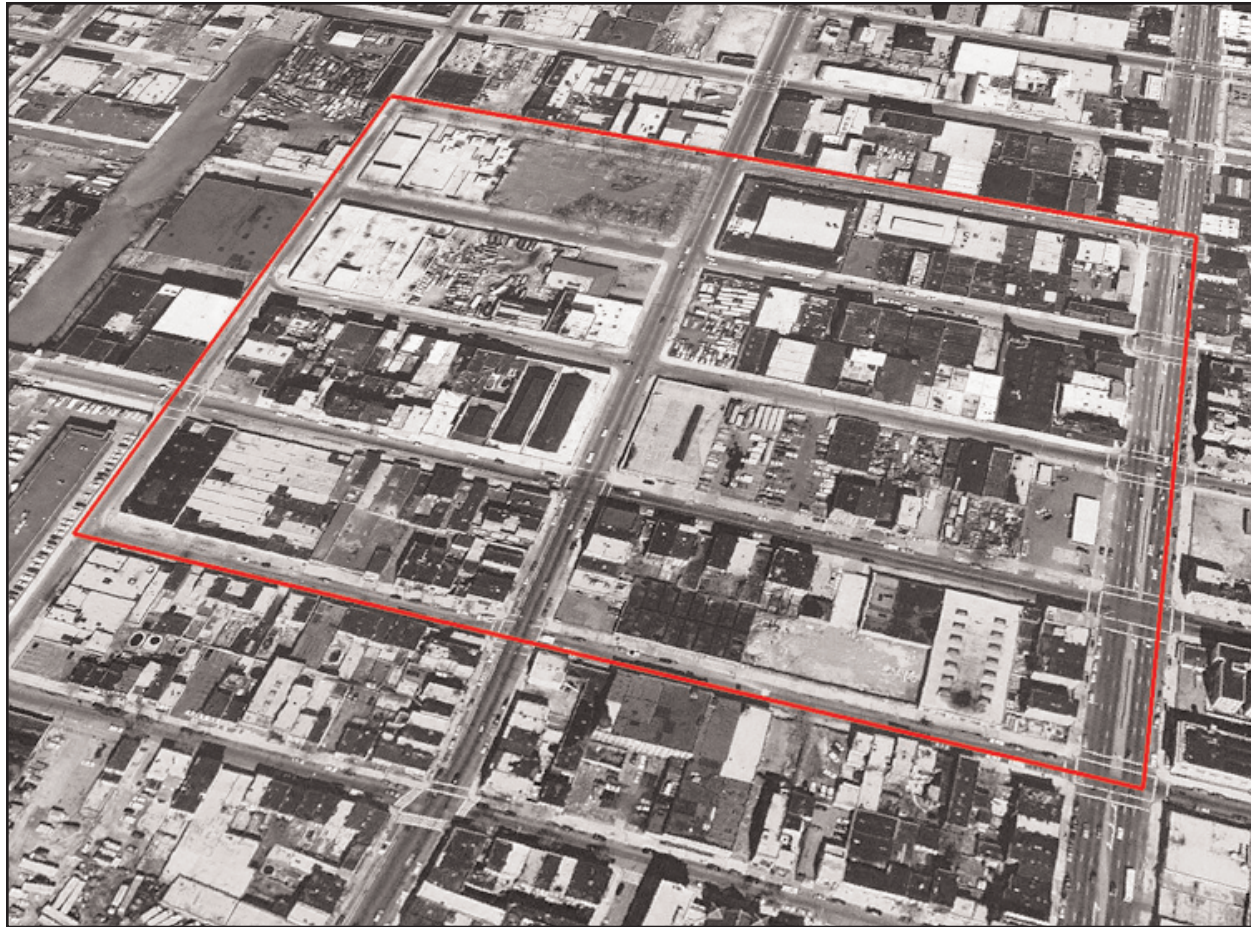


v. Case study four: (Gowanus Canal)

Model manufacturing district: Brooklyn

Light manufacturing that requires large amounts of land for outdoor storage or warehousing dominates many of the older manufacturing areas in Brooklyn. Yet they also contain mixed uses, with many smaller, non-complying residential uses built prior to the 1961 Zoning Resolution mixed between the larger manufacturing sites. This example is contained entirely within a single zoning district (M1-2) and contains large sites, especially in the north half of the study area.

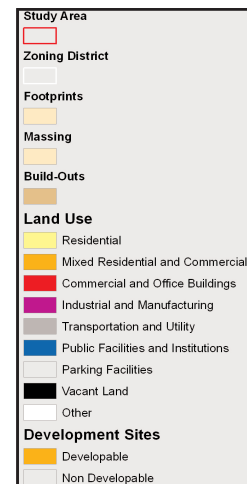
The area is underbuilt with over 850,000 SF of unused floor area. It is near transit and already supports a small residential population in nonconforming row houses and small tenements in the south. While some of the uses in the area might be unsightly or require trucks, no heavy manufacturing is allowed under M1 zoning and the area does not have the noises and smells one might expect from a large manufacturing area.

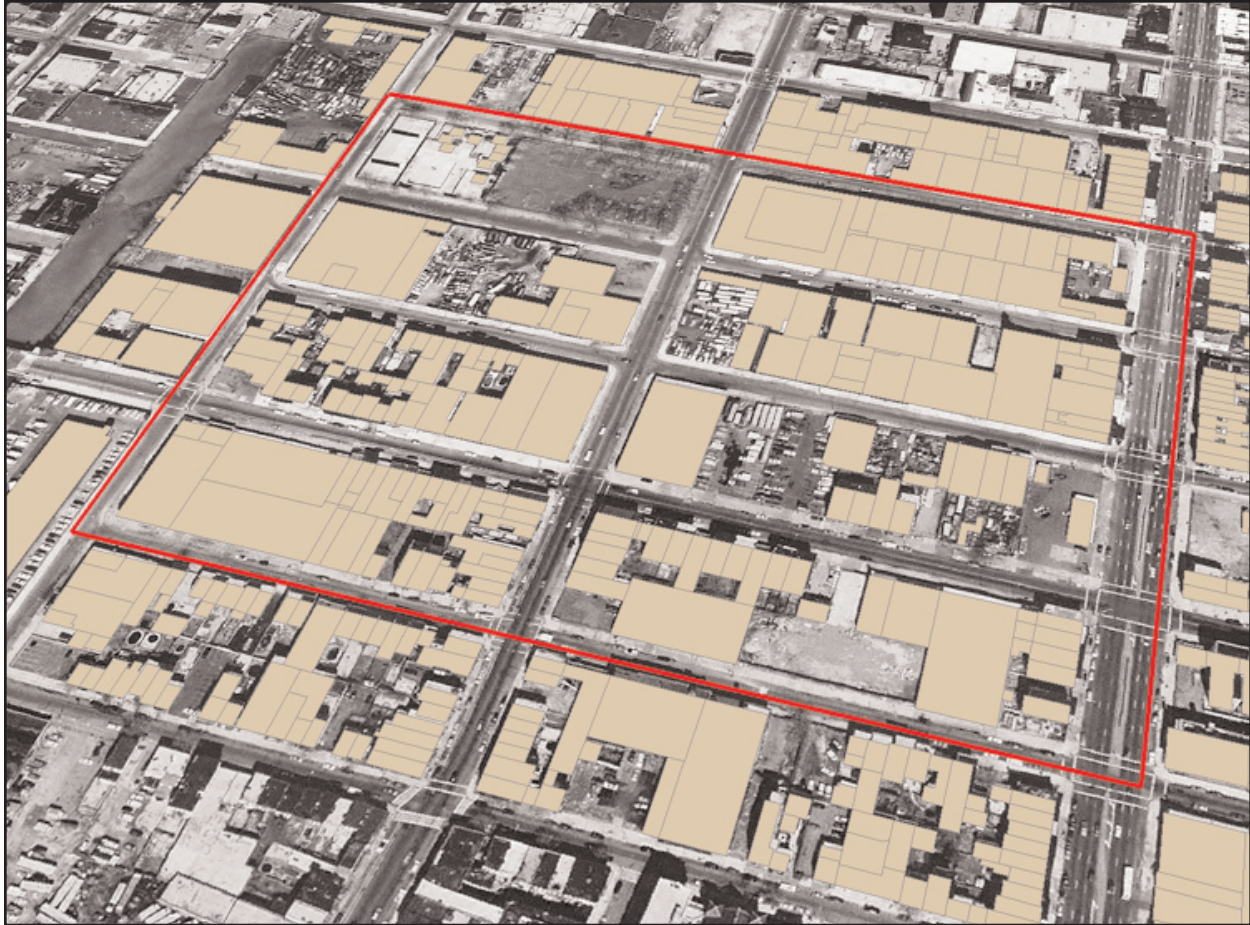


Case study four: Model manufacturing district: Brooklyn:

Figure 42: District boundary

The study area contains eight blocks bounded on the west by a wide street. The block to the northwest is an existing park.





Case study four: Model manufacturing district: Brooklyn:

Figure 43: Building footprints

The area contains a mixture of high-coverage, low-rise, large footprint buildings, and smaller buildings with rear yards. There are several unbuilt areas used for surface parking or outdoor storage.

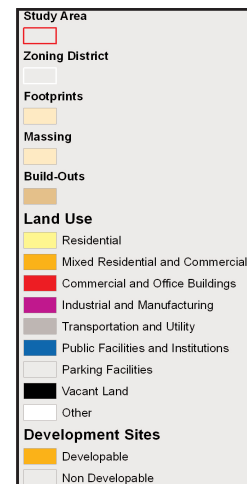


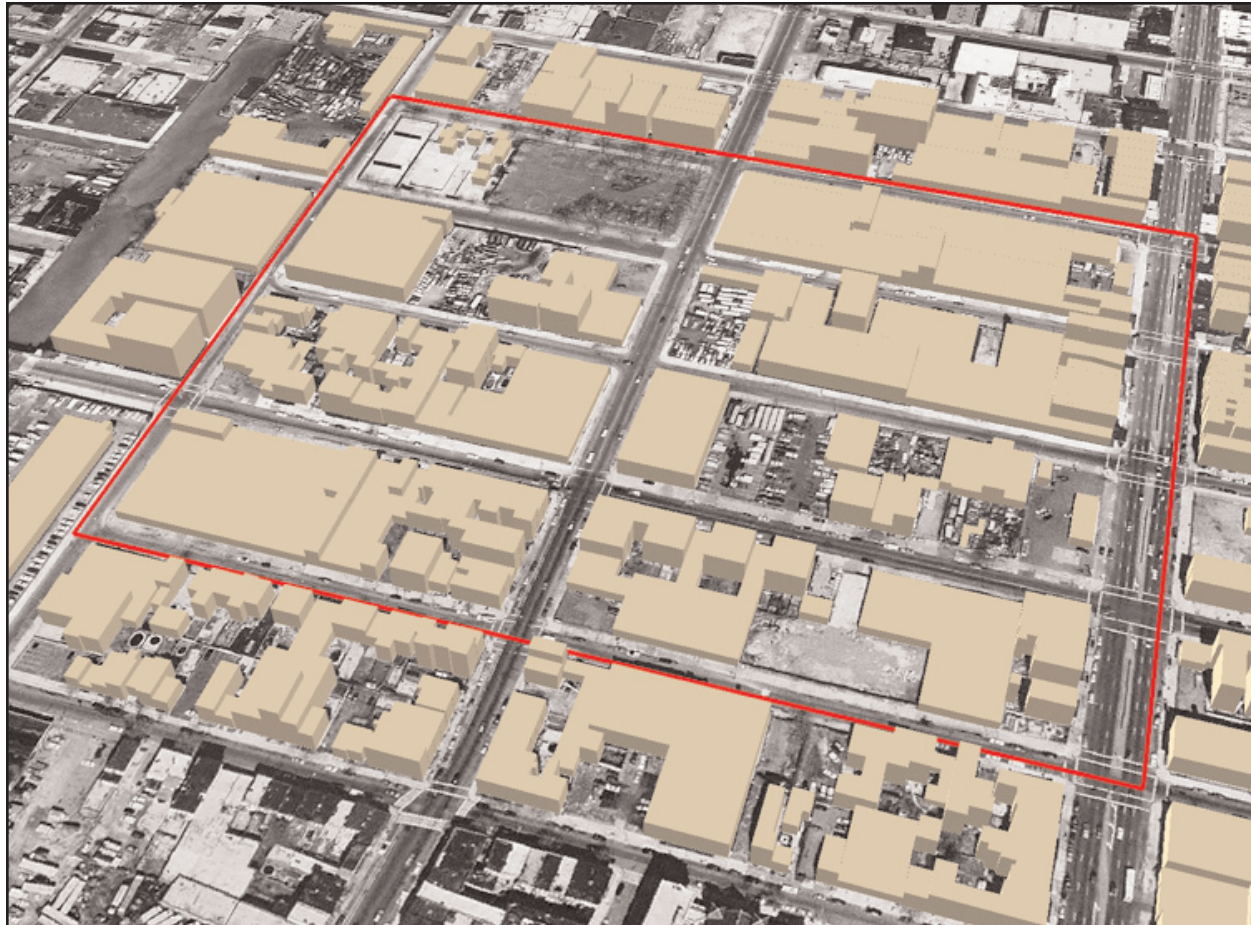


Case study four: Model manufacturing district: Brooklyn:

Figure 44: Landuse

The land use is predominantly industrial but there are many noncomplying residential uses to the south. Many of the residential properties owners are unable to get financing for improvements since their buildings represent noncomplying uses in the zoning district.

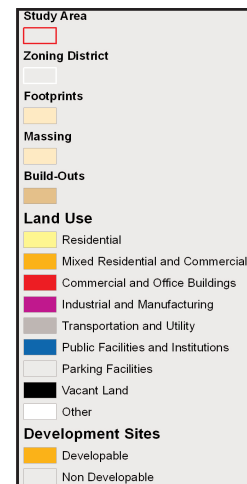




Case study four: Model manufacturing district: Brooklyn:

Figure 45: Massing

The area is low rise with several large footprint, single-story manufacturing uses. This structure type along with the many lots using outdoor storage means that the seven non-park blocks in the study area generate close to 850,000 SF of unbuilt floor area even within the relatively low 2.0 FAR allowed in the M1-2 district.





Case study four: Model manufacturing district: Brooklyn:

Figure 46: Hypothetical buildouts

Since the vast majority of the buildings are underbuilt, and with large unbuilt sites, the 850,000 SF of unused floor area is usually only a single story added to existing buildings or two stories for vacant sites assuming 100% coverage.

GOWANUS CANAL *MS-2 Zoning District*

	Lot Area	Average Site-Specific FAR	Amount Overbuilt	Hypothetical Build-Out	As Built Gross Sq.Ft.	Current Zoning Underbuilt	Hypothetical New Housing Units
Residential Use	12,334	2.00	23,488.00	238,384	214,827	44,487	48
All Other	7,16,323	2.00	3,405.00	1,433,152	327,044	3,110,33	301
TOTAL	7,28,657	2.00	27,144.00	1,671,536	541,871	3,154,665	349
Percentage Current Built-Out					40.3%		

Study Area
 Study Area

Zoning District
 Zoning District

Footprints
 Footprints

Massing
 Massing

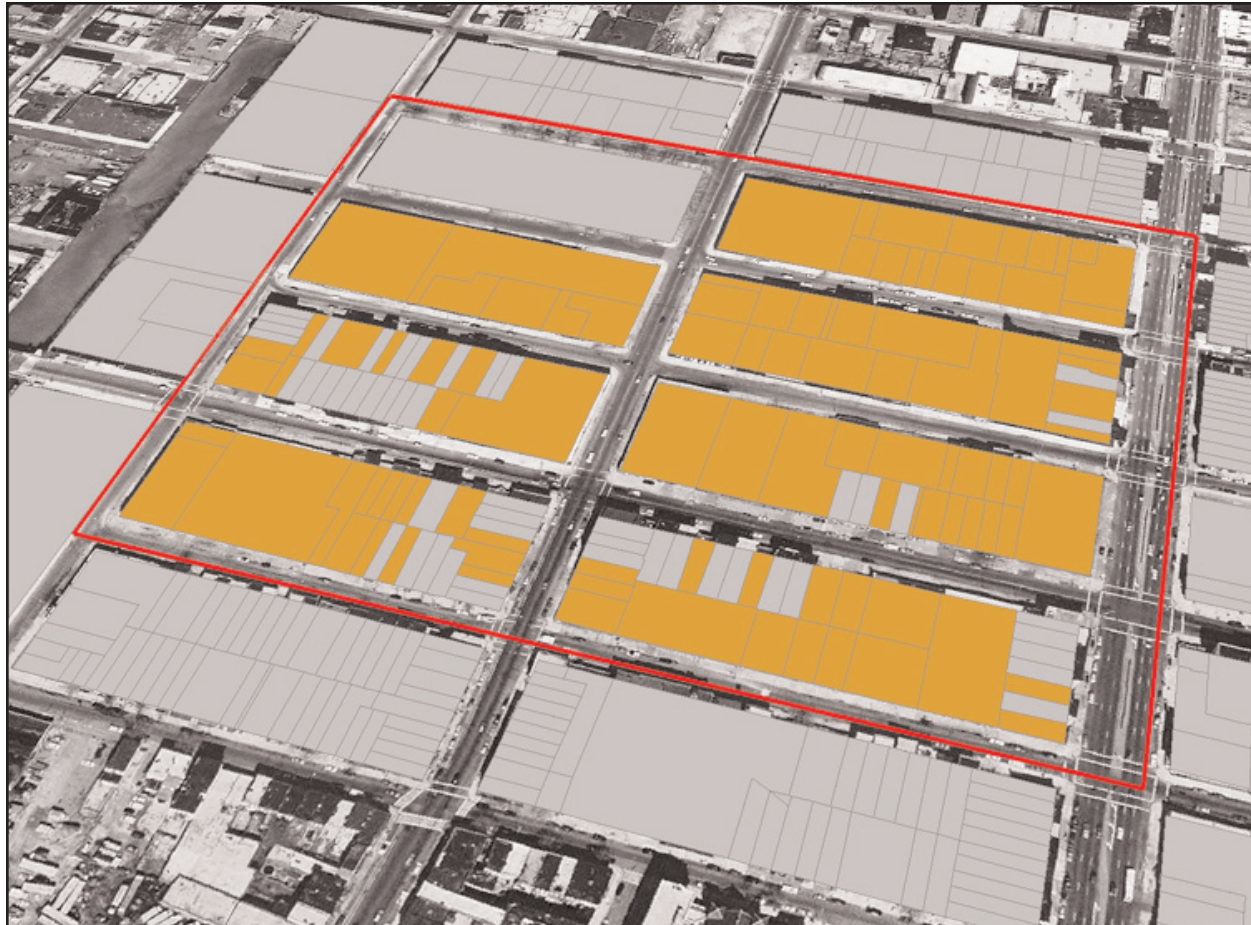
Build-Outs
 Build-Outs

Land Use

- Residential
- Mixed Residential and Commercial
- Commercial and Office Buildings
- Industrial and Manufacturing
- Transportation and Utility
- Public Facilities and Institutions
- Parking Facilities
- Vacant Land
- Other

Development Sites

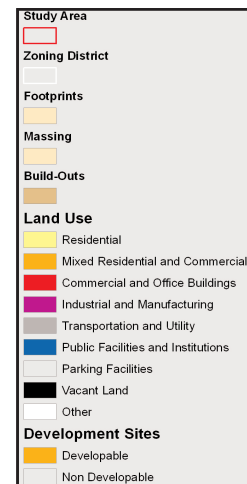
- Developable
- Non-Developable



Case study four: Model manufacturing district: Brooklyn:

Figure 47: Potential development sites with rezoning

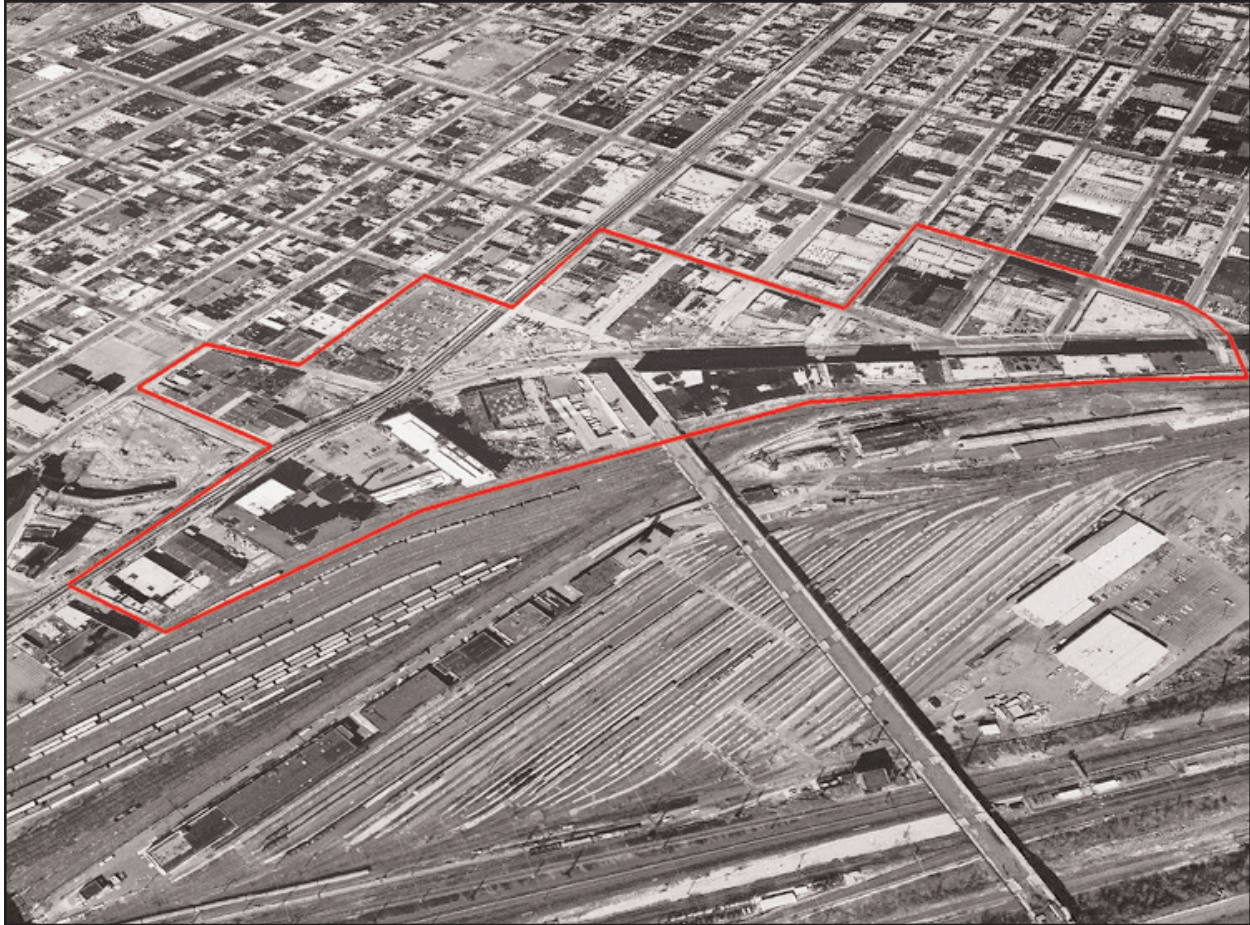
The highlighted areas above show lots in the study area that do not have existing residential uses. These are areas that would more likely be developed with residential mixed use should the zoning allow such development. How development on these sites might occur at various FARs is highlighted in the following section (J. Density models).



vi. Case study five: (Sunnyside Yards)

Model manufacturing district: Queens

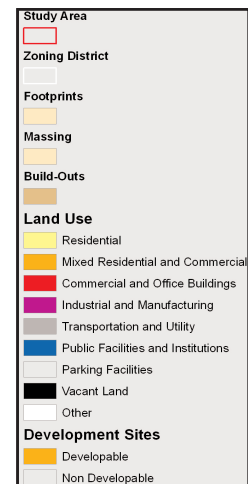
Large sites of mostly commercial and industrial uses dominate this irregularly shaped, M zoned area of Queens along Sunnyside Yards. It borders a mixed-use area and includes some residential uses on a few blocks in the study area. This area is attractive because it is close to transit, which makes it accessible to major employment centers in Long Island City and Manhattan. The industrial uses in the area are generally light and blend in well with the many commercial uses. Most uses are auto oriented and include a good deal of surface parking even though a subway station is nearby. The area is very underbuilt under current zoning. At only 38 percent of the allowable floor area in existing buildings, nearly 3.5 million SF of additional floor area is allowed under current zoning. 5 FAR zoning, surface parking lots and lower rise buildings to the north of the wide street explain this opportunity.

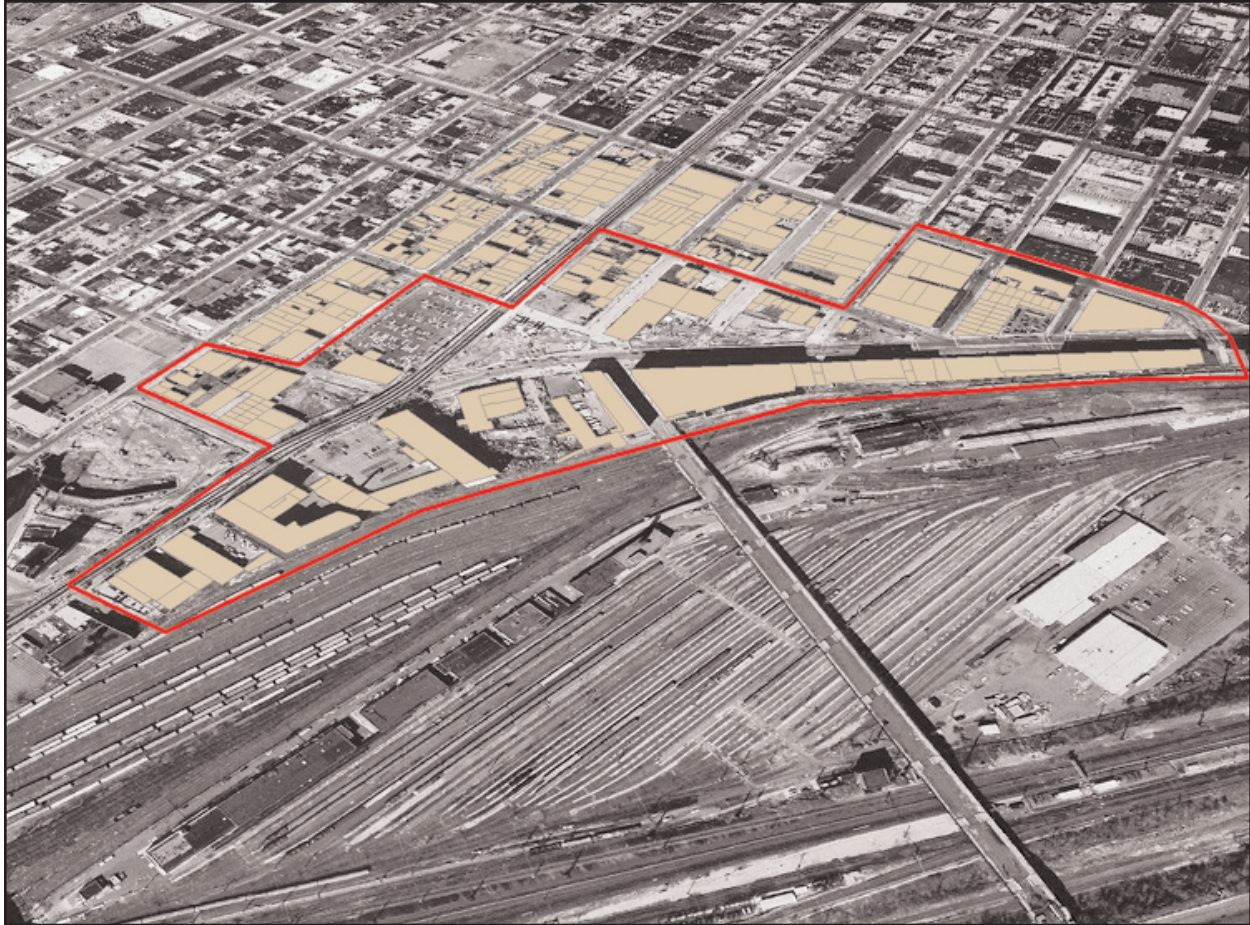


Case study five: Model manufacturing district: Queens:

Figure 48: District boundary

The study area is an irregularly shaped area of 12 blocks abutting a large rail yard.





Case study five: Model manufacturing district: Queens:

Figure 49: Building footprints

Large footprint buildings dominate the south of the study area while small footprint lower coverage buildings are on the north of the wide street.

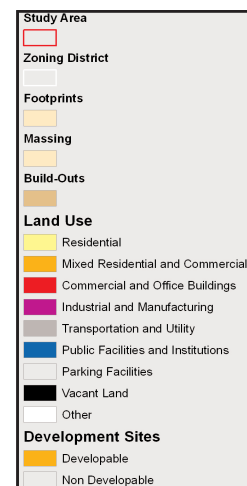




Case study five: Model manufacturing district: Queens:

Figure 50: Land use

The area is largely industrial and commercial with residential uses accounting for only 2 percent of the built area.

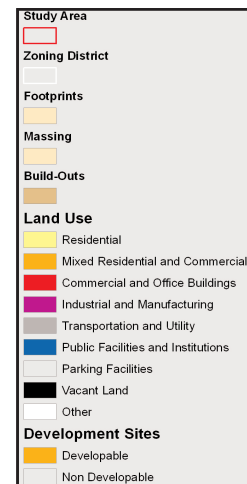




Case study five: Model manufacturing district: Queens:

Figure 51: Massing

The commercial and industrial uses to the south of the study area occupy substantial buildings allowed in this higher density manufacturing district. Most of them are still underbuilt under current zoning FARs, especially to the east where surface parking creates low coverage buildings.





Case study five: Model manufacturing district: Queens:

Figure 52: Hypothetical buildouts

Nearly every lot in this study area is underbuilt under current zoning. Those with on-site surface parking tend to be the most underbuilt and the 3.5 million SF of unbuilt floor area is a substantial increment on top of existing buildings. Hypothetically under current zoning densities, this area would generate close to 3,900 units of housing.

SUNNYSIDE YARDS

NY-5, NY-5D Zoning Districts

	Lot Area	Average Maximum FAR	Amount of Overbuilt	Hypothetical Build-Out	As Built Gross Sq.Ft.	Current Zoning Underbuilt	Hypothetical New Housing Units
Residential Use	21,714	5.00	-	241,290	21,714	214,799	221
Build-Outs	1,037,081	5.00	23,1323.00	5,337,033	2,100,372	3,236,661	3,230
TOTAL	1,058,795	5.00	23,1323.00	5,615,393	2,122,086	3,451,860	3,451
Percentage Current Build-Out			39.2%				

Study Area

Zoning District

Footprints

Massing

Build-Outs

Land Use

- Residential
- Mixed Residential and Commercial
- Commercial and Office Buildings
- Industrial and Manufacturing
- Transportation and Utility
- Public Facilities and Institutions
- Parking Facilities
- Vacant Land
- Other

Development Sites

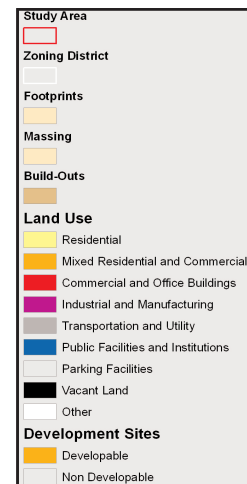
- Developable
- Non-Developable



Case study five: Model manufacturing district: Queens:

Figure 53: Potential development sites with rezoning

The highlighted areas above show lots in the study area that do not have existing residential uses. These are areas that would more likely be developed with residential mixed use should the zoning allow such development.



vii. Case study six: (Harlem River)

Model manufacturing district: Bronx

Waterfront access is considered a major amenity to new housing developments throughout New York City. Available development sites zoned residential on the waterfront are limited, however, because significant portions of the City's waterfront is still zoned for manufacturing and industrial uses. This study area is one of these places. It is very underbuilt and is an excellent opportunity for major residential yield should residential uses be allowed.

This study area is mixed use and is zoned mostly for industrial uses. It abuts the Harlem River and has easy access to the water with no major highway or rail line blocking access. Residential conversions have already happened in the area and there is a residential mixed-use enclave that is recognized through zoning with the MX district, which combines M1 and R6 and allows mixing residential and industrial uses.

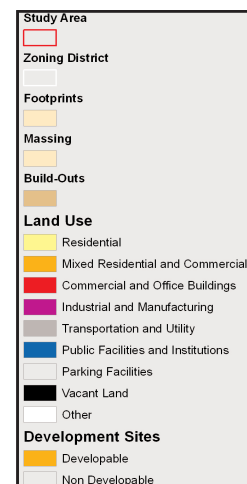
There is a very large, nearly vacant site to the south that generates hundreds of thousands of square feet of floor area by itself. The area is not near transit and would most likely be developed with auto-oriented development.



Case study six: Model manufacturing district: Bronx:

Figure 54: District boundary

The study area contains eight blocks, one of which is nearly completely unbuilt and quite large.



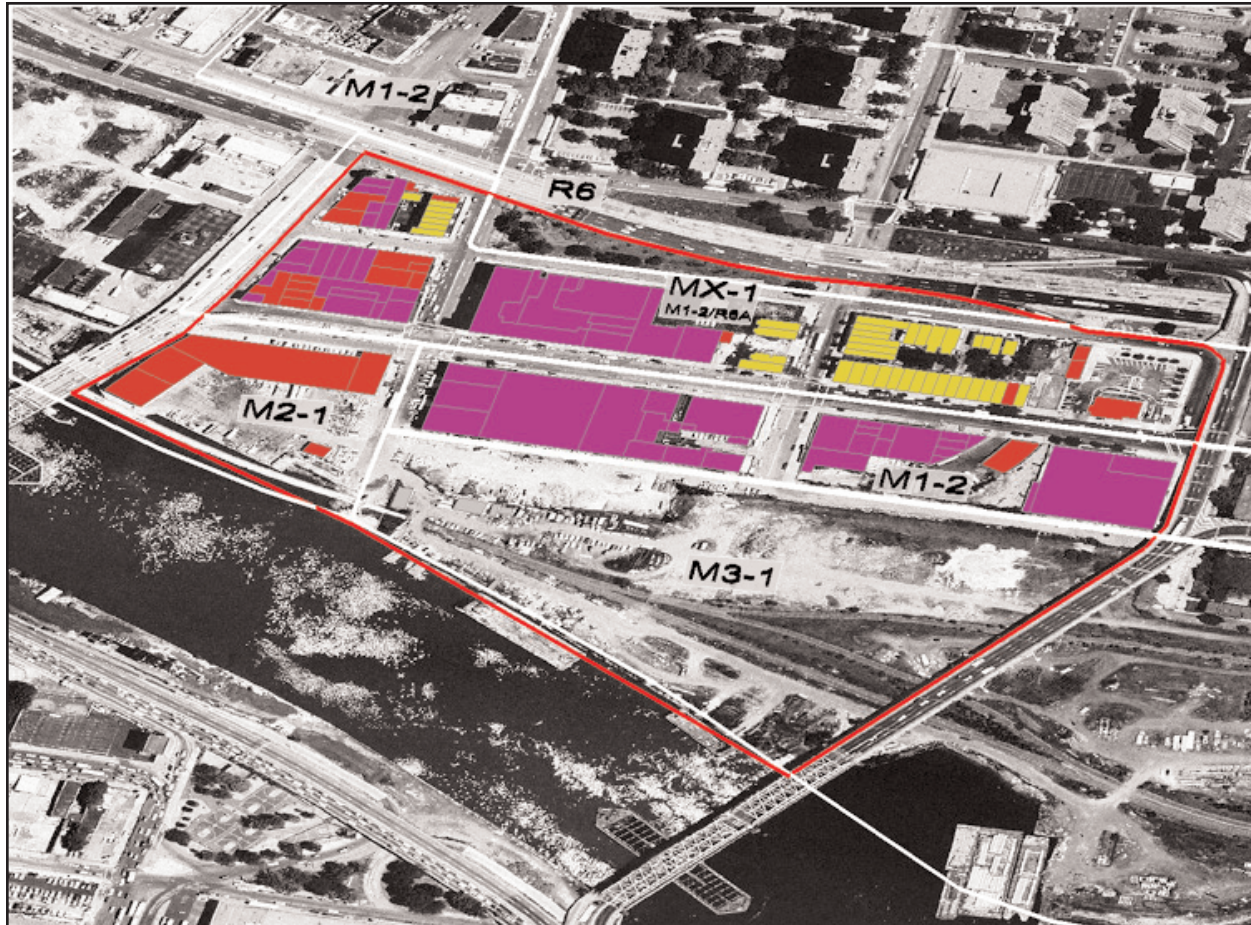


Case study six: Model manufacturing district: Bronx:

Figure 55: Building footprints

Buildings in the nonresidential areas are either high or full coverage. The residential mixed-use area has rear yards and small footprints typical of small lot residential development. The area fronting the Harlem River is extensive and currently being used for outdoor storage.

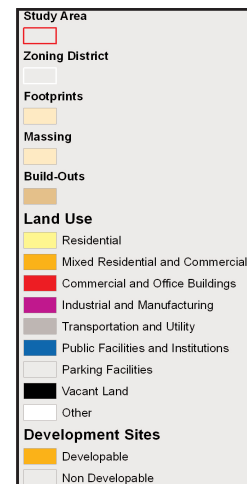




Case study six: Model manufacturing district: Bronx:

Figure 54: Land use

Commercial, industrial and residential uses are all found in the study area. All of the residential uses are found in the MX zoning district, which allows mixed industrial and residential uses unlike the more typical M district, which does not allow residential uses. Though zoned for heavy manufacturing, the sites that the front the river are either empty or have large amounts of unbuilt area.

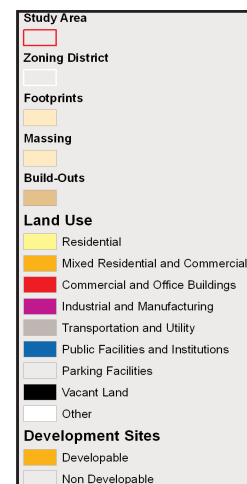




Case study six: Model manufacturing district: Bronx:

Figure 55: Massing

Many of the existing buildings are both high coverage and several stories tall, which means that parts of this area are overbuilt under current zoning densities. Other areas are underbuilt and generate close to 2 millions SF of unbuilt floor area under current zoning.





Case study six: Model manufacturing district: Bronx:

Figure 56: Hypothetical build-outs

Most of the unused floor area would be placed on the unbuilt areas that front the Harlem River. As a simple math exercise, this massing is placed according to the rules for vacant corner lots as a full coverage building, regardless of the feasibility of this action.

This vacant M3 area might very well have practical site problems that impair its development including environmental contamination. It nevertheless generates a large amount of floor area even under current zoning densities.

HARLEM RIVER

M2-2, M2-3, M3-1 and M3-2/3/4 Zoning Districts

	Lot Area	Average Neighborhood FAR	Amount Overbuilt	Hypothetical Build-Out	As Built Gross Sq.Ft.	Current Zoning Underbuilt	Hypothetical New Housing Units
Residential Use	77,981	2.00	75,798.00	281,285	228,987	7,148	8
All Other	1,232,305	2.00	203,681.00	2,793,231	332,491	1,800,323	2,112
TOTAL	1,310,286	2.00	281,174.00	2,994,726	1,036,748	1,807,974	2,120

Percentage Current Build Out: 35.8%

Study Area
 Study Area

Zoning District
 Zoning District

Footprints
 Footprints

Massing
 Massing

Build-Outs
 Build-Outs

Land Use

- Residential
- Mixed Residential and Commercial
- Commercial and Office Buildings
- Industrial and Manufacturing
- Transportation and Utility
- Public Facilities and Institutions
- Parking Facilities
- Vacant Land
- Other

Development Sites

- Developable
- Non-Developable



Case study six: Model manufacturing district: Bronx:

Figure 57: Potential development sites with rezoning

The highlighted areas above show lots in the study area that do not have existing residential uses. These are areas that would more likely be developed with housing should the zoning allow such development.



**J. Density models:
Axonometric and eye-level development of the
Gowanus and Coney Island Avenue Study areas.**

While the hypothetical build-out analysis examined how much new housing might potentially be built under current zoning densities, the following examples take two of the hypothetical build-out study areas and examines how they might develop under 1.0 FAR increases in residential density (2, 3, 4, 5, 6, and 7 FAR).

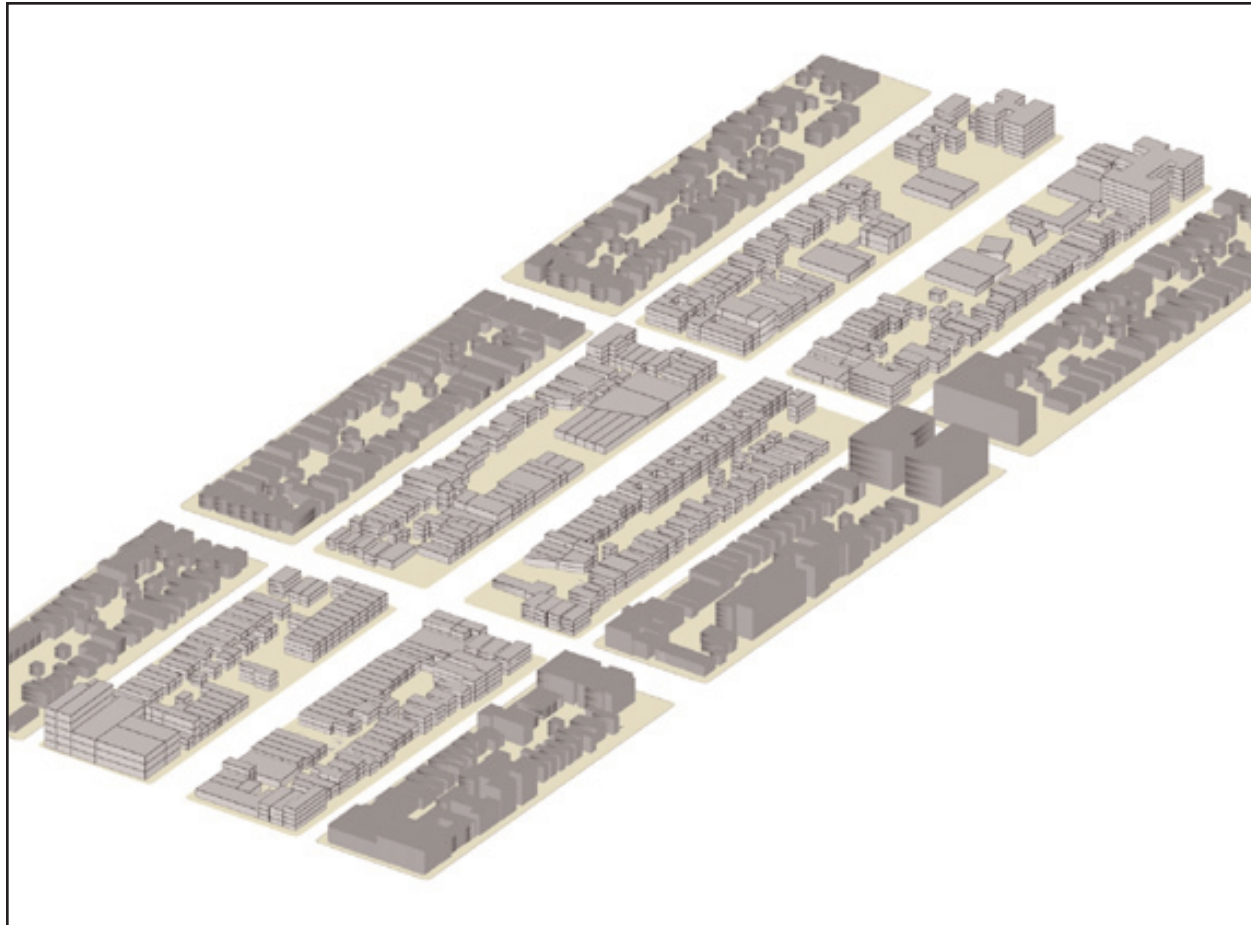
The first step is the identification of individual lots that would likely be developed. It is based on the maps created during the hypothetical build-out analysis (specifically the "Potential development sites with rezoning" maps). Contiguous areas were then assembled into development sites. Small sites (less than 40 feet wide) that were bounded by existing residential or institutional uses were not considered likely development targets and removed from the analysis.

These assemblages were then configured at residential FARs of 2, 3, 4, 5, 6, and 7 using the following rules: New residential mixed use buildings that front a wide street have ground floor commercial uses with 15 feet floor-to-floor. This commercial use is not counted against the residential FAR to encourage commercial uses in the base of the buildings. In effect, developments that face a wide street are built to 3 FAR densities, 2 of which are residential. Residential floors are 10 feet floor to floor. The examples have wide-street street walls that range between 55 and 75 feet and 55 feet on narrow streets. The upper portion of the building above the base is set back. The sites were assembled, and the buildings configured, to follow the traditional New York City perimeter block development pattern. The development analysis shows buildings with street walls and setbacks that are configured in the spirit but not the letter of the Contextual Zoning regulations.

The incremental redevelopment of the area is then shown in both axonometric and eye level views.

This analysis makes no claim as to the appropriateness of any zoning change in these areas or of a preferred density, including that which is currently allowed. Rather, it shows what form a residential building might take on likely development sites in 1.0 FAR residential increments and how many dwelling

units could be generated.



Case study one: Model commercial corridor: Brooklyn:

Figure 60: Axonometric residential: Existing

