

DRAFT

NYC LPC

NEW YORK CITY PILOT STUDY FOR NYS'S RP3 PROGRAM

1983

(The Bronx: J, S;
Brooklyn:
Manhattan
Queens
Staten Island)

117

APPENDIX I: Borough Divisions

1. The Bronx

Meta Janowitz
Nancy Stehling

2. Brooklyn

William Askins
Roselle Henn
Jed Levin
Frederick Winter

3. Manhattan

Joan Geismar
Wendy Harris
Kate Morgan
Nan Rothschild

4. Queens

Anne-Marie Cantwell
Arnold Pickman
Dianna Rockman

5. Staten Island

Sherene Baugher-Perlin
Jo Ann Cotz

APPENDIX II:

Map Categories for the Industrial Period in New York City

1. Agricultural
2. Commercial
3. Residential (3=high concentration, 3/15 cluster of homes but still open spaced on each block, 15/3=less the 10% population concentration, 15/3E= larger estates)
4. Governmental (town halls, courthouses, civic center)
5. Military
6. Industrial
7. Institutional Complexes (e.g. colleges, hospitals, mental institutions, but must be larger than one block in size)
8. Parks and Recreation (e.g. beaches, amusement parks and racetracks)
9. Large Cemeteries (over one block in size)
10. Docks and Wharves
11. Fishing
12. Transportation (e.g. railroad and ferry terminals and canals)
13. Reservoir
14. Nineteenth Century Landfill
15. Other (unimproved, or wooded areas), 15a=marsh
16. Hamlet

Note: The land use categories were standardized in order to have comparable maps. These categories chosen were fairly broad in order to develop general settlement pattern maps within the limited time allotted for this project. With more funding and research time, more complex maps could be developed.

State Archaeology Plan

Map Categories for the Industrial Period in New York City

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- The Borough Teams

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Bibliographical reference forms: for all maps consulted, please give title, date library/archive where located (note if in special collection)

INTRODUCTION

This report is a pilot study for New York State's resource planning protection program (RP3). This study's geographic area is the five boroughs of New York City, that is, the Bronx, Brooklyn, Manhattan, Queens and Staten Island and the project's time period is 1815 to 1898. The time frame chosen for this study unit -- 1815 to 1898 -- starts with the emergence of the industrial age (which begins after the war of 1812) and ends with the date when the five boroughs incorporated into one large city. The nineteenth century is and has been an important research period for historical archaeologists, however, this time period has been under-examined in many of the past reports in public archaeology. It is the purpose of this document to emphasize and illustrate why nineteenth century New York is an important period worthy of archaeological investigation.

During the 19th century, New York City becomes the most important urban center in the western hemisphere. By the turn of the twentieth century the city is one of the economic and ideological centers of the western world. Archaeologically, New York City is the most significant metropolitan region to study in order to obtain a better understanding of the emergence of modern America. As an industrial and transportation center, New York has a strong influence on American material culture, especially household commodities. New York, as a port city, is the conduit for the massive immigration into the United States, and thus it is the first point of cultural experience for millions of people who then move on to other sections of this country.

New York City's history however is not just the story of Manhattan's development - it is the history and evolution of five distinct boroughs that merged in 1898 into one city. While the boroughs have economic, political and social ties with one another, they are nevertheless, five separate units. The archaeologists working on this pilot study have divided up the report into five sections that is, borough divisions (see appendix 1). Within each section there is an introduction, an overview of the historical development of this borough, maps showing changes in settlement patterns, a bibliography of site reports and current research, and a list of research questions.

Within the borough narratives the archaeologists describe the changes in settlement patterns from 1815 to 1898. In many cases, there is a transformation from rural or semi-rural agrarian settlements into industrial and/or commercial urbanized communities. Accompanying each narrative are two to four maps showing each borough's changing settlement patterns. In some areas early maps are either nonexistent or very inaccurate. These maps, for the most part, are based on data from city atlases and insurance maps. In order to develop comparable maps, the land use categories have been standardized (see appendix 2). The categories chosen are fairly broad, for example, commercial, military, industrial and residential. Broad categories made it possible to design general land use maps within the limited time allotted to this pilot study. While land use patterns are only one of many ways of approaching a borough's development, it is a useful general focus for this report. Lastly, the maps and narrative are not meant to be an exhaustive study of the five boroughs but rather an introduction to the area.

The final segment of the report is an over-all summary and discussion. This concluding section will tie these borough reports together into a common city-wide focus. Problems and research questions common to all five boroughs are discussed in this project summary.

Preliminary Research Questions - The Bronx

1. Relationship of the Bronx to the two core areas of Yonkers and Manhattan. Was the Bronx a bedroom and recreational community or was it fairly self-sufficient contained?
 2. Dates when the waterways and shorelines were altered and the technologies used.
 3. How self-sufficient were the early towns?
 4. How were "unimproved" lands used?
 5. Were most of the contacts between the Bronx and Queens direct or through Manhattan ?
 6. What early industries were in the Bronx and what were their locations and interrelationships?
 7. Did the people of the Bronx obtain most of their goods from areas to the north or south or were most locally made?
 8. How much of a barrier to development was the Bronx River? What other factors were involved?
- And many more...

GUIDELINES FOR ARCHAEOLOGICAL PROJECT

Bruce Fullem

Purpose: To assist the State in evaluating proposed scopes of work and to formulate appropriate mitigation measures, it is essential to establish a mechanism for archaeological undertakings.

Note: This is not to be considered a project to uncover new data - it is an evaluation and analysis of the available material.

Questions About New York City 1815-1898

1. What are the settlement patterns for each borough? Can we describe these patterns for any of the boroughs or does this require more in-depth research? If more research is required, how much and what type?
2. What types of research questions have been posed for industrial period sites?
3. Are there any additional research questions that should be addressed?
4. What types of research should be undertaken for sites in this time period?
5. What sites have been excavated from this industrial period?
6. What gaps exist in the data base - e.g. do we have usable bibliographies for historical research in each borough?

THE HISTORY OF THE BRONX

1815 - 1898

Known as the borough of parks and universities, The Bronx grew slowly until the 20th Century when it more than doubled its population from 200,507 to 430,980, as seen in the Federal Census records of 1900 and 1910. During the 17th and 18th Centuries, the area was settled along large manor and patent lines; Pelham Manor, Fordham Manor, Morrisania, etc.. In 1788, due to a state-wide plan, the area was divided into five townships; Yonkers, Morrisania, Eastchester, Westchester, and Pelham, following the old manor lines. In 1874 the land west of the Bronx River and south of the incorporated Westchester County city of Yonkers became part of New York City. This portion included the townships of Morrisania and Kingsbridge (formerly Yonkers). It was not until 1895 that the land east of the Bronx River and south of the cities of Mount Vernon and New Rochelle became part of the City of New York. This portion included the towns of Eastchester, Westchester and Pelham. The Charter of Greater New York went into effect in 1898 and the area of the Bronx was then officially designated a borough of the City of New York. It was not until 1912 that the Borough of the Bronx became the 62nd, or last, county so designated in the State of New York.

The most dominant factor affecting the settlement patterns seen in the Borough was its natural topography; a system of north-south running ridges with rivers and streams lying in the adjacent valleys. The most important waterway regarding transportation/navigation is the Harlem River to the west, which separates The Bronx from Manhattan Island. The ship canal dug at Spuyten Duyvil in 1895 facilitated access to the Hudson River, thereby opening the trade ^{routes} ~~network~~ with the Port of New York to the south and the rest of the state to the north. The East River and Long Island Sound have been major shipping corridors since the 17th Century. The inland waterways of the borough were also important in affecting settlement patterns. The Bronx River, which

roughly bisects the present Bronx County, was navigable to the settlement at West Farms; Westchester Creek was navigable; and the Hutchinson River was navigable to the town of Eastchester. Other long since filled in waterways were utilized for power for mills, etc.. Some of these are Cromwell's Creek, the Millbrook, Bungay Creek, Eastchester Creek, and Black Dog Brook.

The earliest roads in the Bronx connected Manhattan with New England and Westchester County and ran along the old Indian trails which followed the ridges and waterways of the area. The present day Kingsbridge Road, High-bridge Road, Eastchester Avenue, and the Boston and Albany Post Roads all date to the 17th Century and were major Indian routes. Many early roads, however, began as private means of access to tracts of property. It was not until the mid-19th Century, after the major railroad corridors were built, that the systematic laying out of roads encouraged the development of previously inaccessible portions of the borough.

The earliest settlements were in the south-west part of the borough between the Bronx River to the east and the Harlem River to the west. This area, formerly the estate of Jonas Bronck and later the manor of Morrisania, had a good port and was closest to Manhattan. In addition, the Millbrook, which ran along present Brook Avenue, gave access to more inland areas.

18th and early 19th Century development continued northward along the Fordham Ridge between the Harlem and Bronx Rivers to the Westchester County city of Yonkers. The Bronx River appears to have been a natural barrier to eastward development.

Development in the western portion was encouraged by the railroads in the mid-19th Century. The New York and Harlem Railroad was completed to Williamsbridge in 1842. By 1844, it was extended to White Plains in Westchester County. This rail line serviced the settlements of Morrisania, West Farms, Fordham, and the cities of Yonkers and White Plains. The Hudson River Railroad

was completed in 1849, which also promoted the growth to the west and north. The New York and New Haven Railroad was completed in 1848. However, its only Bronx station was at Woodlawn, which did not do much to push growth in the surrounding farmlands. The western portion of the ^{borough} was annexed to the City of New York in 1874.

The eastern section of the borough ^{developed} more slowly and in different patterns than those of the west. Farms and estates with scattered village settlements existed along the shorelines and the present Westchester County border, Hutchinson River and Westchester Creek, leaving the vast central part largely undeveloped. This situation persisted well into the last quarter of the 19th Century. Much of the northeast portion of the area, the former manor of Pelham, was swamp and therefore undeveloped. The advent of the railroad lines making the area accessible from the north, south, and west was the single most important factor in the area's development. The Harlem River and Port Chester Railroad (the present Harlem division of the New York Central), built in 1872 can be seen as the start of the rapid development of the eastern half of the borough. This section was annexed to the City of New York in 1895.

Today, roughly one sixth of the borough is public parkland. In the 19th Century, The Bronx was home to several recreational complexes which reflected its suburban character. The Morris Park Race Course to the east, The Fleetwood Trotting Course in Morrisania, and the Jerome Park Race Track (now the Jerome Park reservoir) are examples of these 19th Century complexes. Again, the railroads facilitate access from Manhattan, Westchester County, and New England. As the population of the borough grew, the sites of these complexes became more valuable for development into residential and commercial properties. The parklands, however, remain. In 1883 the New York State legislature passed a bill to select new sites for public parks. Through acquisition of estates, farms, etc., 6 major Bronx Parks were created; Van Cortlandt, Bronx, Pelham Bay, Crotona, St. Mary's, and Claremont. The turn of the 20th Century would see the

development of Bronx Park into the Zoological Garden to the south, and the Botanical Gardens to the north. Extensive landfill in Pelham Bay Park, connecting Gunter and Twin Islands to the mainland of Rodman's Neck, would create present day Orchard Beach, a very popular New York City recreational facility.

Any archaeological work in the Bronx must take into account the extensive, perhaps more than in any other borough, landfilling. Almost the entire shore line has been altered. At Port Morris and Hunt's Point the rail yards necessitated large scale landfilling and grading. Ferry Point, where there was a 18th and 19th Century ferry to Queens, is now more than a mile inland, and is the site of a park built on garbage fill. Land filling on a large scale in the Bronx started in the 19th Century and continues to the present; the two bridges to Queens (Whitestone and Throgs Neck) are located on the site of old ferries and involved extensive land filling; Co-op City is built on the former site of a large swamp near Pelham Bay. These are by no means all of the 19th to 20th Century land fill sites (see maps).

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And many more...

NY STATE CULTURAL RESOURCE PLAN
HISTORIC OCCUPATION PERIOD
BOROUGH OF BROOKLYN, NYC, 1815-1898

BY

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1983

Introduction

Research on Brooklyn's settlement pattern was periodized in terms of three major events in the borough's history. The maps compiled for this section were intended to provide a rough guide to land use patterns during each of the three periods defined and to complement a general discussion of Brooklyn's history. The map research and the documentary study focused on changes in settlement pattern in an attempt to point out some possible research questions that future archaeological investigation might profitably address. Much more detailed work would be necessary in order to provide a comprehensive research design from which to orient future archaeological research and to use as an aide in determining the potential research value of any site.

The three periods that were defined are: 1815-1834, 1834-1865 and 1865-1898. The first period begins in 1815 with the westward expansion of New York State following the cessation of war embargoes. The development of Industrial Capitalism, which is the most significant trend of the 19th century, can be said to have its roots in the period. For the purposes of this summary the date 1834, when Brooklyn village was incorporated as a city, has been used as the beginning of the second period. This date also marks the opening of a period of rapid, sustained population growth and concentration throughout Kings County. The processes of population concentration, neighborhood formation and the effect of increased economic, racial and ethnic diversity, all of which typified the industrialization of America, can be studied directly in Brooklyn. The third period begins at the end of the Civil War in 1865, when radical socio-economic reorientations occurred throughout the country as the United States achieved the status of a mature, industrial nation. In the later 19th century expansion of the transportation network accelerated the trend towards urbanization, and the remainder of Kings County was annexed to the City of Brooklyn. Our summary history ends in 1898 when Brooklyn merged with Greater New York City, and became the Borough of Brooklyn.

Brooklyn: 1815-1898

The beginning decades of the 19th century saw the five original towns of Kings County already set upon their different trajectories. Of the four 17th century Dutch towns (Breukelen, Bushwick, New Utrecht and Flatlands) and one English town (Gravesend), the first two were to experience rapid change in the first part of the 19th century. Population figures for 1810 and 1830 reflect this dichotomy. Brooklyn grew from over 4,000 to over 15,000, an increase of almost four fold. Bushwick, which contained the thriving community of Williamsburgh, doubled its size as it grew from almost 800 to over 1600. The rest of the Kings County towns had relatively little change in population size (Flatbush 1159 to 1143, Flatlands 517 to 596, Gravesend 520 to 565, and New Utrecht 907 to 1217) (Rosenwaike 1972:31).

The Village of Brooklyn began to "boom" as wealthy merchants, commercially based in Manhattan, began to leave the city to make their homes on the suburban bluffs across the river. A reliable link to Manhattan was created via the Fulton Steam Ferry which first ran in 1814 and by 1817, Williamsburgh was connected by horse ferry. As a result of improved transportation facilities population growth and land speculation accelerated. It was estimated that some 900 houses had been rapidly and somewhat flimsily built in the Village between 1823 and 1829 in order to maximize developer's profits (Weld 1938:28-29). Williamsburgh was formed out of part of Bushwick in 1839.

Between 1815 and 1834, Brooklyn Village's growing role as entrepot for Long Island's agricultural exports intensified its economic ties to Manhattan, New York State and the rest of the World System. Secondary enterprises associated with the shipping and bulking of foodstuffs, such as warehouses and slaughterhouses, appeared around the depot areas. The Navy Yard established in Wallabout Bay in 1801 was the center of Brooklyn's seaboard with piers, wharfs and docks eventually stretching from Williamsburgh south to Red Hook. This commercial orientation dominated the land use history of the western portion of county.

To the east and south, however, the rest of the county retained an agricultural land use pattern. Outlying towns like Flatlands were still dominated by the descendants of the original Dutch settlers through mid-century (Ment, Robins, and Framberger 1979:7). Until the total abolition of slavery in 1827, the farmers of Long Island and Kings County in particular, relied heavily on slave labor. After emancipation many Black Americans remained in the agricultural sectors, while others joined the growing working class population of the eastern cities. Rural Kings County was typified by small clusters of farm houses and craft shops, such as black smiths, wheelrights and storekeepers, which supplied the farming populace with their specialized services.

The thirty-one years between 1834-1865 saw the arrival of diverse ethnic groups, primarily West Europeans (Irish, German and English) as well as the migration of both white and black native-born Americans to Brooklyn's shores. Most of these people settled in the urban areas of Brooklyn City and in ethnic enclaves: the Irish in the area around the Navy Yard, the Germans between Buswick and Williamsburgh, Scandinavians in Bay Ridge, the Italians in South Brooklyn and Jews in Brownsville. (Miller, Miller and Karp 1979:31). By 1855, Brooklyn was the third largest city in America. Black communities flourished, with dense population centers in Williamsburgh between the 1830's and 1850's and in the more rural Weeksville and Carrsville located near the Village of Bedford (Swan 1977:117). The population of the county was also economically diverse, mirroring the changing class structure of the country as a whole. Many upper class residences were located on the bluffs overlooking New York harbor. The urban areas also supported a growing middle class. Working-class neighborhoods flourished around the manufacturing

and transportation centers.

The settlement pattern was characterized at mid-century by differentiation into an urban, industrial region and an agricultural sector which were symbiotically connected. On the county's western shore, the Cities of Brooklyn and Williamsburgh (incorporated in 1852, Bushwick annexed in 1855) grew to be industrial centers economically tied to Manhattan. However, in 1876, Flatbush, Flatlands, Gravesend and New Utrecht could still be described as small agricultural towns. The further development of the East River's waterfront with major docks such as the Atlantic Docks at Red Hook in the 1840's, followed by the Erie Basin (also Red Hook), docks in Williamsburgh and Greenpoint, innumerable ferries crossing the East River, the Gowanus Creek and Newton Creek Canals, and the Greenpoint Shipyards and Naval Yard all reflect the importance of maritime activities (Ment 1979:41). Industrial development centered on these western population and transportation centers. During this period Brooklyn factories grew to dominance in the glass industry with major plants in Brooklyn and Greenpoint which thrived until the technological transformations of the 1880's. Sugar refining was another major industry centered in Williamsburgh from 1850 to 1900. Also appearing and growing in importance in this period were porcelain manufactures (Brooklyn and Greenpoint 1850-1890's), oil refineries (Williamsburgh and Greenpoint 1860-1950's), cast-iron foundries (Brooklyn and Greenpoint 1845-1920's) and numerous other industries (Brown and Ment 1980). In addition small scale shops were scattered throughout the more densely occupied areas of Brooklyn.

The designation of large tracts of land as public parks was another characteristic of 19th century urban development. Fort Greene Park, located east of Brooklyn City and south of the Naval Yard, was established in 1847. The plans to lay out Prospect Park were discussed in 1860 although it was not officially open until 1867. The need for a "...rural resort, where the people of all classes, escaping from the glare, and glitter, and turmoil of the city, might find relief for the mind, and physical recreation" (E. L. Viele, Chief Engineer, Central Park, quoted in Lancaster 1972:24), was recognized by the residents of a growing industrial city. Brooklyn's governmental apparatus was housed in the civic center, constructed first for Brooklyn proper, then enlarged for greater Brooklyn which included other annexed cities in the county. Finally, by 1898 with Brooklyn's annexation into New York City, it became Borough Hall.

The Long Island Railroad which ran along Atlantic Avenue connected the City of Brooklyn to Hicksville, on Long Island, in 1837. The railroad came to function as a vector for urban expansion along which smaller, commuter communities, such as New Brooklyn, East New York and Bedford, evolved. The rest of Kings County was linked to the western, urban industrial centers by a series of roads. The transportation network led to the rural communities of Flatbush, Canarsie, Gravesend, New Utrecht, Flatlands, Unionville and Fort Hamilton. By the 1860's a

railroad line linked the incipient resort area of Coney Island with the Fulton Ferry (Miller, Miller and Karp 1979:22).

Agricultural goods flowed along the transportation arteries to bulking points at the Brooklyn waterfront and from there to markets in Manhattan. The eastern and southern rural hinterlands functioned as supply areas which facilitate the growth of the western population centers. The latter provided markets for agricultural products and supplied the farm population with manufactured goods. For these reasons, as was noted above, the relation between rural and urban communities was one of symbiosis. Each of the rural communities mentioned above has a unique history and contributed to the diversity and growth of the Borough of Brooklyn. In general, however, they can be characterized as population nodes in agricultural areas with dispersed farm houses around them. Support services such as churches, mills, schools, stores and craft shops would be associated primarily with population nodes, but may also be scattered across the country side. "Unimproved" land existed as either wooded or marsh areas. These areas provided the inhabitants with a variety of wild food resources as well as other raw materials such as fuel and lumber. Further research is required to more fully elucidate the relationship within and between the rural communities and the urban core of Brooklyn.

Records for 1860 indicate the dominance of the City of Brooklyn, with a populace of more than 266,000 which accounted for more than 95% of the county's total. By 1890 the city's population had topped 800,000 while the rest of Kings county contained a mere 32,204 (Rosenwaik 1972:59). The opening of the East River Bridge (Brooklyn Bridge) in 1883 appears not to have affected the rate of Kings County population growth, so much as its distribution. Trains crossing the bridge met Brooklyn's trolley system, which eased commuter travel and made the interior of the county more desirable as an area for residential development (Miller, Miller and Karp 1979:24). By this time Brooklyn's waterfront was a continuous line of factories, warehouses, dockyards and wharves, from Newtown Creek to Gowanus and up and down that canal. Williamsburgh and Greenpoint were centers of many industries, as discussed above, with foundries, glass, porcelain and pottery works, and oil refineries. Late 19th century "growth" industries in Brooklyn were the printing plants and breweries (Latimer 1983:24,26). Bushwick's Brewers Row was a major beer producing district with predominantly German residents and workers. By 1898 Brooklyn boasted 45 breweries (Anderson 1979:128-130).

Other sections of Brooklyn City were equally distinctive. The retail district of Fulton Street was a center for many residential neighborhoods. The Heights dotted with elaborate mansions, remained the elite district. Other wealthy neighborhoods emerged on "the Hill", in Bedford, in Prospect Park South and along the length of Bushwick Avenue. Substantial row housing to its south was occupied by Brooklyn's middle class, who made heavy use of the ferries which linked Manhattan,

Brooklyn and the Long Island Railroad. Further south and to the north were less expensive row houses and apartment complexes in which resided the working class population and recent emigrants. The area around Gowanus and to the west of Green-Wood Cemetery became the neighborhood of many of the dock workers and waterfront employees. Other working and middle class sections developed in Williamsburgh, the Eastern District and Greenpoint. Brooklyn's black population was concentrated in areas near Fort Greene and was beginning to spread eastward along Atlantic Avenue into Bedford and East New York. Brooklynites of Irish descent dwelt south of the Heights, middle class Jews from Germany formed an enclave in Bedford, and east European Jews settled in Williamsburgh. The least desirable and most deprived portion of the city was located near Fourth Avenue and Butler Street. Termed "The Patch", the section was largely occupied by squatters (Latimer 1983:34,45-48).

The rural quality, noted above, for the southern and southeastern parts of the county persisted through the end of the century. The Fulton Street El, which first ran in 1888, connected the Fulton Ferry and the Brooklyn Bridge, passed City Hall and Fort Greene to the east terminal in 1893. By 1893, the line reached to East New York (Ment, Robins and Framberger 1979:45). This transportation orientation encouraged the growth of more urbanized, residential districts in the northern and eastern areas of the county. It had a secondary effect of insulating, until the beginning of the 20th century, the more rural parts of Kings County. These farms were not, however, untouched by industrial capitalism for they had many economic ties both to the urban markets which purchased their foodstuffs and to the industrialists which supplied them with manufactured goods. By the end of the century when the county was annexed by New York City, all sectors of Brooklyn's economy were closely integrated. However, socio-cultural distinctions existed on many levels. Both aspects of Brooklyn's development require considerably more attention than has been possible here.

Research Directions

The above discussion indicates the degree to which Brooklyn's transformations during the 19th century are part of the regional, national and larger processes of change occurring in the World. Rapid urban development, the transformation from an economy dominated by rural exchange, artisanal and merchant relations to full blown capitalism, the emergence of Victorian middle-class culture, massive immigration, as well as emigration, an immense developing harbor and industrial area, a series of revolutions in transportation technology, architecture, and household gadgetry, rapidly intensifying class distinctions including wealth disparities and concentrations, and the general move of North America and New York City from a "semi-peripheral" to a "competing core" region in the "world system" are among the more salient aspects of this dynamic.

Also during the 19th century a set of newly defined built forms emerged and became part of the lives of urbanizing people. The transportation revolution allowed eased passage and shipping within and between settlements, and affected the design of streets, bridges and arteries, increased noise, smoke and public nuisances, participated in the changes in how "house and home" related to "public spaces" and allowed the emergence of other new urban forms. Public parks, and large scale amusement areas, became ideological banners, magnets and areas of conflict. New architectural forms, especially the factory, the department store and the apartment building, each with new sets of social relations, moved towards dominating much of the experience of the population, while the culturally older New York row house flourished in all its class forms.

Developing research questions that can account for the complex processes reflected in the history of Kings County must itself be a complex, ongoing procedure. Of course, research questions themselves are based in a research framework, a theoretical approach which is altered with greater understanding. But the beginning point is one of a specific theoretical approach.

We will here present two examples of research directions that can guide specific historical archaeological projects.

Example I: Transitions in industrial technologies and work-place relations.

Changes in the nature of production, with increasing mechanization and workplace deskilling can be recovered from industrial sites, and are relevant to the transformation of the working force from a craft based, skilled and semi-skilled group to an industrial proletariat. This in turn is relevant to an understanding of the relationship of ethnic identity, class and standard of living among the working class.

Such data is available in the industrial sites of Brooklyn, which include major and minor industries ranging from the early Standard Oil facilities, grain elevators, iron works, breweries, and other large scale manufactures, to the smaller scale supporting industries and crafts, such as coopering, as well as the rural industries, such as mills, which survive into the 19th century.

Example II: Ethnicity: how are ethnic groups formed?

Afro-Americans are considered a single ethnic group, yet those 18,000 or so Afro-Americans in Brooklyn at the end of the century include descendents of the slave population of Kings county, which had the largest proportion of slaves of any county in the North until 1827. Also included were the descendents of long-free Blacks from Manhattan whose experiences were radically

different from the slave population, as well as the beginnings of the migration of Blacks of free and slave heritage from other parts of the country, especially the south. Additionally, Afro-Americans in Brooklyn in 1898 were involved in divergent communities and occupations. Many were acting as part of the service population for the large recreational facilities of Coney Island and Bergen Beach, mostly as low level unskilled labor but some gaining wealth and fame as trainers and jockeys. Other Afro-Americans were living in the heart of the urbanized sections of Brooklyn, especially in Fort Greene and Bedford, the site of the earlier free Black community of Weeksville-Carrsville. And these are again in a different context from the few small black communities involved in "pariah" occupations along Jamaica Bay, such as butcher products' rendering.

Archaeological samples from each of these categories of Black community or neighborhood, including isolated Blacks in otherwise non-Black contexts, as well as occupational and economic variations within the communities would be necessary to answer archaeologically the questions about ethnicity.

If a single Black cultural form emerges in the 19th century, the questions becomes why, what factors are involved in it? Is it poverty, social rejection, or a growing political and group identity? Is it associated with other processes, such as changing occupational or family structures? These same questions need to be asked of all so-called ethnic groups in Kings county, New York and North America.

Additional avenues for archaeological research include changes in farm usage and intensity as seen in pollen cores, the archaeology of mass recreational centers, underwater archaeology amongst the hulks and refuse of the industrial shoreline, a full scale overview and devaluation of the documentary, and possibly artifactual holdings of the local historical societies of Brooklyn, full archaeological resource surveys of the park and cemetery areas, and the correlation of "neighborhoods" to material culture, and the areas of commodity acquisition, or trade networks, in the various parts of the County.

Map Discussion

1815

For 1815 it proved difficult to obtain maps that charted the population distribution and land-use patterns for Brooklyn in the exact year 1815. Statements in a number of texts, indicating that there was little change in the borough from the late 18th century through ca. 1840, suggested that it would not be inappropriate to draw on information in sources dating up to a few decades before and after the target date. It must be stressed that blank areas on the map do not indicate areas without settlement. They merely indicate areas for which adequate documentation has not been obtained or does not exist. Additional information for map land use categories follow: 2.

commercial (a windmill listed as present in 1829) 3. residential (with only a few exceptions (e.g., within the lines of Gravesend Village, always sparse, usually situated along roadways, presumably combining residential structures and agricultural/rural outbuildings) 5. Forts and Redoubts (mainly facilities from the War of 1812) 6H. Industrial (mills). 12. Transportation (ferry terminals). 15. "undeveloped" (often indicated as woods on maps (esp. map j.) Isolated out-lying buildings or other evidences of occupation may be found in these areas.

Following the land-use number there may appear an alphabetic lower case subscript (e.g., 3g or 9i). This indicates the data source.

It must be stressed that the blank areas on the map do not indicate areas without settlement. They merely indicate areas for which adequate documentation has not been obtained or does not exist.

1855

This map is a composite of an 1855 atlas showing Brooklyn City and the Navy Yard in great detail and an 1852 map which covered the entire county in much less detail. It should be noted that the differences in the data base create problems for interpreting the significance of the results in any but a general sense. All cities and villages within the county were identified. Areas between these occupations were, for the most part, devoted to agriculture. This designation should be interpreted to represent scattered farm houses, and probably, support services (churches, mills, schools, etc.) which may not have been recorded on a county scale map. Two "unimproved" land use patterns were identified: wooded areas, and marsh areas. It should be emphasized that these areas could and probably did provide the rural population with a variety of wild food resources as well as other raw materials, such as fuel and lumber. Therefore, they should be considered as a vital part of the land use pattern. Annotations to the map follow: BG = Bushwick-Green; the industrial complex #6 nearby was titled M. Kalbfleisch Chemical Works. BCR = Bushwick Cross Roads, the recreational facility nearby (#8) was a hotel, (#12) was the Cypressd Plank Road. Close to the Brooklyn Navy Yard, the institutional complex (#7) was a hospital. In Prospect Park, the cemetery (#9) was called Friends Cemetery, the and the institutional complex was (#7) a penitentiary. Close to Flatbush there are four institutions (#7) and Insane Asylum, Alms House, County Hospital and Nusery. Also a cemetery (#9), Galilee Cemetery and a body of water labeled Paerdeger Pond. Close to Canarsie there is an Industrial complex, (#6) called Vanderveers Grist Mill and a mall or public meadow grouped with parks (#8) called Kimballs Park. Close to Sheephead Bay there were three hotels (#8), and two hotels on Coney Island (#8) called the Roger's and the Wyckoff's.

1898

The 1898 map was based entirely on the Hyde 1898 Atlas. This Atlas indicates every standing structure and its material. Many businesses are indicated by name, thus allowing recognition of business and industrial areas. Also indicated, but not recorded, were streets which had been opened. Open streets were usually paved and graded, thus they were significant alterations to the landform. The limit of open streets was not recorded on this map. Agricultural usage was inferred and could not always be clearly established from the map. Many areas designated as undeveloped refelct

The settlement pattern of Kings county in 1898 shows several major landuses. Industrial and commercial dockside industries are massed along the east river from Newtown creek to Gowanus and up those waterways. Numerous support crafts and industries are found with working and some middle class residences in areas adjacent to the waterfront, and extend into central Williamsburg and Red Hook and Bushwick and into South Brooklyn. Other scattered industrial sites are found in both built up and undeveloped lands. Solid regions of residential occupation are found from Brooklyn proper east to East New York and south into Park slope. The area south of Atlantic avenue and east of Prospect Park is rapidly being developed at this time, and within a decade will be as densely built up as the sections to the north. The central civic and commercial section of the County extends along Montague Street, with secondary comercial centers in Williamsburg and other areas. South of the built up area, and already scattered with urban block development, are the last isolated rural towns of Brooklyn. Canarsie and Flatlands are still mostly rural, though both are affected by the growing resort areas near them. Gravesend, old Sheepshead Bay, and New Utrecht are more directly affected by the Coney Island complex of resort and rescreational facilities, with hotels found along many of the older thorough fares, near the railroad terminals, and along the new roads, such as Ocean Parkway. The rail and electric street car network covers virtually all of the County, except for some of the very small hamlets found along Jamaica Bay. This is the one area which is still mostly undeveloped, though some development attempts can be seen on the map; and land filling has already occured (though this is not been indicated).

MISCELLANEOUS NOTES FOR THE 1898 MAP OF BROOKLYN

2/1 - CLUSTERS OF GREENHOUSES, ASSUMED TO BE FOR COMMERCIAL FLOWER GROWING. NOT ALL OF THESE AREAS INDICATED.

8 - WITHOUT A NOTATION 8 IS USUALLY A PARK OR OPEN RECREATIONAL AREA.

8H - HOTELS

8/2 - BUILT UP AMUSEMENT AREA CENTERS, INCLUDES STORES, SMALL HOTELS, THEATERS, ETC.

12X - INDICATES RAIL ROAD YARDS AND TERMINALS.

12 - CIRCLED ARE FERRY TERMINALS.

15 - USUALLY INDICATES AN AREA OF SLIGHT BUILD UP, CHARACTERISTICALLY A FEW FARM HOUSES, WITH A STREET GRID LAID DOWN AND LESS THAN 10% OF THE HOUSE LOTS WITH HOUSES ON THEM. THE ONLY TRULY EMPTY LANDS ARE THE AREAS DESIGNATED 15 ALONG THE EAST RIVER WAREHOUSE, SHIPPING, INDUSTRIAL STRIP, ESPECIALLY BY NEWTOWN CREEK, AND THE AREAS OF WETLANDS AND MEADOWS (15A) FROM CONEY ISLAND TO NEW LOTS.

15/3 IS AN AREA OF WITH BETWEEN 10 AND 25% OF LOTS WITH CONSTRUCTION.

THE TRANSITION FROM 15 (LOW DENSITY OF BUILD UP) TO FARMING, LITTLE OR NO GRID PLAN DEVELOPMENT, IS OFTEN A GRADUAL OR PATCHY ONE.

IN 1898, MUCH OF BROOKLYN WAS BEING RAPIDLY DEVELOPED WITH LEAPFROGGING OF BLOCKS AND AREAS OF DEVELOPMENT, THUS THE PATCHWORK OF 15 AND 15/3 IN SOME AREAS.

THE DISTINCTION BETWEEN 16 (RURAL CLUSTERS) AND SMALL OUTLIERS OF LARGER BUILT UP COMMUNITIES, SUCH AS THAT NORTH OF THE TOWN OF GRAVESEND, IS NOT ALWAYS CLEAR. 16 IS USUALLY USED FOR VERY SMALL AGGLOMERATIONS OF HOUSES, A FEW DOZEN AT MOST.

TWO TYPES OF LAND-USE ARE DEMARCATED BY HACHURES ON THIS MAP. PRIMARILY RESIDENTIAL AREAS ARE MARKED BY SINGLE HACHURES, WITH INTERNAL AREA DISTINCTIONS INDICATED BY DASHED LINES FOR AREAS WITH, FOR EXAMPLE, A COMBINATION OF RESIDENTIAL AND INDUSTRIAL (3/6). INDUSTRIAL AREAS AND SITES ARE DEMARCATED WITH A CROSSED HACHURE, ALSO WITH DASHED LINES FOR INTERNAL VARIATION.

THE NEIGHBORHOOD AND LOCAL VILLAGE DESIGNATIONS ARE CONTEMPORARY WITH THE PERIOD FROM THE 1880S TO THE TURN OF THE CENTURY. THE TOWNSHIPS (UNDERLINED ON THIS MAP) HAVE NOT BEEN INDICATED BY THEIR POLITICAL BOUNDARIES, WHICH HAD CEASED TO EXIST LEGALLY WITH THE INCORPORATION OF KINGS COUNTY AS THE BOROUGH OF BROOKLYN.

THESE DESIGNATIONS ARE BASED ON THE GUIDE MAP FOUND IN APPLETON'S DICTIONARY OF NEW YORK AND ITS VICINITY, 1884, AS REPRODUCED IN LATIMER 1983:15, AND FROM THE MAP OF KINGS COUNTY, 1892, FROM HAROLD COFFIN SYRETT'S THE CITY OF BROOKLYN, 1865-1898: A POLITICAL HISTORY REPRODUCED IN MILLER, MILLER AND KARP 1979:21.

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Introduction

Several archaeological sites in Manhattan with 19th-century components have been excavated. However, since they lie mainly at or south of Fulton Street in lower Manhattan¹, little archaeological material has been retrieved which is applicable to the study of the borough's general settlement patterns or land use. Excavated sites, such as Stadt Huys, 64 Pearl Street, Old Slip, Hanover Square, 175 Water Street, Telco, Schermerhorn Row, and 209 Water Street, demonstrate the complexity of this land use. Both completed site reports and those in progress suggest a variety of issues that still remain to be addressed. For example, entire neighborhoods that developed between 1815 and 1898 have yet to be tested. Expansion of city services to developing areas, and the differences between their availability to rich and poor or commercial and residential neighborhoods, is another issue. Changes in existing neighborhoods brought about by expanded transportation facilities and fluctuating real estate markets, to name but two factors, are also valid research issues.

To organize the data so they may generate useful research questions, the 19th-century development of Manhattan has been arbitrarily divided into four time periods: 1815-1829; 1830-1854; 1855-1879; 1880-1898. Each has a detailed map and an accompanying text.

¹Sites with 19th-century components excavated north of Fulton Street include the Hamilton Fish House in the East Village and Sheridan Square in Greenwich Village.

Peace after the Revolutionary War had restored both the European market and the development of local manufacture and shipping (Blackmar, 1979: 136). The core of the city's businesses and residences had expanded to the point of requiring six major markets below Chambers Street and a seventh market at Catharine Slip, where the new ferry to Brooklyn departed. Traffic of both goods and people was continuous in and out of Manhattan. At this same time however, such growth caused problems of overcrowding, water shortages, sanitation complications, fire disasters and crime. The yellow fever epidemic, at the turn of the century, literally forced people out of lower Manhattan and into surrounding districts e.g. Greenwich Village, Bloomingdale Village and Haarlem Village. (Morgan, 1982:10)

By 1800, New York City's population reached 60, 529 (Blackmar, 1979: 132) and it is during this period that the city began to have difficulties generic to urban settlement:

The problems associated with town life prior to the 19th Century were small enough and simple enough to be approached on an informal voluntary or cooperative basis. But the emergence of the city changed the pattern of life. (Calhoun, 1973: Introduction)

Such was the first decade of the 19th Century. The city, serving its multiple functions to increasing numbers of people, was rapidly changing. New lines of transportation were opened. Boats left from both the East and West side of Manhattan bound for Europe, the Far East as well as Connecticut, New Jersey and Albany. (Stokes, Vol. III: 477) Trade networks improved with the building of the Erie, Delaware and Hudson, Morris, Champlain canals. Inland areas could now be reached via new roads, creating new markets for obtaining goods and resources to be fed to and through New York City (Albion, 1970: 10; Baugher, Janowitz, Kodak & Morgan, 1982: 23).

The city's speedy growth and expansion in this time period came to a grinding halt, however, as events surrounding the War of 1812 caused a depression. Blockades of European goods and foodstuffs severely hurt the port industry. In spite of this, however, population grew to 95, 519 (Rosenwaike, 1972: 18; Baugher, Janowitz, Kodak & Morgan, 1982: 23).

By 1815, the city limits had reached 14th Street on the West side and about 6th street on the East side of Manhattan, thereby incorporating Greenwich and Bowery Villages into the "City Proper." Slowly but surely, long distance trade and local businesses were re-instated. New York assured itself of continued exchange by enacting the Auction Law of 1817, "which was designed to secure final sales of all goods put up for auction." (Albion, 1970: 12; Baugher, Janowitz, Kodak & Morgan, 1982: 23-24). The following year marks the opening of the TransAtlantic Packet Service which brought a steady flow of immigrants and goods into the city (Telco Report-Balliat Contextual History, 1981: 14)

By 1820, the city in its urban form was established, but the scheme, the plan was as opaque as ever. One ^{could} detect certain neighborhoods; areas of specific nationalities, of class; areas of certain businesses and/or factories--but everywhere residences and shops were sprinkled on every street, in backyards and alleys. In addition to the shipping industry's occupying both East and West shores of the island, by 1825, there were 500 mercantile houses, 12 banks with a capital of 13 million dollars and 3000 new buildings under construction. There were, at this time, no vacant houses in the city. (Stokes, 1929, Vol. 111, 517).

In contrast to the booming business and building by urban bourgeoisie, merchants and entrepreneurs, there was a growing class of wage-earners who now required their own place of residence apart from the place of production and commercial activities. This marked the beginning of what James Vance has called the "formation of a generalized housing market." (Blackmar, 1979:136) The city had again, changed, but this time, internally, organizationally. At its edges were still factories and shipyards, while every other part contained small shops, small factories and residences. But now, each place of work that once had four to five employees now had twelve, fifty, hundreds of workers in order to accommodate the fast pace of market growth (Warner, 1972: 77; Morgan, 1982: 10). Unable to afford single house rents, the wage-earning population,

developed their own strategies of rent sharing--more intensive occupation of houses--and of mobility--moving around to find lower rents...Boarding, the provision of lodging and meals, offered the first systematic multi-tenant housing solution. (Blackmar, 1979:140)

And so, residential streets of varying wealth and character were both clustered and scattered throughout the "city proper" from the Battery to Washington Square. Land speculation and building had already begun beyond these limits, while those small villages, already up-island, were beginning to exceed their bounds.

1827: Pearl Street was dominated by wholesale and dry goods merchants. Wall Street and vicinity held the Customs, banks, insurance brokers, the Post Office and the Daily papers, their printers. Broadway, for two miles, was the principle street for retail shops, hotels, and churches. Some factories and warehouses remained in the lower part of the city while others moved on into less populated areas.

(Stokes, 1929, Vol. 111, 520-21).

In the next decade, the city grants permission to build the Harlem Railroad from Chambers Street to Harlem. Prior to this, New Yorkers depended upon stages, omnibuses and boats. (Stokes, 1929, Vol. III, 676; Harris, 1983, pers. comm.) These new railways promised almost unparalleled technological and economic innovation. The city would, again, change.

end

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Manhattan 1830-1854 (Wendy Harris)

During the years 1830 to 1854 Manhattan evolved from what Stokes has termed "...an overgrown town " into a commercial and industrial metropolis. The city successfully weathered a series of financial setbacks (depressions in 1837 and 1841-2) as well as competition with its commercial rivals (Boston in particular) and by the 1850's achieved "...an unprecedented dominance over the rapidly expanding American economy" (Spann 1981:15). The form and scale of many of the city's activities such as trade, transportation, manufacturing and banking, were transformed as were the lives of its inhabitants and its physical landscape.

The early 1850's saw not only New York City's link up with the upstate railroad lines but also the inception of regular trans- Atlantic steamer service (Spann 1981:14-15). New York City and its suburbs now had 650,000 inhabitants (thus constituting the largest market for producers in America) and by virtue of its newly attained position in the nation's transportation network had become the great exchange point between Europe and the United States. Spann observes that "...between 1840 and 1860 when American ocean tonnage increased more than six times, New York's share of that tonnage rose from 38% to 74%" (Spann 1981:15). The shift away from clipper ships and the East River docks with their historic links with foreign commerce to the west side's steamship and associated railroad terminals presaged the beginning of the decline of the east side port (see Rockman et al).

Although the city had long been a banking center, increasing amounts of capital was becoming available for investment, especially on the heels of the 1850's railroad boom. Spann (1981: 403) notes that increasiiingly "...New York City was the dominant industrial center for the region. Between 1840 and 1860 investment in manufacturing there had increased by nearly 550 percent." He goes on to observe that "the city was especially hospitable to light manufacturing of a highly varied sort. The reconstruction of the city in the 1850s included the erection of many buildings designed for light industry."

Other physical changes occuring during these decades and associated with industrialization include the appearance of class segregated neighborhoods (Blackmar 1979:144-145). America's industrial working class was just beginning to emege in the 1820s and 1830s. In New York City there was no attempt to meet their housing needs or those of the great numbers of European immigrants until the late 1840s when the first specifically designed multi-tenant housing was constructed (Blackmar 1979:145). Ultimately urban form in mid- nineteenth century Manhattan reflects the forces of the real estate market. Space and capital were limited. While new commercial areas both uptown and downtown as well as elite housing uptown were developed "...downown, the poor inherited the abandoned homes of the uptown moving rich, where they were packed into

cellars, one room apartments, and jerry built backyard tenements" (Spann 1981:146).

Characteristic of Manhattan's development between the 1830s and 50s is the increasing differentiation between neighborhoods as well as the steady uptown spread. Whereas the city proper tapered off at about 14th^{St.} in 1825, by 1853 it extended much further northward. Stokes (III:676) observes that by this latter date all streets up to 42nd St, were regulated and paved and that above this point all characteristics of a city disappeared. What is now uptown Manhattan then contained scattered dwellings, factories, farms, estates and a series of villages including Yorkville, Manhattanville, Bloomingdale Village and Harlem. The densely settled areas of Lower Manhattan (below 30th St.) were ringed by shipyards and wharves on the east side and scattered factories, railroad yards and wharves on the west side (Dripps Map 1850). Within the city proper the central business district lay below Chambers Street. Canal Street, the Bowery and Broadway represented the city's main shopping districts, the latter being the most "fashionable." The remaining areas contained residential neighborhoods and in general ~~the~~ working class housing tended to be located on the city's east side while elite and/or single family housing dominated the city's west side and more recently developed northern portions (Stokes III:520-521, 676).

MANHATTAN circa 1850

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MANHATTAN 1855-1879 (Joan H. Geismar)

Between 1855 and 1879, advances in building technology and transportation, combined with increasing native and immigrant populations, and the ever-present profit motive, spurred Manhattan's horizontal and vertical growth. The city was home to both the very rich and the very poor, and the workplace for both urban and suburban residents. These factors, among others, shaped many social and physical aspects of city life.

The brief description of technological and social data presented here, and their suggested ramifications, is meant to act merely as a general framework, or alert, and to suggest research guidelines for archaeological investigation¹. This information is intended as an accessory to the composite map of this period which is based mainly on Dribbs' 1875 section map of the city and Bromley and Robinson's 1879 New York City atlas. Information was also recovered from contemporary guidebooks cited in the text, and from such historical sources as Spann (1981), Still (1956), Stokes (1915-1928), and Cook (1869).

Information about this time period has been recovered and reported from several archaeological sites in lower Manhattan, among them Telco (Rockman et al 1983) and 175 Water Street (Geismar 1983). The former suggests that changes in the workplace occurred in this time period; the latter provided informa-

¹ It should be noted that many variables related to the city's growth are not discussed here. For example, the early and ongoing process of landfilling along the city's shoreline also occurred from 1855 to 1879 above Fifty-first Street on the Hudson and above Thirty-fourth Street on the East River. In fact, the city's modern bulkhead line, apparently established in 1871 (Stokes V: Landmark Map), dated from this time period.

tion about the time lag in the extension of city services, such as piped in water and sewage disposal, to the city's commercial districts. In addition, data from the 175 Water Street site suggested archaeological criteria for distinguishing between 19th-century domestic and commercial deposits, and, finally, they provided the basis for an archaeological model for determining increasing commercialism and urbanization in 19th-century American seaports. Since the archaeological data are scarce for most of Manhattan, the following report does not focus on sites, but on many of the social factors that provided a framework for the deposition of archaeological material from this period.

Before and after the Civil War, Manhattan's northward expansion, much of it made possible by the technology developed during the war, continued. At this time, the heart of the city's commercial district was located below Canal Street. However, at least some mixing of domestic and commercial properties occurred throughout the city, including the residential areas along Fifth Avenue. This was particularly true of those areas surrounding parks or squares in the southern portion of the avenue. Here residences were interspersed with, or being replaced by, commercial establishments such as stores and hotels (Viele 1879 quoted in Stokes V:1969). But it was in the dock-area slums that living and commerce mingled most intensively².

²Along the city's river shores were found many commercial activities. Shipyards were located along the East River and lumber yards were situated on the Hudson (Stokes V:1898). Both shores, however, were the site of commerce in fish, oysters, and produce, while drydocks, oil factories, and storage houses were located below Grand Street on the East River (Macoy 1876:74-75). Iron foundaries and gasworks were some of the newer shore-side commercial activities developing in this period.

By the 1860s, in addition to the railroads established earlier and the numerous ferries that linked the city to New Jersey and Long Island, ground transportation within the city improved. Omnibuses, stages, and street cars opened Manhattan's outlying areas to development. An elevated train, constructed in 1867, was improved and expanded during the 1870s when it connected Battery Park to Central Park. The opening of Grand Central Terminal in 1871, and improvements to railroad tracks, trestles, and tunnels by 1875, encouraged the growth of the upper city and Harlem (Stokes III:759-760).

The progression northward has been chronicled by many contemporary observers. It was noted in 1861 that the compact town extended north to Fifty-second Street (Stokes V:1898), and by 1876, the buildings and streets extended five miles from the Battery, or just south of Central Park. At this time, development continued irregularly for four miles to Harlem on the east side; on the west, it proceeded to Sixtieth Street, and then less compactly to above Bloomingdale where it was open to the suburban districts of Manhattanville and Washington Heights (Stokes V:1963; see also Baugher-Perlin et al 1982:Fig.3). Development to the east and west of Central Park was unequal: Although the streets were laid out on its western length, in 1879, construction found east of the park was not paralleled on the west (Viele 1879 quoted in Stokes V:1969).

Improved transportation within and out of the city not only opened the upper reaches of Manhattan to development, it also enabled the middle class to migrate to the developing suburbs. Because of these improvements and the proposed

Brooklyn Bridge, it was anticipated in the 1860s that the removal of the middle class would soon leave only the rich and the poor as residents of Manhattan (Still 1956:175).

In addition to the northward urban spread in this time period, new technologies and changes in concepts of living and work spaces occurred. For example, multi-family apartment houses for the middle class, rather than single family dwellings, were constructed by 1875 (Still 1956:176). This was in contrast to the slum tenements originally intended for single family use but which often housed one family per room (Spann 1981:110; Still 1956:130), or the three-room tenement apartments promoted in the 1850s (Spann 1981:144-145). Moreover, the introduction of the elevator in 1870, as well as the use of more massive constructions, encouraged an upward trend (Still 1956:206), and by 1875, New York City had larger, multi-storied buildings. The clock tower of the eleven-story Tribune building, completed in that year, soared to height of 285 feet, or about one foot higher than the Trinity Church spire completed in 1846, formerly the city's tallest construction (King 1894:618,342). The heights of new buildings were limited only by the capacity of masonry to sustain their weight (Still 1956:206). In the next decade, steel infrastructures would remove these limitations.

From the 1860s, paved streets, sewage disposal, and gas lights were amenities found in many sections of the city. An 1875 guidebook cites 291 miles of paved and 169 miles of unpaved city streets; it also notes 275 miles of sewers, 340 miles of Croton Water pipes (a new reservoir was opened in Central Park in 1862), and 19,000 gas-lit street lamps (McLaughlin 1875:56,332-335). These city services were apparently available in the

wealthier residential areas and, although the sewage system was inadequate almost from its inception (e.g., see Spann 1981:134), theoretically life in the city was becoming more comfortable--at least for the rich. For the poor, it was a continuous submergence in squalor.

Slum areas, located mainly on the city's periphery along the East and Hudson Rivers, proliferated throughout the city (Spann 1981:148). For example, leaking gas tanks, the fuel source for the city's street lights and other services, gave rise to the "Gashouse" district, a slum between Fourteenth and Twenty-third Streets and the East River (Spann 1981:120-121). However, the most notorious was the "Five Points", a long-established slum near City Hall (see "X" on map). It was in this area, still squalid in the 1860s (Still 1956:176), that many of the country's newest immigrants began life in New York City. In the late 1870s, Chinese and Italian sections were established here, the former spreading into Mott Street (still the heart of "Chinatown"), the latter here and in the Wooster-Spring Street area on the west side and Crosby and Baxter Streets on the east side (Appleton 1880). New immigrants created a mix of foreign elements in the Five Points; here were found the Irish, Polish, Italians, and Chinese "together with impoverished white and Negro natives". (Still 1956:130). By the late 1870s, although the immediate Five Points area had been cleaned up somewhat (Appleton 1880:85-86), the slums still spread on the side streets beyond it.

The intensive immigration that began in the 1840s had swelled New York City's population, and on the eve of the Civil War, as

had been the case in the previous decade, 48 percent of the city's population was foreign born and predominantly Irish (Still 1956:129).

By this time, a large German segment had established their own "Kleinedeutschland" east of the Bowery, between Houston and Fourteenth Streets, a solidly German area through 1879 and later. As mentioned above, the Chinese and Italians, too, had established recognizable enclaves by the 1870s; of the large ethnic groups in New York at the time, only the Irish, the first to arrive and the largest of all, had not established a distinct community. Instead, they apparently lived with other immigrants and the native poor in deteriorated sections of the city; these slums included "Dutch" (German) Hill at Fourteenth Street and First Avenue, and "Shanty Town" from Fortieth to Eightieth Street along the Hudson, a mix of German and Irish immigrants living as rag pickers and cinders gatherers or stable workers for the horse-railway companies (Still 1956:130). The poor Irish also built squatters' huts on undeveloped lots between the fine houses emerging along Fifth Avenue, as well as on the semi-rural swampy and rocky wasteland that was to become Central Park. Here, before the land was transformed into a bucolic ideal, lived thousands of Irish squatters who maintained kitchen gardens and kept poultry, pigs, and cattle (Spann 1981:168).

The creation of Central Park to a degree illustrates the commercial, physical, and social forces in motion in New York City from 1855 to 1879, virtually the duration of the park's construction. It also suggests the volatility of urban dynamics.

In a sense, Central Park was both a cause and an effect of urban expansion. Social awareness anticipated the city's increasing need for a rural respite from urban development as well

as for expansion and stabilization of its elegant residential area (Spann 1981:164-168). The park site, which had little to recommend it except what it would become to the city and to the property holders adjacent to it, required a technological skill as well as an esthetic and political sophistication to plan and execute it. All of this was apparently available to Olmstead and Vaux, the park's architects, and the Park Commission set up by the state to implement the project. Of the \$5,169,356.90 needed for the project (the cost estimated in 1869), approximately five million was acquired through the city with the remainder paid by the landowners adjacent to the park who would benefit from their increased property values (Cook 1869:22). The city, too, would benefit since revenues from the inflated land values would ultimately cover the initial price of the land (Spann 1981:167-168) and then some; again, the profit motive influenced urban development.

Today, archaeological investigation of the park area would require not only the consideration of the park itself, but also of the social and material effects of its creation. Its development helped promote the northward expansion of luxury homes along Fifth and Madison Avenues and, although more slowly, along the west side as well. It spurred the development of city transportation to make the park and its environs more accessible. In addition, as noted earlier, its creation displaced thousands of squatters. Obviously this displacement disrupted the rural, and to a degree self-sustaining, existence of this poor immigrant segment of New York's population and it may have added to the crowding and squalor of the tenement slums sought by these dis-

placed families and individuals. Ultimately, the creation of New York's Central Park brought benefit to many, monetary profit to some, disruption to others, and created a new and stable area of development; in sum, it altered the face and lifestyle of the city.

SUMMARY

The technology, the motives, the interactions, and the effects of the development of New York City from 1855 to 1879 were an outgrowth of what came before and were predictive of what was yet to come. Land was created, neighborhoods changed, vertical as well as horizontal expansion occurred, and expanding immigrant and native populations influenced the cultural and developmental needs of the city. The very concept of the work place and home was changing. The archaeological manifestations of the culture and development of this period are tied to all these factors.

In addition to the building history of any given site, archaeological data should be considered within the framework of their site-specific social and physical setting as well as their relation to the city as a whole. In this manner, the material manifestations of lifeways and social forces perhaps not recorded may be recovered, and a more complete understanding of these complex factors will be possible.

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(and the period 1880-1898)

Nan A. Rothschild

According to Stokes, the decade beginning in 1880 was one of relative prosperity, marked by the continuation of the city's need for more money in its budget, especially to spend on parks and docks. The Small Parks Act of 1897 created a number (6) of parks scattered throughout the city. A continuing influx of immigrants brought on attempts to regulate the flow of immigration (at the Federal level) and increased the tendency for ethnic neighborhoods to become enclaves. Finally, political-economic changes brought about the integration of the city with its surrounding cities, all of which became boroughs with the charter enacted in 1898. Stokes suggests that this integration was in part an attempt to wrest some of the control of the city from the New York State Legislature and achieve more self rule.

In terms of the spatial distribution of land uses, this period continues the tendency noted by Spann for the earlier period of a general moving uptown of the population. Downtown Manhattan was the center of commerce, and a place where the poor lived. The peripheries of Manhattan (along the Hudson and East rivers, up to the 14th St. line on the Hudson and the 10th St. line on the East River) were used for residential and commercial uses. A series of markets and warehouses, associated with the distribution of goods, were located on the east and west sides, near the rivers. Another use of peripheral land, along the east and west, and to the north, was for large institutional structures, also found on the islands in the East River. Peripheral land was also occupied by the construction of the railroads.

This period was one of change for city colleges and universities: City College acquired the land it is presently on, and became the City University. Barnard was chartered in 1889, and New York University acquired its Heights campus. The middle of the island was where the middle class lived, while the wealthy were concentrated especially on Fifth Avenue, around 34th Street and Sixth Avenue, and around Times Square.

The water system built by the Croton Aqueduct continued to develop; water was let into the big new double reservoir in Central Park (between 86th and 96th streets). The land for the new NY Public Library at 42nd St. and Fifth Avenue was the site of the former reservoir. This period was also one in which the first skeleton construction, allowing the building of tall buildings, began.

Much of the new construction in this period was designed to make the movement of people and goods around the city easier. The Harlem Speedway went along the Harlem River, and the Central Bridge allowed traffic to get to the Bronx at 155th St. Plans for an underground transit system were begun, as was a plan for a large terminal, with a tunnel under the Hudson and East Rivers, to be part of the Pennsylvania system. Competition as to who should build surface transit lines and where they should run was fierce at times, according to Stokes. The Hellgate and Ambrose channels were widened and deepened, the Brooklyn Bridge terminals were improved, and the city decided to get control of all waterfront land (on the East side to Grand St., and on the West to 58th St.) then in private hands. More than 5 miles of new wharfage was built during the period.

Summary of map

The tip of Manhattan, as far north as Spring and Broome, was the location of big business, governmental buildings (the Customs House, the Sub-Treasury, City Hall, the Post Office, Courts), two early and important churches (Trinity & St. Pauls), and the major market, the Washington Market.

Other markets were on Catherine St., Centre St, Canal and West St., Essex St. and Gansevoort St..

Major industries were gas works, lumber and coal yards, iron works, breweries, cigar, furniture and pencil factories.

Recreational facilities, besides parks, included the opera, the Harlem Casino and some new hotels.

Freight yards, shipping stations and railroad depots were all over the city. People still mostly crossed the river by ferries, both to the east and the west.

Institutions included orphan's and indigent homes, hospitals, colleges and churches. The only large cemetery was Trinity Church in upper Manhattan, and the block in lower Manhattan occupied by Trinity Church and graveyard.

(shaded red on the map)
Most of Manhattan was residential, with its mix of churches, shops, and other land uses (present as less than 10%). North of the northern boundary of Central Park (110th St.) in chunks, and north of 155th St. solidly, residential areas are less densely settled (shaded in blue), occupying 10% or less of each block.

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WORKING DRAFT

The Borough of Queens

by

Anne-Marie Cantwell, Diana Rockman and Arnold Pickman

Introduction

Queens was one of the original counties of the Province of New York, organized by act of the Colonial Assembly in 1683. Its original boundaries included what is now Nassau County. In 1898, Queens was consolidated into the City of New York as a Borough, at which time it was separated from Nassau County. Queens, encompassing more than 110 square miles, is the largest of New York City's five Boroughs (Hazelton 1925).

Queens is located at the western end of Long Island. The main portion of the Borough is roughly pentagonal in shape, and it is bounded on three sides by water: the East River, Long Island Sound and Jamaica Bay. Its eastern boundary is Nassau County and it is bounded on the southwest by the Borough of Brooklyn (Kings County). Queens also includes the area known as the Rockaways, a barrier beach separating the Atlantic Ocean from Jamaica Bay, which provides the Borough with an Atlantic Ocean shoreline. More than half of the marshy islands in Jamaica Bay are also within the borders of Queens (see Figures 1 and 2).

Two terminal glacial moraines cross mainland Queens in an east-west direction, with the southern portion of the mainland made up of glacial outwash plains. The Rockaways, on the other hand are an accretional barrier island formed in the post-glacial period. During the study period, the northern shoreline of Jamaica Bay consisted of a wide expanse of salt marsh.

However, most of the marsh has been filled-in during the 20th century for the construction of Kennedy airport and for other purposes.

From the time of the first European settlement in the 17th century until 1815, the beginning of our study period, Queens retained a predominantly rural and agricultural character. The original County encompassed five separate townships: Newtown, Jamaica, Flushing, Oyster Bay and Hempstead. These townships were originally settled predominately by Englishmen while Queens was still part of Dutch New Amsterdam in the 17th century. Many of these settlers migrated to Long Island from the English - ruled New England colonies because of religious differences. When Queens was divided at the time of incorporation into New York City, Hempstead and Oyster Bay were included in the new county of Nassau...

As contrasted with its rural, agrarian nature at the beginning of the 19th century, Queens became a relatively densely populated, urbanized borough integrated into what became one of the largest cities in the world. In the development of Queens during the study period (1815-1898), we see this trend already under way. Therefore, the study of Queens during this period provides an opportunity to study the processes of urbanization.

If we refer to Figure 1, a land-use map adapted from Dripps (1852) we see much of the agrarian nature of Queens still intact in the middle of the 19th century. In contrast, Figure 2, based on Hyde (1897) shows the process of urbanization well under way, with a much larger portion of Queens being densely settled. Therefore, the process of urbanization can be seen to have its roots in the second half of the 19th century.

For the purposes of examining urbanization in Queens we have identified several interrelated factors which contributed to this process. These include changes in agriculture, transportation, immigration, industry, real estate development, and resorts and recreation. It should be stressed that these six factors are by no means the only ones which can be studied, nor do they necessarily completely account for the very complex process of urbanization. Indeed, urbanization is not the only research topic which can be approached through the study of 19th century Queens. Rather we have chosen this process as just one suitable framework for research.

19th Century Queens

In the first half of the 19th century, a small area along the East River, in what is now Astoria, was a commercial/industrial area that had developed around the Manhattan ferry terminal at Halletts Cove (Thompson 1843:149-150). However, the remainder of the study area, in common with much of the rest of Long Island, remained rural and agricultural.

During the 19th century a number of qualitative and quantitative changes took place in Long Island agriculture that can be associated with the urbanization of New York. A 19th century source (Munsell 1882:45) notes that

Corn, wheat, rye, oats, flax, wood for fuel, fat cattle and sheep were for nearly two hundred years, or until the beginning of the nineteenth century, the staple products of the island, and the chief source of income.... Since the advent of the present century and within the memory of many now living, radical changes have been made in the system of agriculture, in the crops produced, fertilizers applied, machinery employed, domestic manufactures and manner of living. There are...a few localities in Queens county in which, from their peculiarity of position, primitive farming is still followed....With the growth of New York and Brooklyn grew the demand for vegetables, milk, hay, straw and such articles of a perishable and

bulky nature as cannot be profitably transported long distances. Hence we see that the area necessary for their production has extended, not only eastward over nearly two counties, but the country for miles around every harbor which indents the shores of Long Island, as well as near every depot of its railroads, has been put under contribution to supply the demand. Consequent upon this change the product of cereals is greatly reduced, and stock-raising is entirely abandoned as a source of profit.

Text continues on next page....

Thus, there was both a quantitative increase in the demand for Long Island's agricultural products, which was related to New York City's increasing population, as well as a qualitative shift in demand, from cereal grains and livestock to perishable agricultural products. Partly in response to these changing transportation needs, the railroad system was begun on Long Island. Prior to the installation of the railroad, Long Island's farmers were dependant on an inadequate road system and on shipping from various points on Long Island (such as Flushing in Queens) to get their goods to market. The first segment of the railroad was put into operation between the South Ferry in Brooklyn and Jamaica in Queens in 1836. By 1844, the railroad had been extended to a total length of 95 miles, to Greenport in Suffolk County. Subsequently, branches were opened to serve other Long Island communities, including Flushing and Far Rockaway in Queens (Munsell 1882:44).

Although the railroads were developed partly in response to the new needs of the growing New York metropolis, they themselves subsequently served as a focus for community development within Queens. As Munsell pointed out (see above), agricultural centers formed around the railroad stations. Businesses and industries also developed in these areas, and commercial hotels were built and expanded to serve the needs of travelling merchants and farmers on their way to and from New York City. A comparison of Figures 1 and 2 shows the development of a densely settled corridor along the route of the main line of the railroad.

The communities here include the 19th century villages of Woodhaven, Richmond Hill, Jamaica, Hollis, and Queens Village.

In the 1850s, the railroads, in addition to serving as a conduit for transporting agricultural products into New York, also began to serve as a conduit for the dispersal of New York's growing population into Queens. This new population was made up largely of Irish and German immigrants, who came to New York as a result of famine and political unrest in western Europe in the late 1840s. This influx dramatically changed the ethnic composition of many Queens communities. For example, "Middle Village, which was English in 1840, was wholly German in 1860" (Seyfried 1982:38). These immigrants found employment in the businesses and industries developing in the new communities as well as in the operation of truck farms.

Most of the industrial development of Queens took place in the second half of the 19th century and was largely confined to the western portion of the borough. More specifically, this area was bounded by Newtown Creek, the East River, and the western portion of Long Island Sound. Major industries included those associated with the shipping industry (such as dry docks and marine railways), fruit and vegetable canning, pottery manufacturing, rope and twine manufacturing, oil refining, varnish and paint manufacturing, foundries and machine shops, and other miscellaneous manufacturing activities (Munsell 1882 *passim*). Also notable were the substantial numbers of nurseries, especially in Flushing (Munsell 1882).

The influx of immigrants also created new opportunities for capitalist entrepreneurship. Seyfried points out that "occurring almost simultaneously with the arrival of the Irish and Germans around 1850 was the appearance of a new breed of entrepreneur - the professional land developer" (1982:38). A large number of communities were developed as entrepreneurial ventures in the decades immediately preceding and following the Civil War. These include Winfield (1854); Melvina, Columbusville, and Maspeth (1852-53); Corona (1854); Long Island City (1854); Glendale (1868-69); Richmond Hill (1869); Queens Village (1871); Bayside (1872); Morris Park (1884); Ozone Park (1882); Hollis (1885); Ridgewood (1881); and Elmhurst (1896). Some of these, such as Bayside and Queens Village, had earlier been crossroad hamlets, while others, ⁵ such as Richmond Hill, were communities planned from their inception by land developers. In addition, the "German Settlement" in Astoria was laid out by the Cabinet Makers' Union in 1873-74 (Seyfried 1982:38). With the growth of the trolley system in the late 19th century, the locations of these communities were no longer determined primarily by the location of the railroad. By the time of incorporation in 1898, this process of founding new communities had slowed down largely because most of western Queens, the part most accessible by train and trolley, had already been developed (Seyfried 1982:39).

The open land available in Queens served not only to attract real estate development and a residential population from New York, but also proved to be an attractive locus for those enterprises which could no longer function within the densely populated city.

In 1847, the Common Council of New York passed an ordinance forbidding the allocation of additional land in Manhattan for cemeteries. Subsequently, Brooklyn passed a similar law. In 1850, the New York State legislature passed the Rural Cemetery Act and

for the first time private corporations were authorized to go into the private cemetery business. Within a year the churches and several newly chartered cemetery companies were in eager competition to buy out farms that were outside the City limits yet reasonably accessible by carriage. ...Queens county, with no cities and with vast empty acreage, became a favorite target for the cemetery corporations. The western part of the county, lying closest to Brooklyn and the East River was the most attractive and the most vulnerable. (Seyfried 1982:11)

This proliferation of cemeteries in Queens County in the 19th century is reflected in the two land use maps that accompany this text (Figs. 1 and 2). As an example of the scale of this cemetery development in Queens, it might be noted that by 1890 1/7th of the area between Flushing Creek and the East River had been converted into cemetery property. It should also be remembered that this was land that could neither be used for other purposes

nor assessed for taxes (Seyfried 1892:11).

Two important commercial developments of 19th century Queens were resorts and race courses. The Rockaways, in particular, were a major resort area for the greater New York region. In the early part of the 19th century there were a few boardinghouses in Far Rockaway (Hazelton 1925), but the major development of this area began with the construction of the Marine Pavillion in 1843. This famous resort hotel had 3 stories, an ocean frontage of 230 feet and 2 wings. This resort attracted guests from many parts of the country, including such literary figures as Henry W. Longfellow and Washington Irving (Hazelton 1925; Seyfried 1982). The Marine Pavillion's success led to the construction of other hotels, amusement parks, boarding houses and to the development of the entire Rockaway Peninsula as a resort area.

Coincident with this resort development, and important for it, was the development of adequate transportation links to the Rockaways which opened up the area to large numbers of people. These included ferries which operated between New York City and Canarsie in Brooklyn and Far Rockaway. The major development of the area, however, took place after the construction of the railroad line in Far Rockaway in 1869, the extension of the railroad along the beach in 1872, and the opening of the railroad trestle over Jamaica Bay in 1880 (Munsell 1882).

The development of this part of Queens in the late 19th century as a recreation area for New Yorkers is an example of how Queens and New York City were becoming culturally and economically integrated, through New York City's use of Queens County's acreage opportunities (see discussions of cemeteries and agriculture above) even before the official incorporation in 1898.

Several race courses in Queens also provided recreational opportunities for New Yorkers. Racing was so important in Queens during that time period that the county in fact has been referred to as "the cradle of American horse racing (Munsell 1882:57).

DISCUSSION

To date, relatively little archaeological research relevant to the study period has been done in Queens. The majority of the documents on the attached bibliography are survey reports. There has been no focus on the development of research questions within an organized framework.

Archaeological resources associated with commercial, residential, farmstead, industrial, resort and recreational sites can, however, provide an important opportunity to study the processes of urbanization in Queens which have been discussed above. Discussion of the location and integrity of these resources is beyond the scope of the present study and obviously requires detailed site-specific analyses.

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STATEN ISLAND IN THE 19th CENTURY

Staten Island, by virtue of its geographic location has been both tied to and isolated from the New York, New Jersey metropolitan area it is surrounded by. An island culture only linked to the mainland by a series of ferries from its initial European settlement in the 17th century, Staten Island has until most recently reflected a somewhat isolated, restricted social and economic network. With the opening of new transportation links with the New Jersey and New York mainlands in the 19th century and improved roadways and subsequent rails through the island itself, some of the isolated character of the island was changed. It has not been until most recently in the 20th century with the opening of car bridge arteries that access has been made extremely easy for our very mobile society. Settlement patterns on the island reflect its inaccessibility and dependence upon transportation networks, as well as reflecting the settlement patterns of the large metropolis that was its neighbor.

The post Revolutionary War period was an important era of adjustment for this area which had been almost entirely British controlled. Settlement patterns reflect those of rural Dutch and French Huegenots as well as English who had been the earliest settlers. Land was divided into patents and was in many cases unimproved. For nearly thirty years after the war the island saw little new development, but rather the reestablishment of farming and fishing as its primary occupations. In 1788 political boundaries were drawn dividing the island into four townships:

Northfield, Southfield, Westfield, and Castleton(Schneider 1977:20). These boundaries seem not to have encouraged any particular clustering or settlement, however. During this period local saw and grist mills appeared along with other services such as stores, blacksmiths, weavers, basketweavers and tailors(Leng and Delavan 1924:14).

The development of hamlets and villages in the 19th century was linked in part to focal points of transportation networks, i.e., ferries and landings and inland roads and crossroads, and subsequently to the commercial and manufacturing establishments to which they were tied(Staten Island 1979:4). Tompkinsville, established in 1814-1815 by Daniel Tompkins, is an example of the first of these coalesced groupings occurring at the intersection of two roads(Now Victory Boulevard and Bay Street)(ibid. 1974:4; Leng and Delavan 1924:21). Richmond, located in the center of the island, characterized the village pattern at this early 19th century period which could include private dwellings and auxiliary buildings such as hotels, churches, public buildings and government, as well as commercial and manufacturing complexes(Staten Island 1979:4). "Totensville" characterized this pattern on the south shore.

Links with the mainland by ferry existed at Totenville linking it with Perth Amboy(NJ), at Holland or Howland Hook linking to Elizabeth(NJ) both crossing the Arthur Kill; at Bergen Point(NJ) and Port Richmond across the Kill Van Kull; the Ryerson Ferry at New Brighton linking with Manhattan and a ferry across the narrows to Brooklyn(Leng and Davis 1896). By 1816 Daniel Tompkins and

his Richmond Turnpike Company had constructed a continuous road linking the northeast shore at Tompkinsville with the New Blazing Star ferry (Linoleumville) on the west shore (Leng and Delavan 1924: 21). At the same time Tompkins opened up steam boat service between Tompkinsville and Manhattan-a great improvement over open sloops or periaguas- creating a direct route between New York and Philadelphia via Staten Island (ibid. 1924: 21).

As urbanism became increasingly oppressive in Manhattan, and as a new monied middle class developed in the early 19th century, Staten Island, with its bucolic settings and healthy rural environment became increasingly attractive as a place to find solace and peace. Several large communities were set out as fashionable, romantic suburban communities, for example, New Brighton (1834 developed by Thomas Davis; the village of Richmond (1836 by Seaman); Clifton (1837 by the Staten Island Association); and Hamilton Park (1853 by Hamilton) (Staten Island 1979:7).

For some of the same reasons, easy access to New York City, healthful environment and relative isolation, the north shore especially became the site of several large public and private institutions. The Quarantine Station opened by 1799, serving as a detainment area for persons entering the harbor with contagious diseases; several other complexes were later added including Fever Hospital and St. Nicholas Hospital (Staten Island 1979:11). In the 1830's institutions for seamen were located on the north shore, Sailors' Snug Harbor and the Seaman's Retreat (Shepherd 1979:16). Institutions occupied large tracts of land, usually on the shore-

line, and were almost totally self-sufficient having a complex of auxillary buildings associated with them. They were somewhat responsible for the growth of the town surrounding them, but also inhibited their expansion and development by occupying prime water front property(Butler 1859). In the late 19th century Mount Loretto(1883) a large non-medical institution developed along the south shore in much the same pattern as the earlier ones with extensive acreage and extended building complexes within the grounds.

Resorts were another settlement pattern descernible after the first quarter of the 19th century, also a result of extensive urban growth in New York and a desire to escape from oppressive heat and noise to the seashore and rural setting. Staten Island with its picturesque environment and miles of seashore became a favorite retreat for the city 's weary and wealthy. The earliest resorts were located on the southeast shore: the Pavilion Hotel(1827) and Planters Hotel (1821) were both in Tompkinsville; the New Brighton Pavilion(1837) and later Hotel Castelton(1891) were located on the north shore(Staten Island 1979:9). South Beach, later Midland began to develop by the 1880s, creating an extensive resort and recreational area utilized by as many as 100,000 a day at peak season(ibid. 1979:9)

Industrialization

Industrialization began on the north shore at Factoryville(West New Brighton) when about 1819 Barrett, Tileston and Company established a dyeing and printing house there(Leng and Delavan 1924:26). The Staten Island Whaling Company and later Jewett White Lead Works (1842) in Port Richmond, oystering beds on the west and south shores

as well as shipbuilding, provided other focus points for settlement during the first half of the century because of the manufacturing or industrial/commercial opportunities available (Staten Island 1979:4). Much of the expansion that took place, especially along the north and south shores occurred in a linear fashion, spreading out along the coast line (Butler 1859).

After 1850 a number of villages experienced substantial growth because of the introduction of industry. The village of Kreischerville (now Charleston) developed after 1854 when Balthasar Kreischer began his brick works there on a 700 acre plot of land between Rossville and Totenville (Schneider 1977:11). As a more developed village of the second half of the 19th century, Kreischer-ville was representative of the single company town having the industrial place as the focal point along with worker's housing the manufacturer's mansion, and the strip of commercial and social services needed to accommodate them (Butler 1859; Schneider 1977:11-13).

About the same time the brewery business became important in New Brighton with the development of Bachmann's Brewery (1851), The Constanzt (1852), Bechtel (1853), Bischoffs (1854) and Rubsant Hormann later in 1870 (Leng and Delavan 1924:27). In 1852 the De Jonge's Paper Factory also began in Tompkinsville (ibid. 1924:27).

Several improvements in transportation became operational in the last half of the century which increased industrialization somewhat and opened the whole south shore of the island. The first steam railroad linked Clifton with Totenville in 1860 (Leng and Delavan 1924: 24). As reflected on the 1898 map small villages and

hamlets grew up around the train stations along the route. The Staten Island Rapid Transit Railway Company was added to the rail system between 1884-1886 with a train bridge opening over the Arthur Kill in 1889. Stages and horse cars, meanwhile, linked the north and east shore with Richmond and Linoleumville to the west (Leng and Delavan 1924:25).

This expanded transportation access, provided by rail service coupled with expanding fortunes made in the 19th century, led to another distinctive settlement pattern on Staten Island—the estate. Residences with multiple acres, outbuildings, and "substantial residents" reflected the other end of the spectrum and another aspect of the suburban romanticism trend that gained popularity in the 19th century, becoming extensively pervasive on the south shore by the end of the century (Robinson 1898). Among the island's most notable estates were: the estate of Daniel Tompkins (N.Y. Governor and U.S. Vice President 1817-1824) (1821) facing the Bay and Narrows: Mable House in Castleton; Aspinwall (1850s) in Clifton; the Vanderbuilt estate on the south shore (18); and villas in Clifton and New Brighton (1840s and 1850s).

By 1880 the 36,000 acres of Staten Island had a population of 38,000 people and they were mostly clustered in villages, primarily along the north shore lines (Leng and Delavan 1924). The island was still largely characterized by multiple acre farms, forested hills, swamp, marsh and saltmeadow and miles of beach (Robinson map 1898).

Industry was clustered along the shore line and accounted for larger growing villages with accretions and services. Some of the industries of the later 19th century included the S.S. White Dental Works (1865) at Prince's Bay; The International Ultramarine Works (1885)

at Rossville; the Kreisher Brick Works (1854) at Kreisherville; drap rock and mining (till 1882) at Graniteville and Todt Hill; Dean Linseed oil Mill (1869); American Socks (1872); American Lineoleum Company (1873); Plaster Mills (1877); C.W Hunt Company (after 1882) (Schneider 1977;10-13; Leng and Delaven 1924; 26-28).

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SOME PRELIMINARY RESEARCH QUESTIONS ABOUT STATEN ISLAND

Economics

1. In terms of material culture, what goods were available locally to Staten Islanders?
2. How self-sufficient was the island's population in terms of both food and manufactured goods?
3. How did local industry affect the local area and Staten Island as a whole?

Trade Networks

1. How has the island's geographic isolation affected its growth?
2. To what extent were the Staten Island communities linked to the urban core in Manhattan?
3. To what extent did Staten Islanders trade with: New Jersey cities, the other boroughs, cities in upstate New York, cities in other areas?
4. Was there a difference in access to goods in the communities on major roadways and those in the more rural areas of the island?
5. Was there a difference in the goods available to the industrial and commercial communities on the North Shore versus those agricultural communities on the South Shore?

Social, Political and Economic Issues

1. What were the ties between villages on Staten Island?
2. How did the development of the beach resorts effect the island?
3. What effect did the development of the large estates have on the island?
4. What was the relationship between villages and hamlets?
5. What were the residential settlement patterns on the island?
6. Was there much in and out migration on the island or were the communities fairly static in their composition?

Ethnicity

1. Where there ethnic communities on the island, and if so, were these people working for particular industries?
2. Did these ethnic communities have a cross-section of people from all social classes or were they all working class people?
3. Were the working class neighborhoods a mixture of people from all different ethnic groups?
4. On Staten Island did the material culture reflect ethnic preferences or simply limited access to trade goods?

Note: When more historical research is completed additional research questions