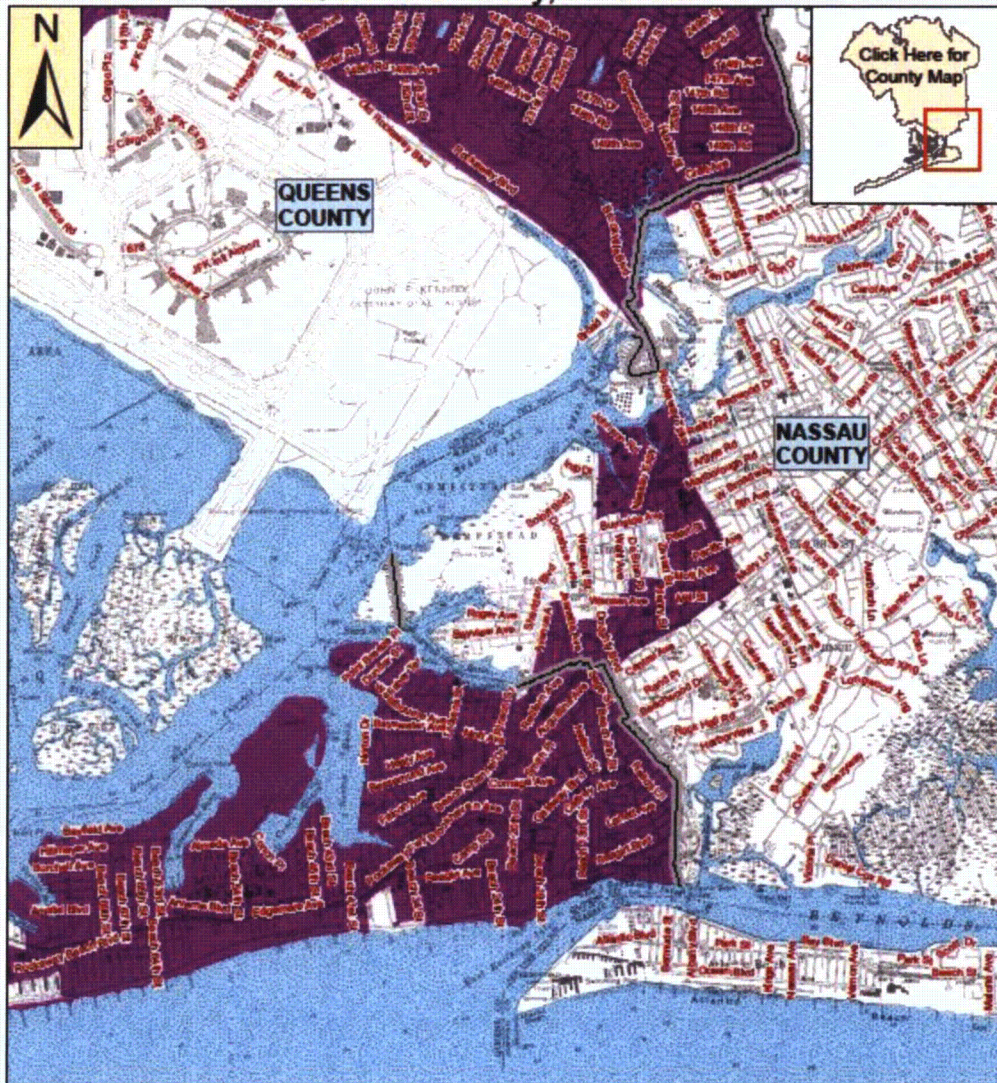
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For questions about this map contact:  
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Environmental Conservation  
Office of Environmental Justice  
625 Broadway, 14th Floor  
Albany, New York 12233-1500  
(518) 402-6556  
ej@gw.dec.state.ny.us





## Potential Environmental Justice Areas in Southern Queens County, New York






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Data Source for Potential Environmental Justice Areas:  
U.S. Census Bureau, 2000 U.S. Census

### Legend

-  Potential EJ Area
-  County Boundary
-  Waterbodies

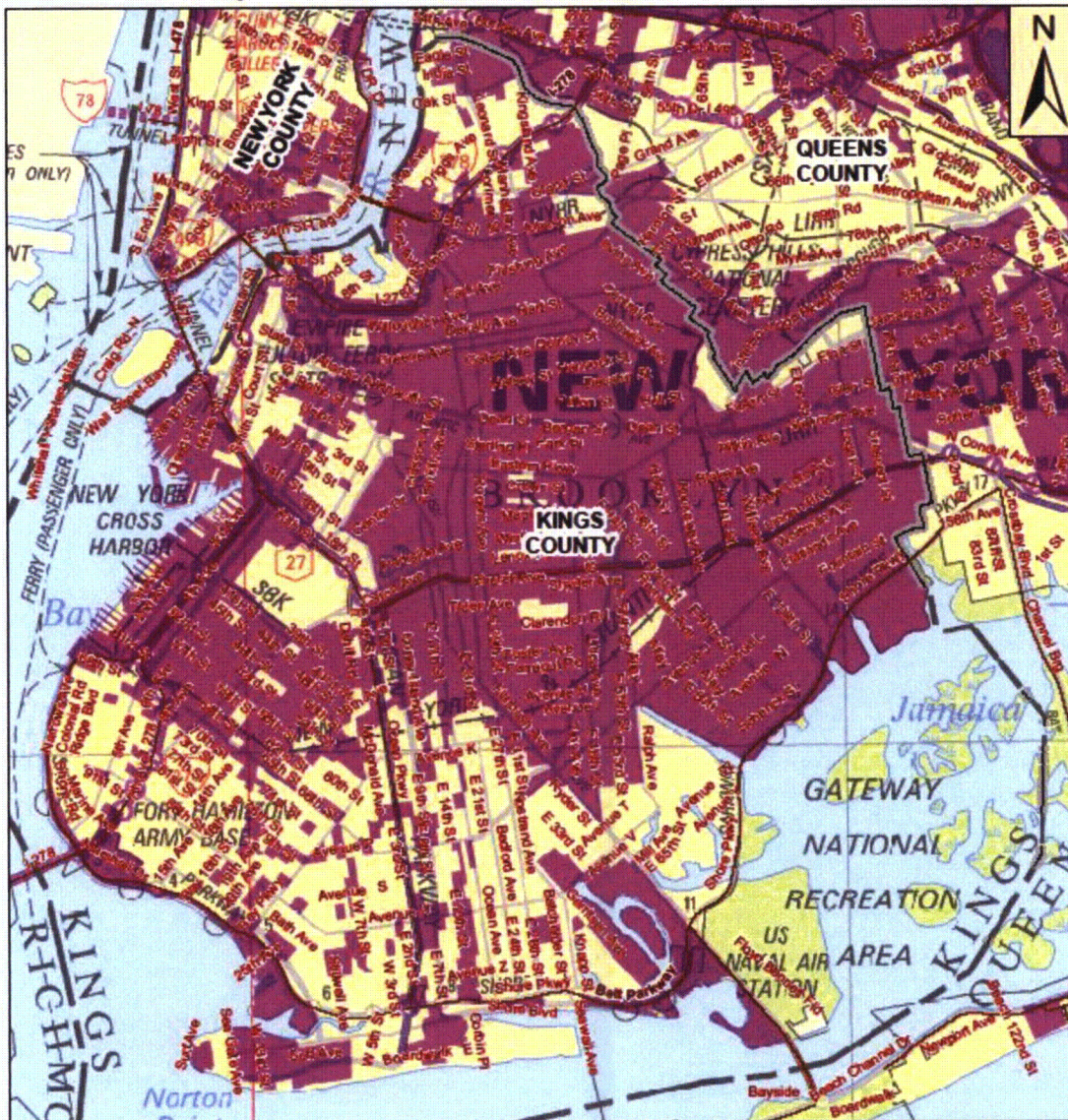
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Miles  
SCALE: 1:45,000

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Office of Environmental Justice  
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Potential Environmental Justice Areas in Kings County, New York  
 Click on any Potential EJ Area outlined in blue for a detailed map



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Data Source for Potential Environmental Justice Areas  
 U.S. Census Bureau, 2000 U.S. Census

**Legend**

- Potential EJ Area
- County Boundary

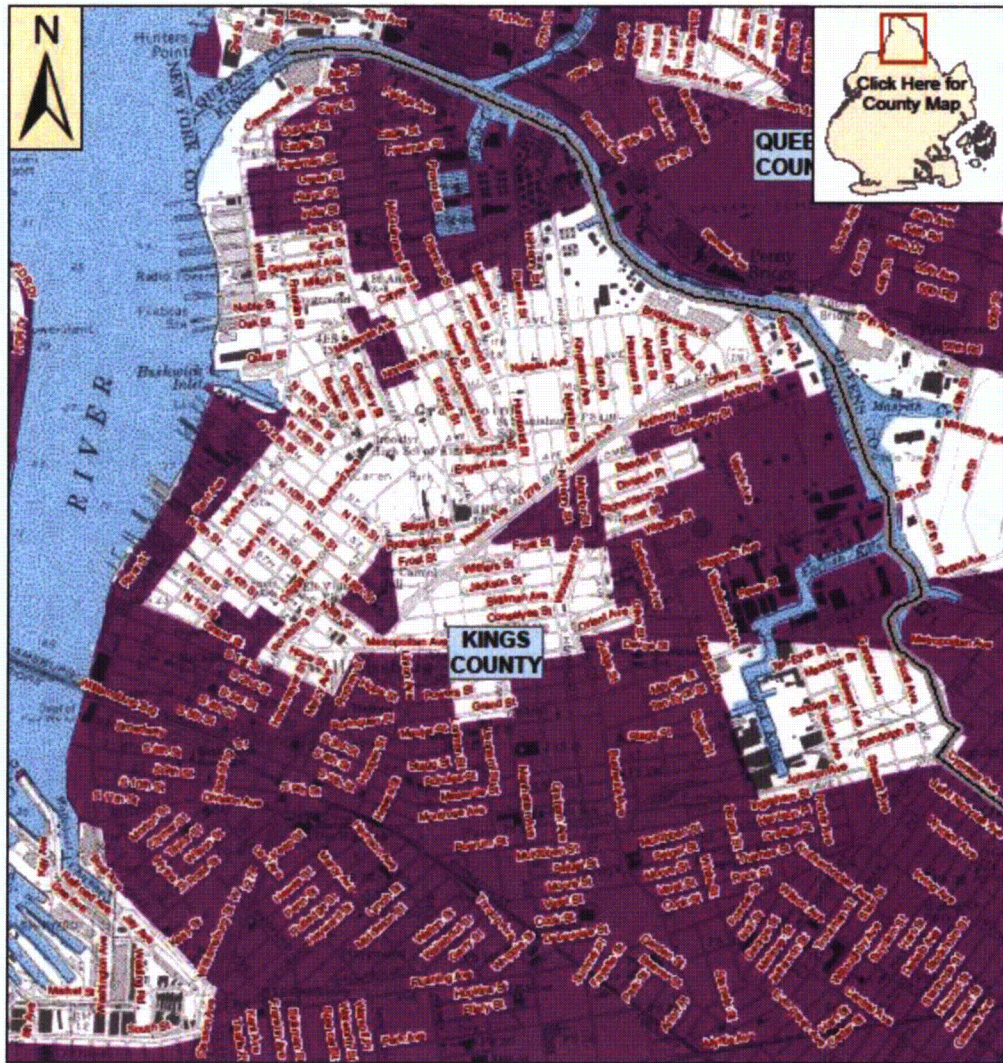
Miles  
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 SCALE: 1:90,000

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 Office of Environmental Justice  
 625 Broadway, 14th Floor  
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 ejs@dec.state.ny.us





# Potential Environmental Justice Areas in Northern Brooklyn, Kings County, New York






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Data Source for Potential Environmental Justice Areas:  
U.S. Census Bureau, 2000 U.S. Census

## Legend

-  Potential EJ Area
-  County Boundary
-  Waterbodies

0 0.2 0.4 0.6 0.8 1 Miles

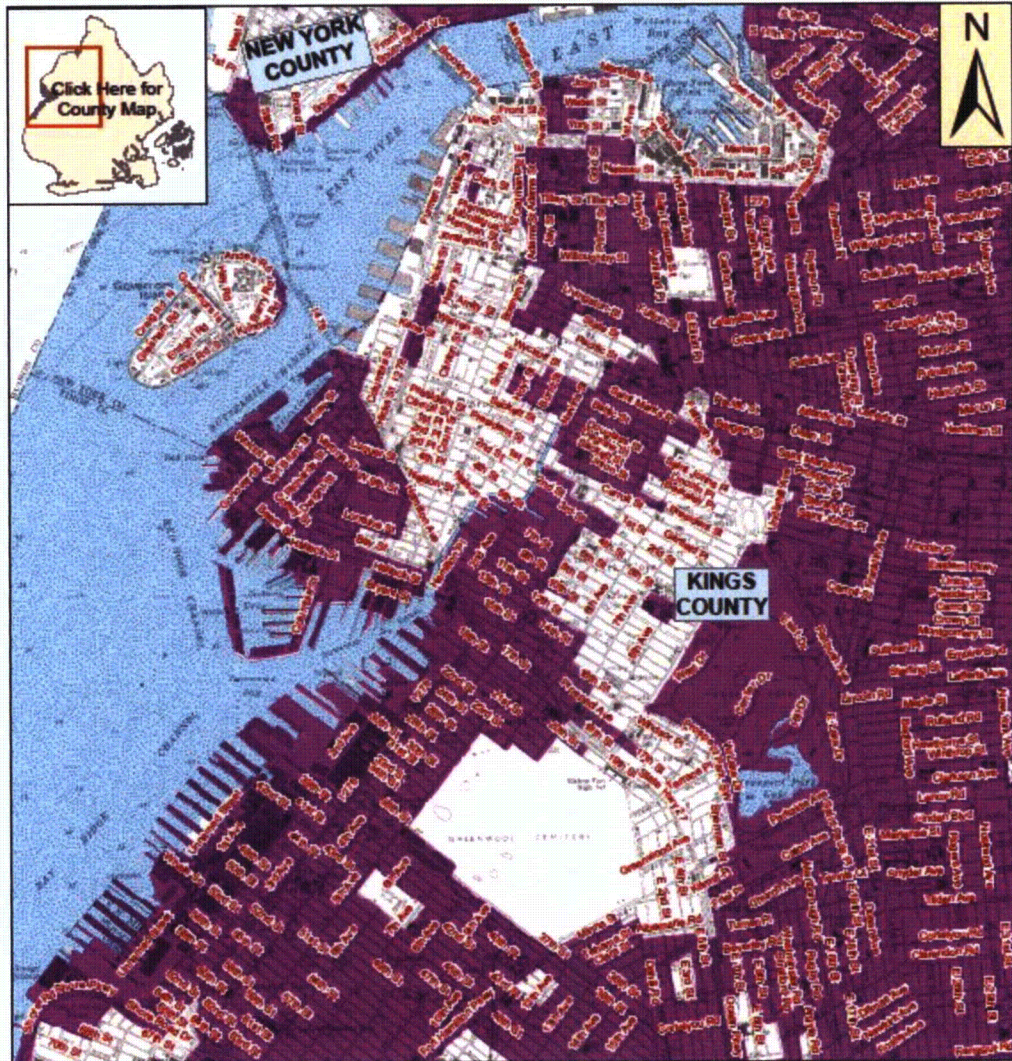
SCALE: 1:24,000

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Office of Environmental Justice  
625 Broadway, 14th Floor  
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(518) 402-6556  
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# Potential Environmental Justice Areas in Northwest Brooklyn, Kings County, New York



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Data Source for Potential Environmental Justice Areas:  
U.S. Census Bureau, 2000 U.S. Census

## Legend

- Potential EJ Area
- County Boundary
- Waterbodies

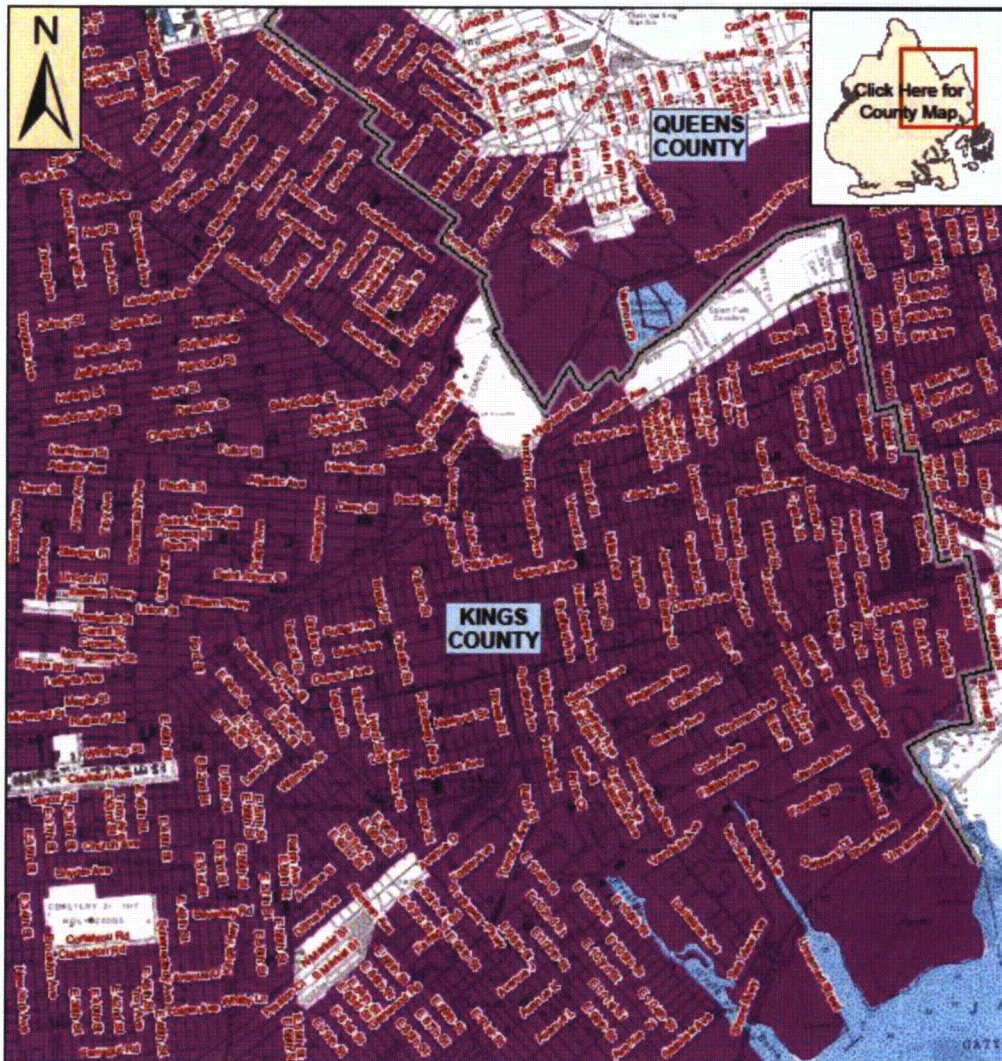
0 0.2 0.4 0.6 0.8 1 Miles  
SCALE: 1:40,000

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(518) 402-6556  
ej@gw.dec.state.ny.us





# Potential Environmental Justice Areas in Northeast Brooklyn, Kings County, New York






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Data Source for Potential Environmental Justice Areas:  
U.S. Census Bureau, 2000 U.S. Census

## Legend

-  Potential EJ Area
-  County Boundary
-  Waterbodies

0 0.2 0.4 0.6 0.8 1 Miles  
SCALE: 1:40,000

For questions about this map contact:  
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# Potential Environmental Justice Areas in Southwest Brooklyn, Kings County, New York






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Data Source for Potential Environmental Justice Areas:  
U.S. Census Bureau, 2000 U.S. Census

## Legend

-  Potential E.J. Area
-  County Boundary
-  Waterbodies

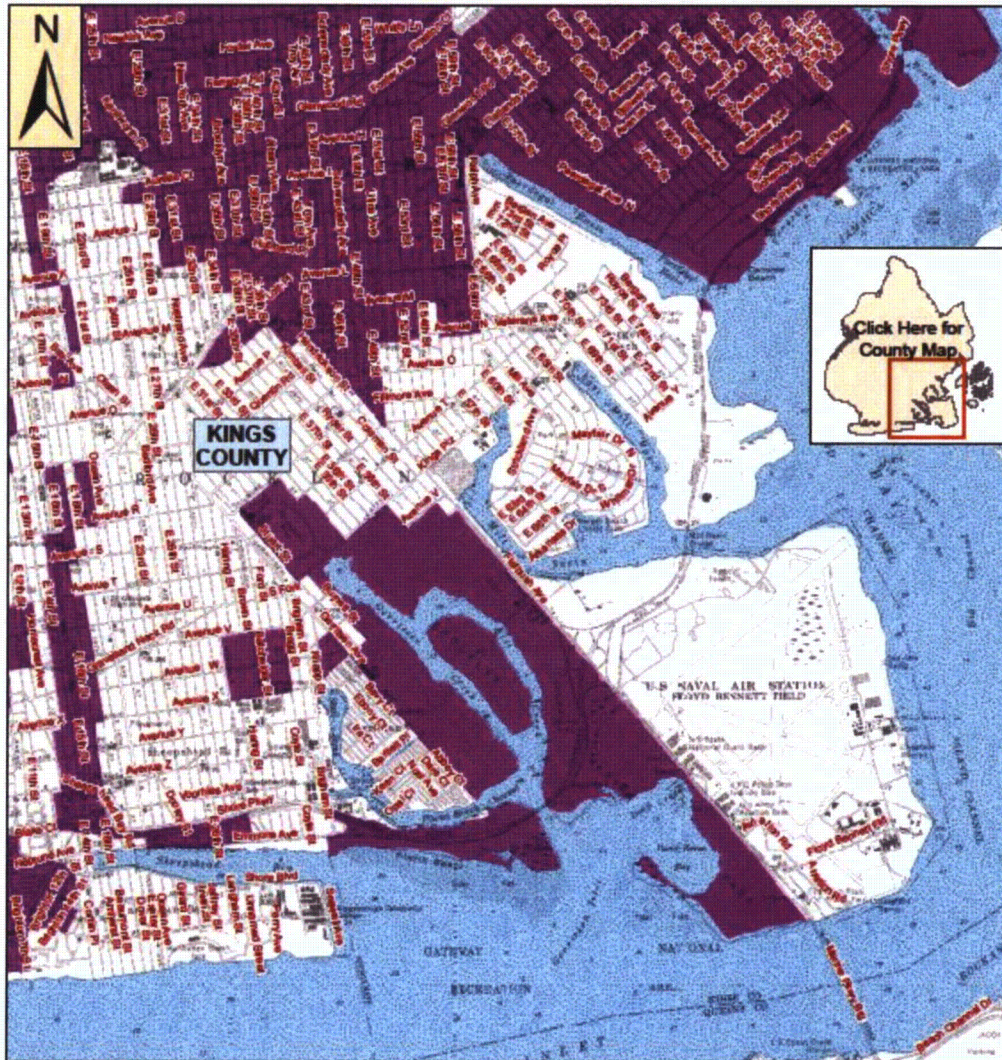
0 0.2 0.4 0.6 0.8 1 Miles  
SCALE: 1:40,000

For questions about this map contact:  
New York State Department of  
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Albany, New York 12233-1500  
(518) 402-6556  
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# Potential Environmental Justice Areas in Southeast Brooklyn, Kings County, New York






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Data Source for Potential Environmental Justice Areas:  
U.S. Census Bureau, 2000 U.S. Census

## Legend

-  Potential EJ Area
-  County Boundary
-  Waterbodies

0 0.2 0.4 0.6 0.8 1  
Miles  
SCALE: 1:40,000

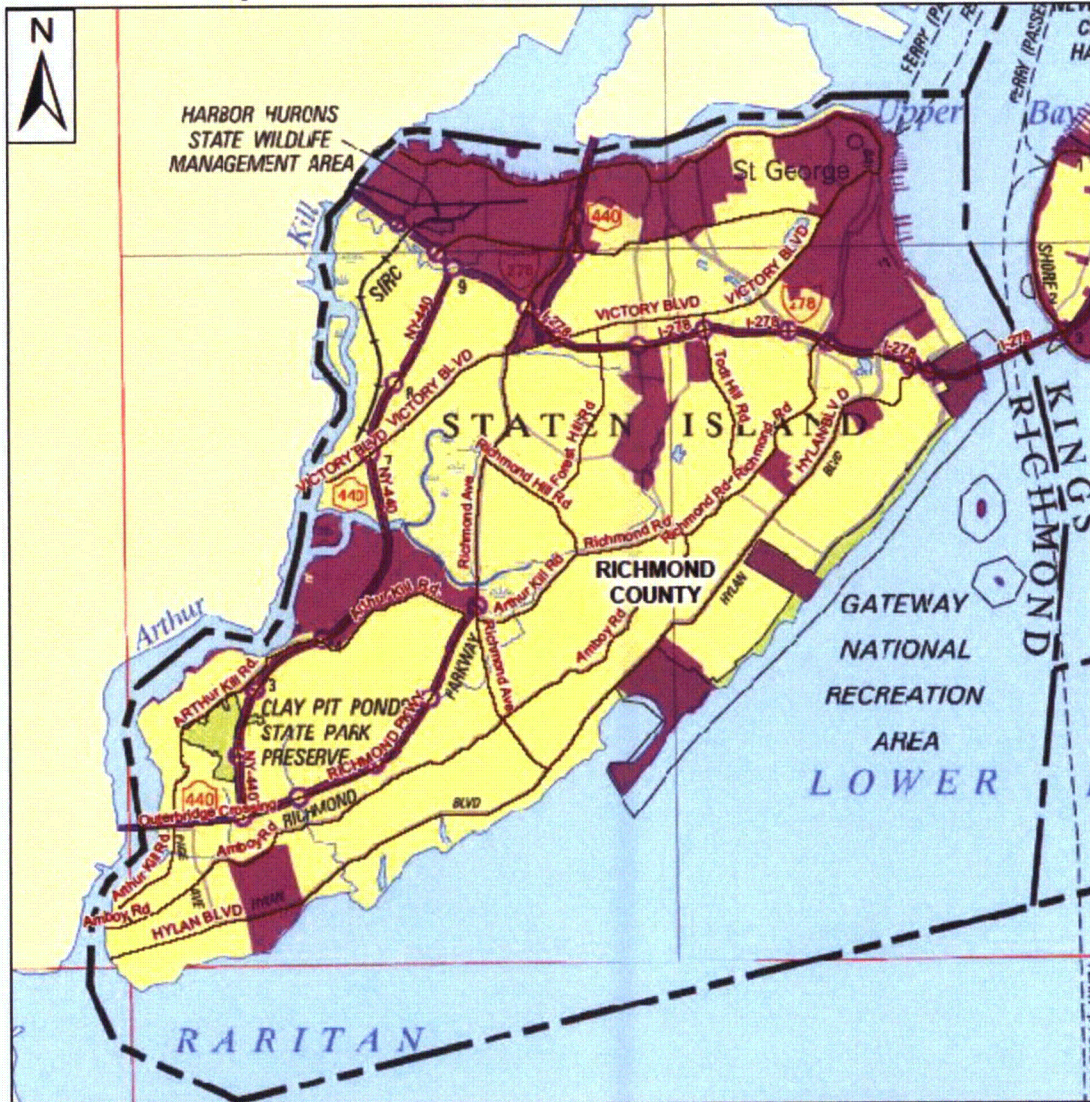
For questions about this map contact:  
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Albany, New York 12233-1500  
(518) 402-6556  
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# Potential Environmental Justice Areas in Richmond County (Staten Island), New York

Click on any Potential EJ Area outlined in blue for a detailed map



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Data Source for Potential Environmental Justice Areas: U.S. Census Bureau, 2000 U.S. Census

### Legend

- Potential EJ Area
- County Boundary

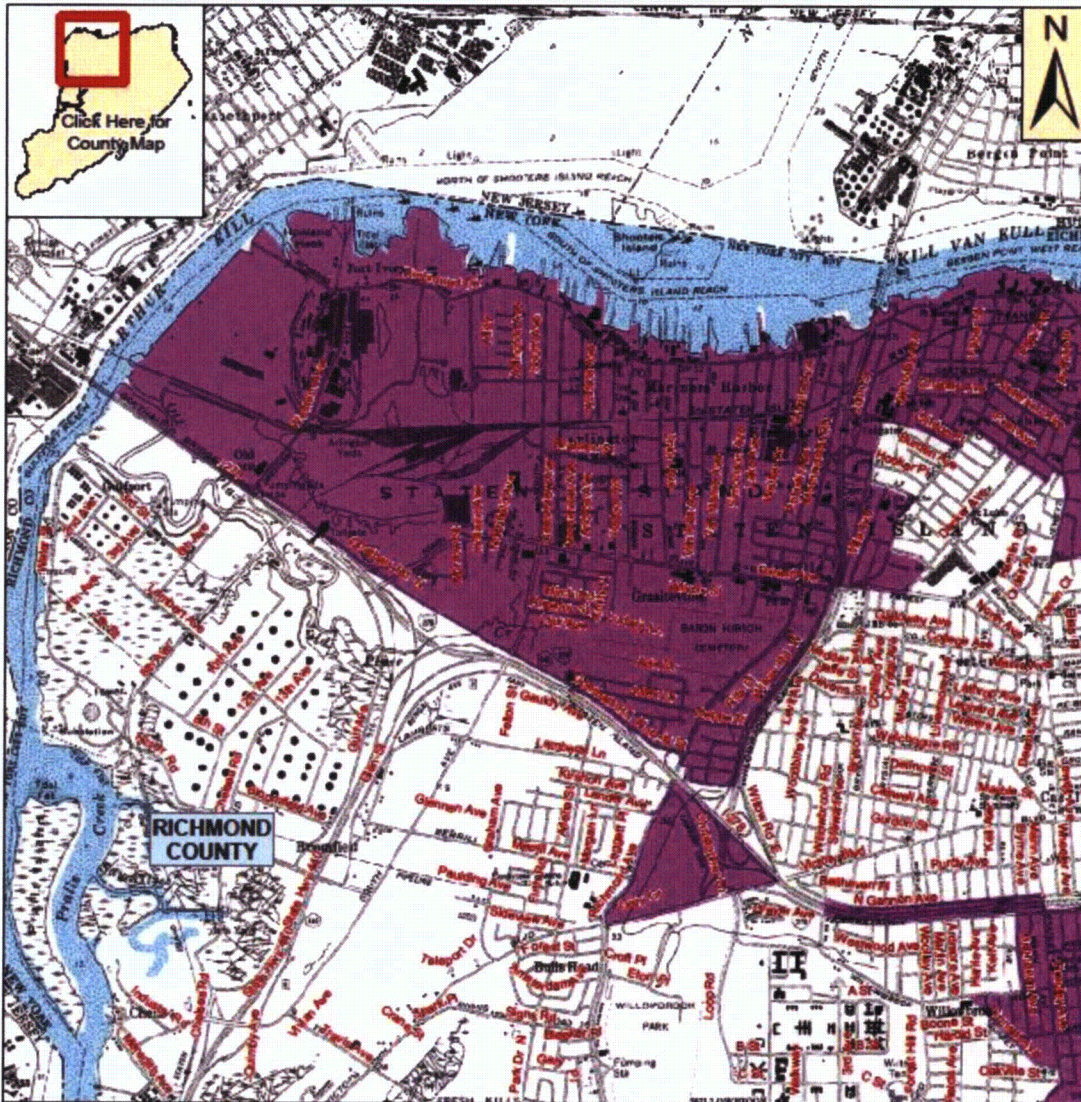
0 0.5 1 1.5 2 Miles  
SCALE: 1:100,000

For questions about this map contact  
New York State Department of  
Environmental Conservation  
Office of Environmental Justice  
625 Broadway, 14th Floor  
Albany, New York 12233-1900  
(518) 402-6558  
eoj@dec.state.ny.us





## Potential Environmental Justice Areas in Northwest Richmond County (Staten Island), New York



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Data Source for Potential Environmental Justice Areas: U.S. Census Bureau, 2000 U.S. Census

### Legend

- Potential EJ Area
- Waterways

0 0.2 0.4 0.6 0.8 1 Miles

SCALE: 1:30,000

For questions about this map contact  
New York State Department of  
Environmental Conservation  
Office of Environmental Justice  
625 Broadway, 14th Floor  
Albany, New York 12233-1500  
(518) 402-8556  
e@epw.dic.state.ny.us





## Potential Environmental Justice Areas in Northeast Richmond County (Staten Island), New York



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Data Source for Potential Environmental Justice Areas  
U.S. Census Bureau, 2000 U.S. Census

### Legend

- Potential EJ Area
- Waterways

0 0.2 0.4 0.6 0.8 1 Miles

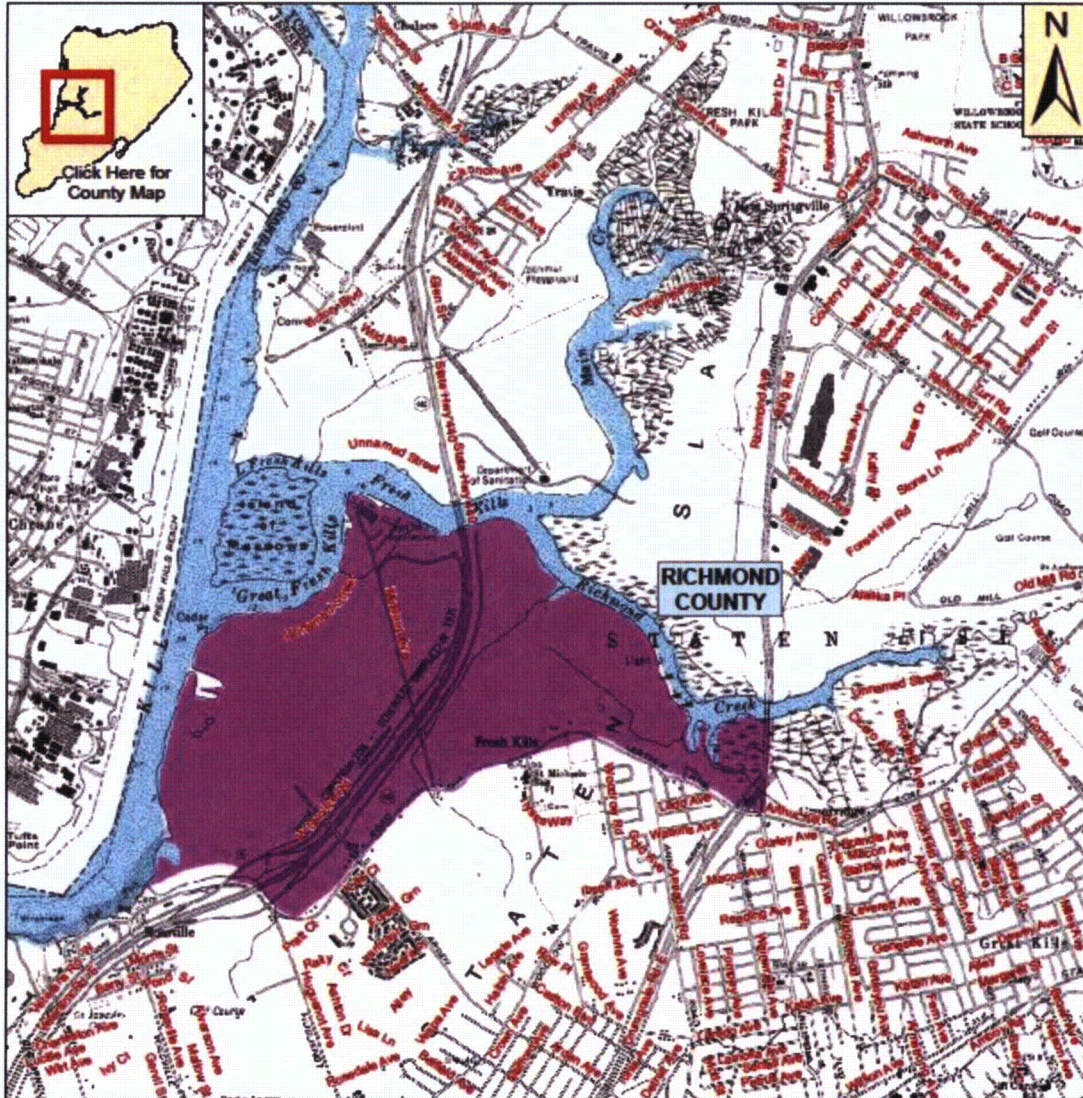
SCALE: 1:30,000

For questions about this map contact  
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Environmental Conservation  
Office of Environmental Justice  
625 Broadway, 14th Floor  
Albany, New York 12233-1500  
(518) 462-6558  
e@epc.state.ny.us





## Potential Environmental Justice Areas in West Central Richmond County (Staten Island), New York



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Data Source for Potential Environmental Justice Areas: U.S. Census Bureau, 2000 U.S. Census

### Legend

- Potential EJ Area
- Waterways

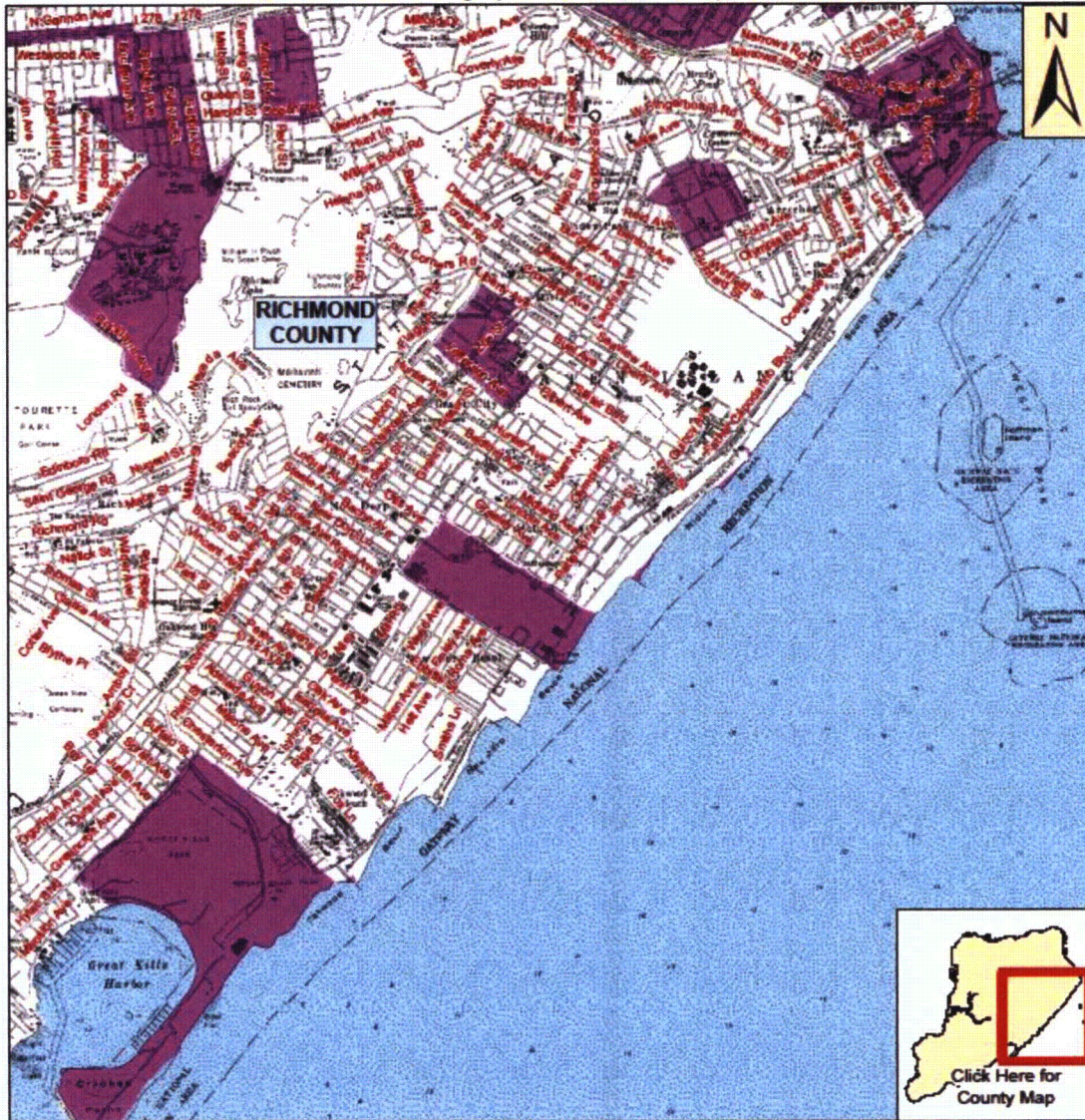
0 0.2 0.4 0.6 0.8 1 Miles  
SCALE: 1:30,000

For questions about this map contact  
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Office of Environmental Justice  
625 Broadway, 14th Floor  
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eoj@dec.state.ny.us





## Potential Environmental Justice Areas in East Central Richmond County (Staten Island), New York



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Data Source for Potential Environmental Justice Areas: U.S. Census Bureau, 2000 U.S. Census

### Legend

- Potential EJ Area
- Waterways

Miles  
0 0.2 0.4 0.6 0.8 1  
SCALE: 1:40,000

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New York State Department of  
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Office of Environmental Justice  
625 Broadway, 14th Floor  
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(518) 402-8558  
oer@dec.state.ny.us





## Potential Environmental Justice Areas in Southern Richmond County (Staten Island), New York





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Data Source for Potential Environmental Justice Areas: U.S. Census Bureau, 2000 U.S. Census

### Legend

-  Potential EJ Area
-  Waterways

0 0.2 0.4 0.6 0.8 1 Miles  
SCALE: 1:30,000

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