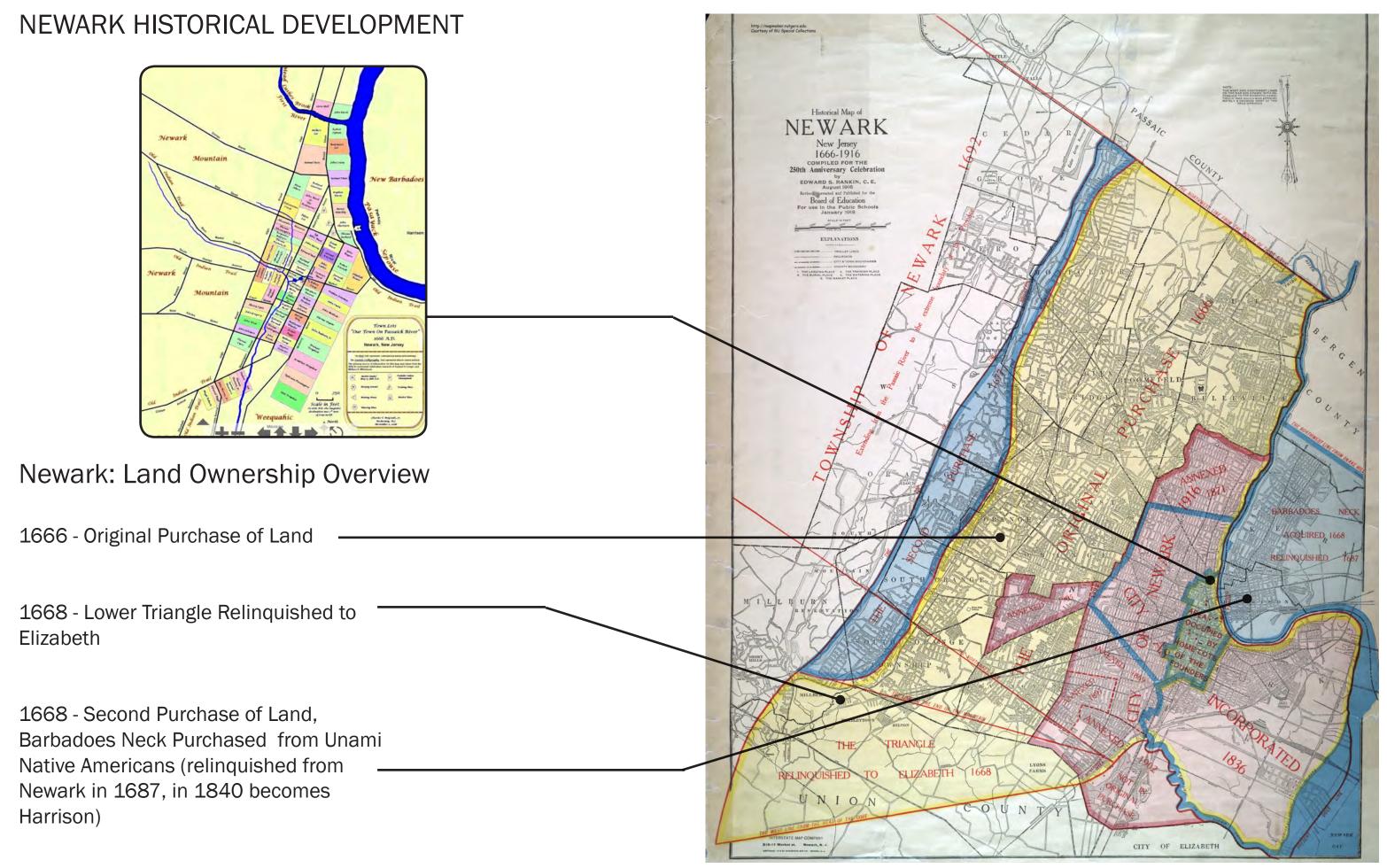
DEVELOPMENT TRENDS: PAST, PRESENT, FUTURE



Source: Rutgers University Special Collections

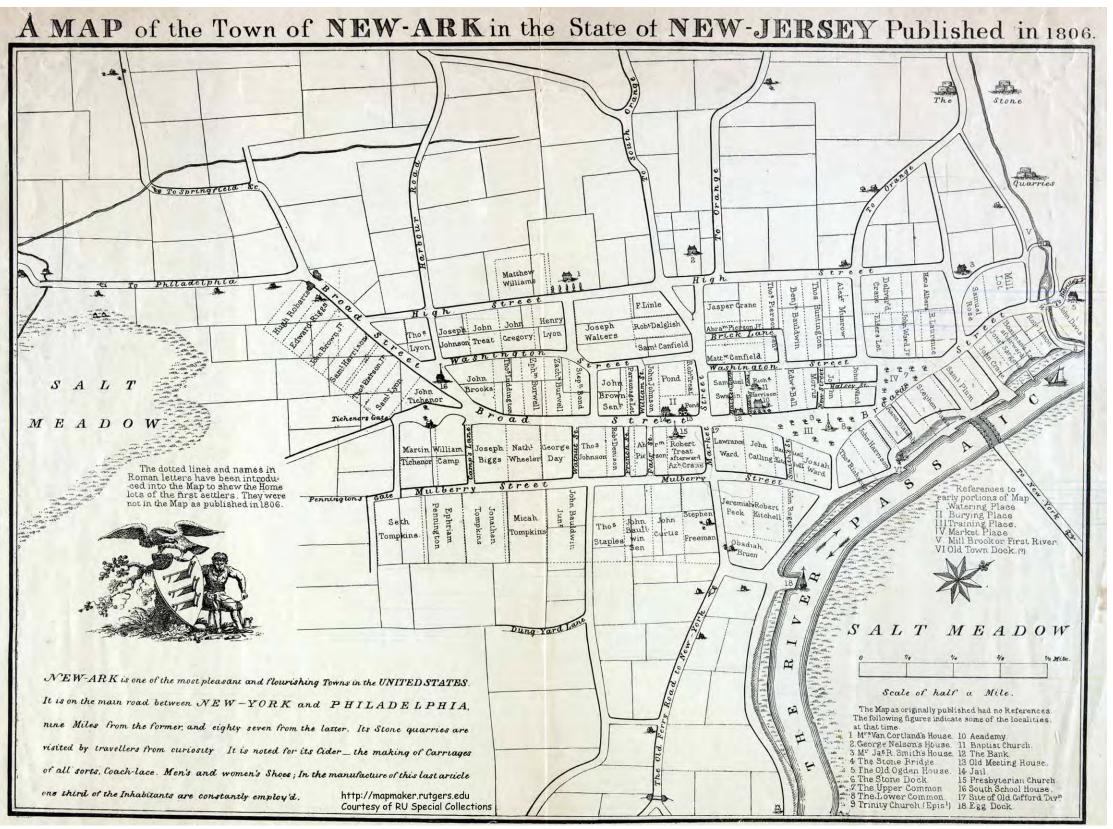
1666 - Newark is settled by New Haven Connecticut Puritans

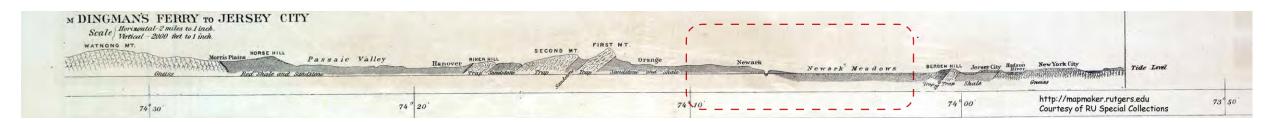
1721 - Newark stone quarries opened

1732 - Morris Canal opened 1832- John Wells whaling ship makes several successful voyages from Centre Street Dock

1833 - Newark Made a Port of Entry

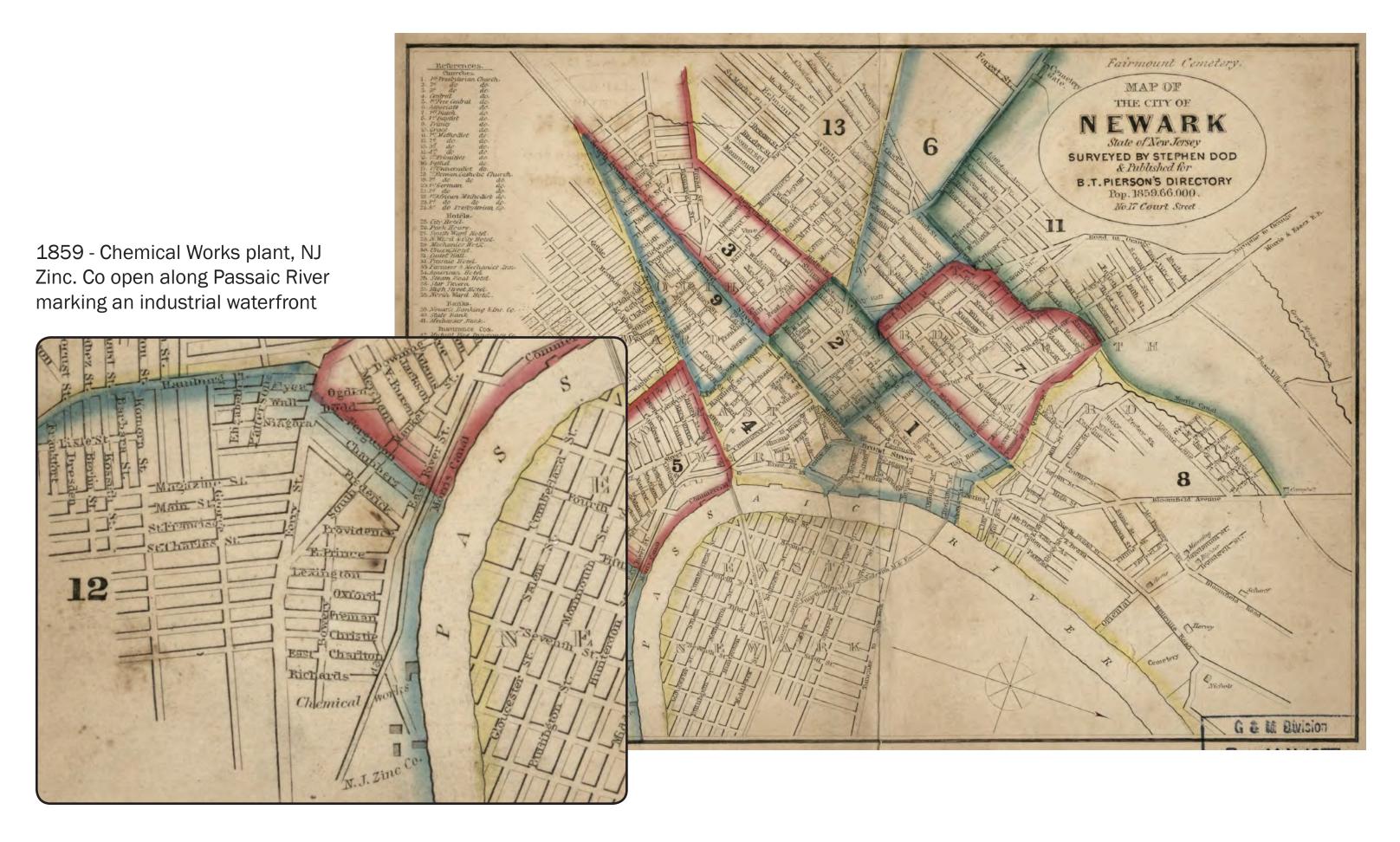
1834 - NJRR opened to Jersey City

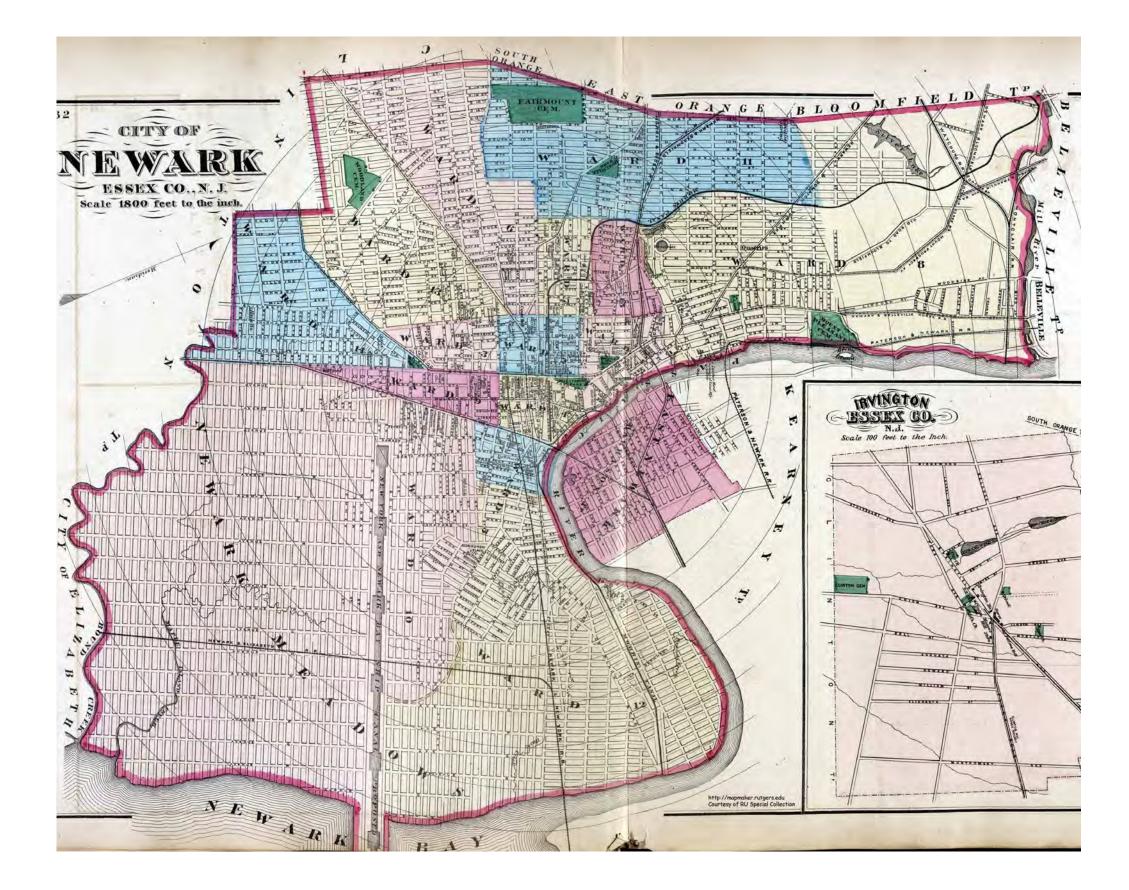




1859 - Newark becomes subdivided into Wards, with a significant number of churches, hotels, banks, and insurance companies

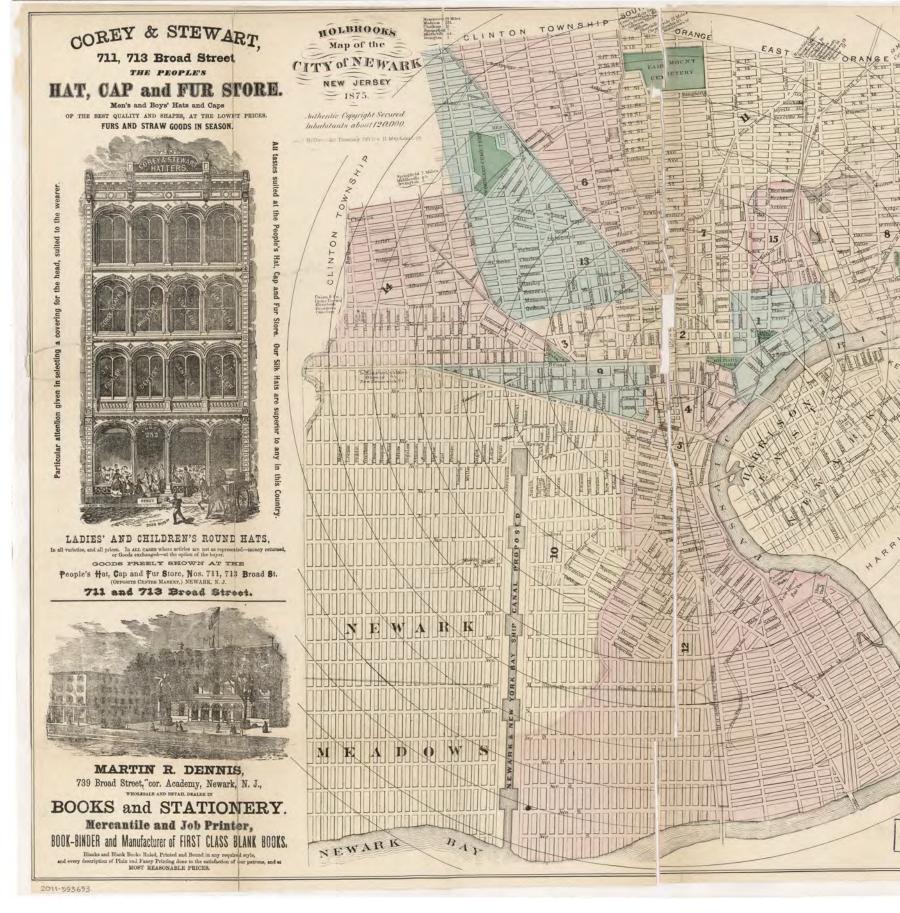






1872 - New York and Newark Bay Ship Canal proposed; Newark city boundaries become more

recognizable to those today



1875 - Map with Commercial Businesses; first mapped notion of "city center" with radial distance markers

Streets, Lands, Courts & Alley: not named on the Map.

A agent Stores, 50 Pine Barten Stores, 50 Pine Barten Stores, 50 Comparison Comparison Barten Stores, 50 Comparison Compa

MUTUAL BENEFIT LIFE INS. CO., 750, 752 Broad z

TOWNSHIP

LE-L-D-



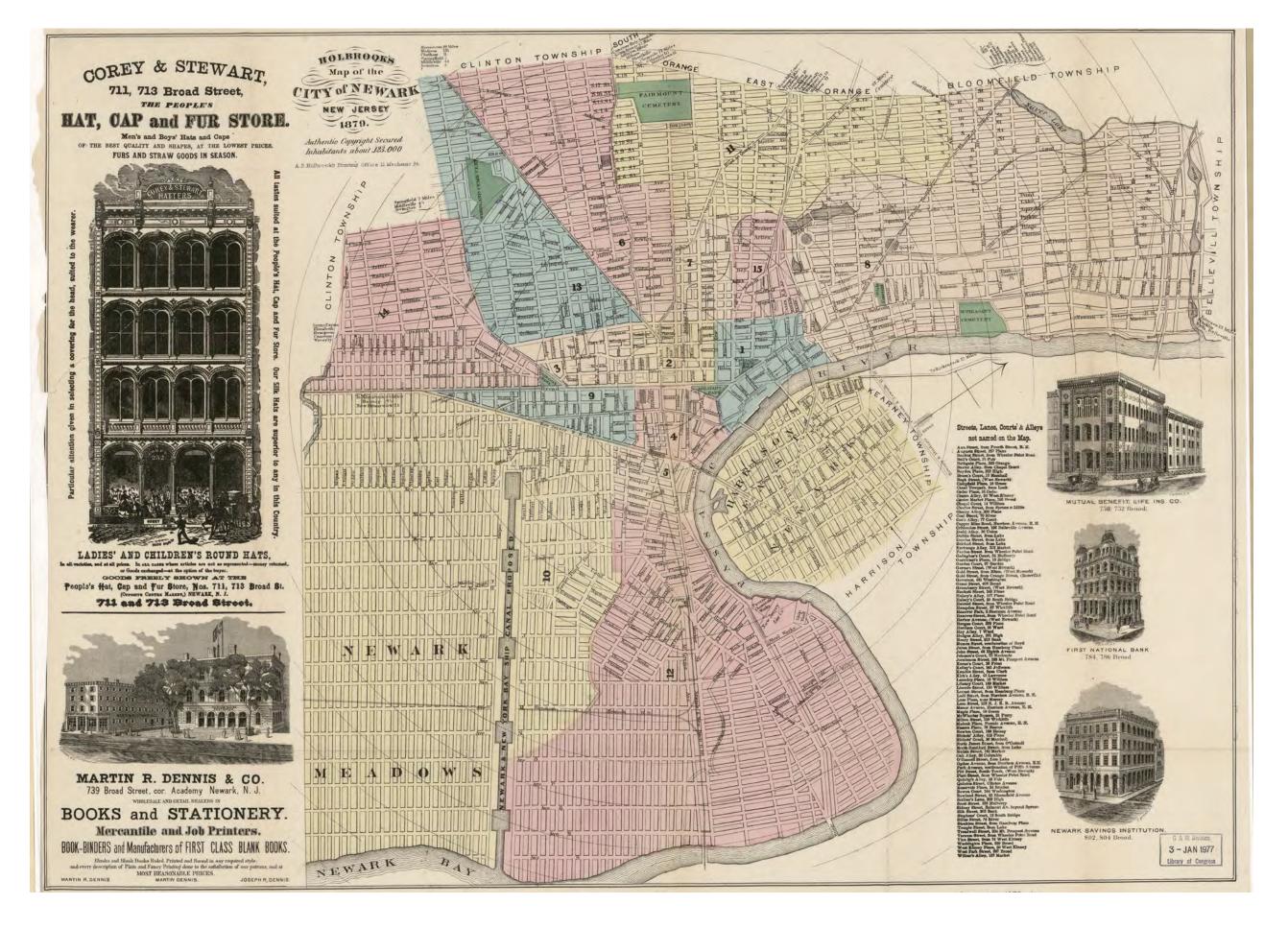
NEWARK SAVINGS INSTITUTION, 802, 804 Broad.



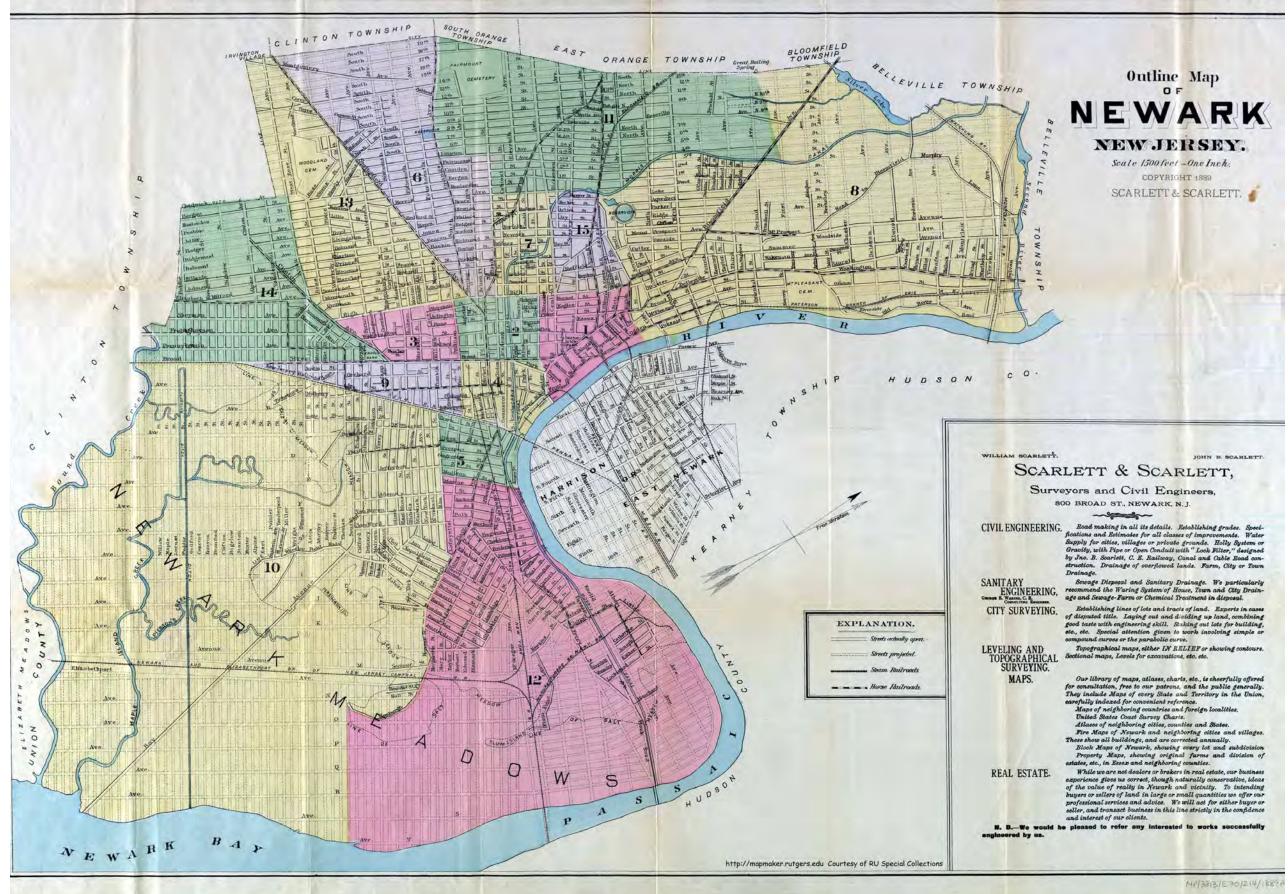
PETERS & CALHOUN CO., 906, 908 Broad

G3814.N5 1875 .A2

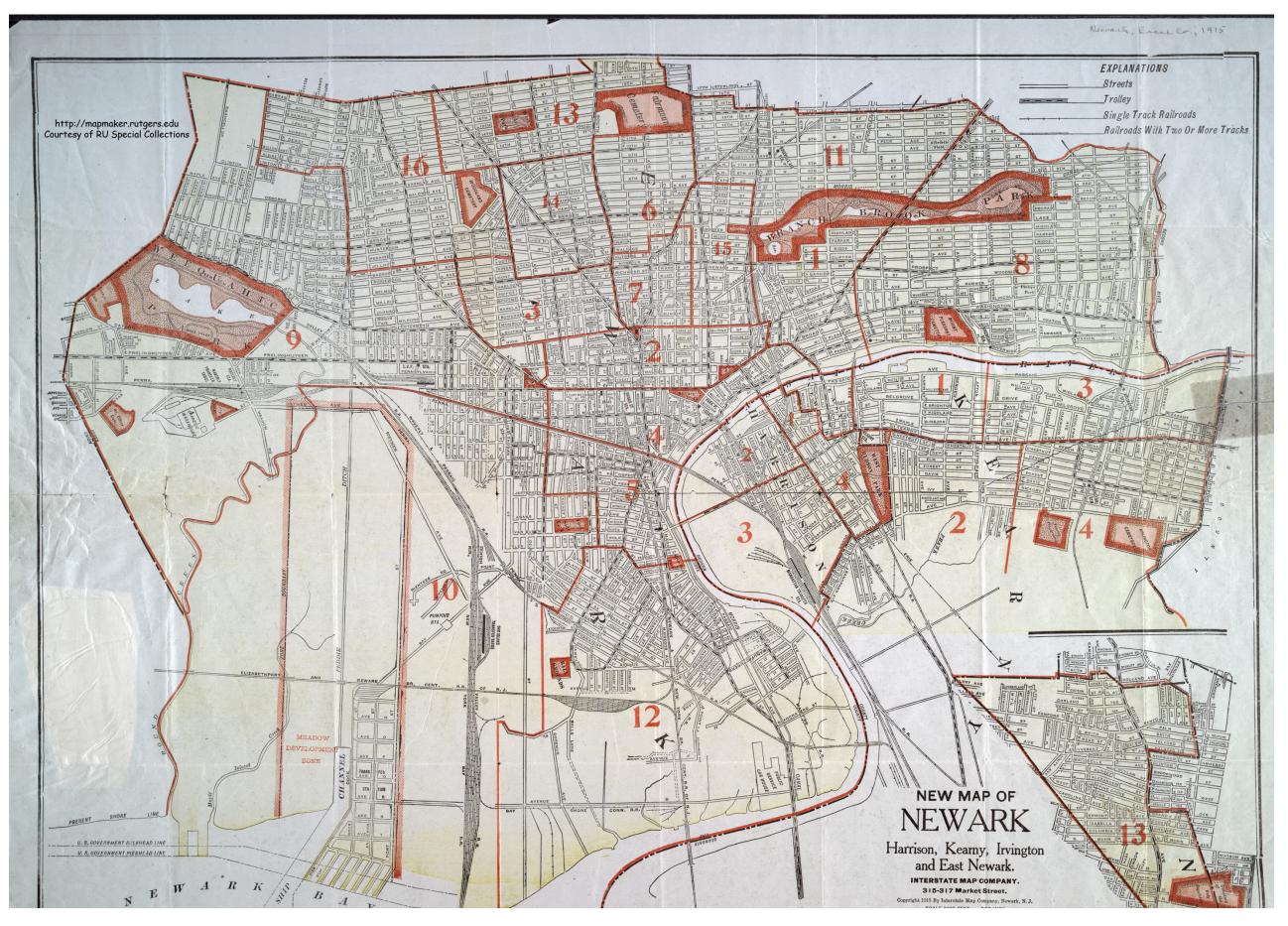
G & M Disc.or 3 - JAN 1977 Library of Congress



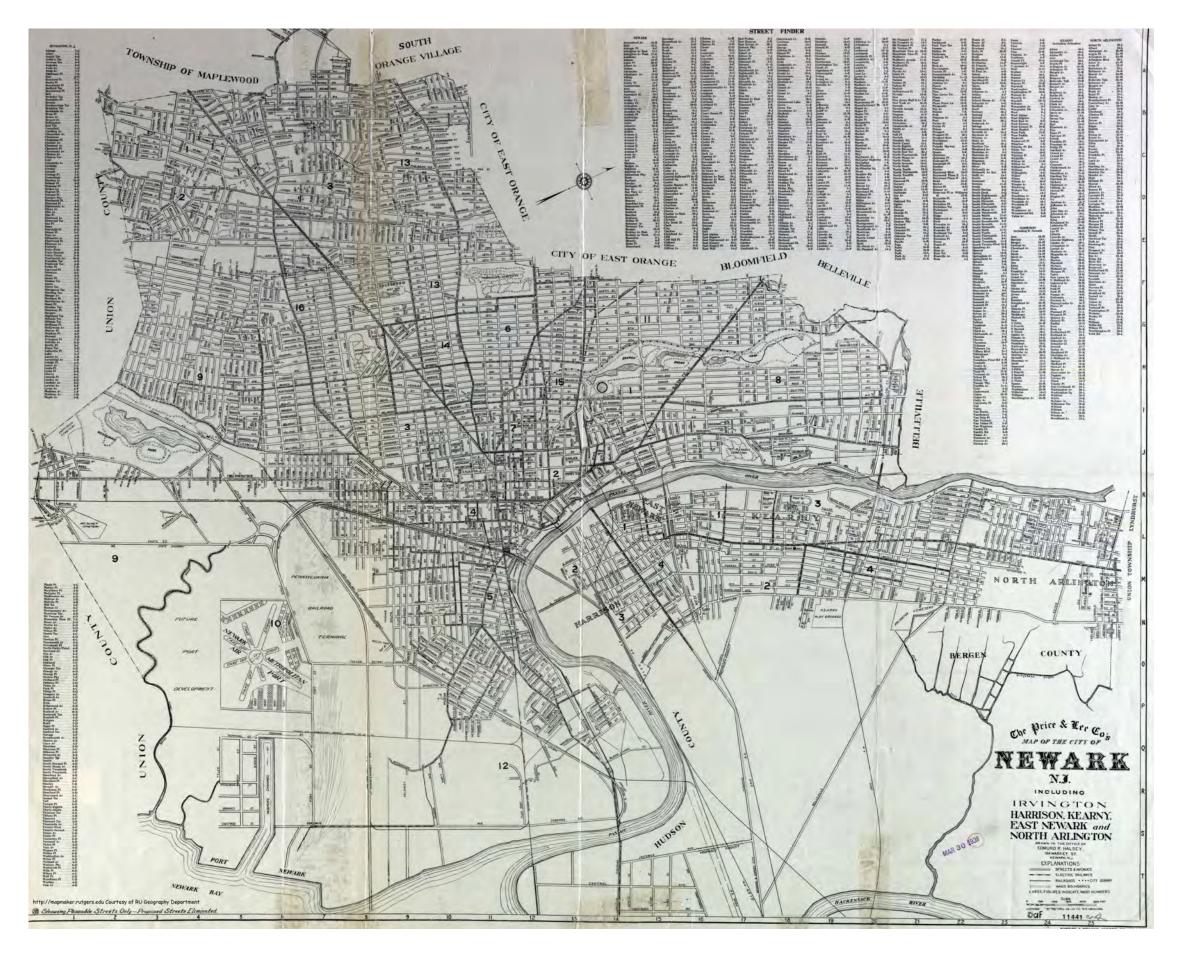
1879 - Listers Works added at the waterfront



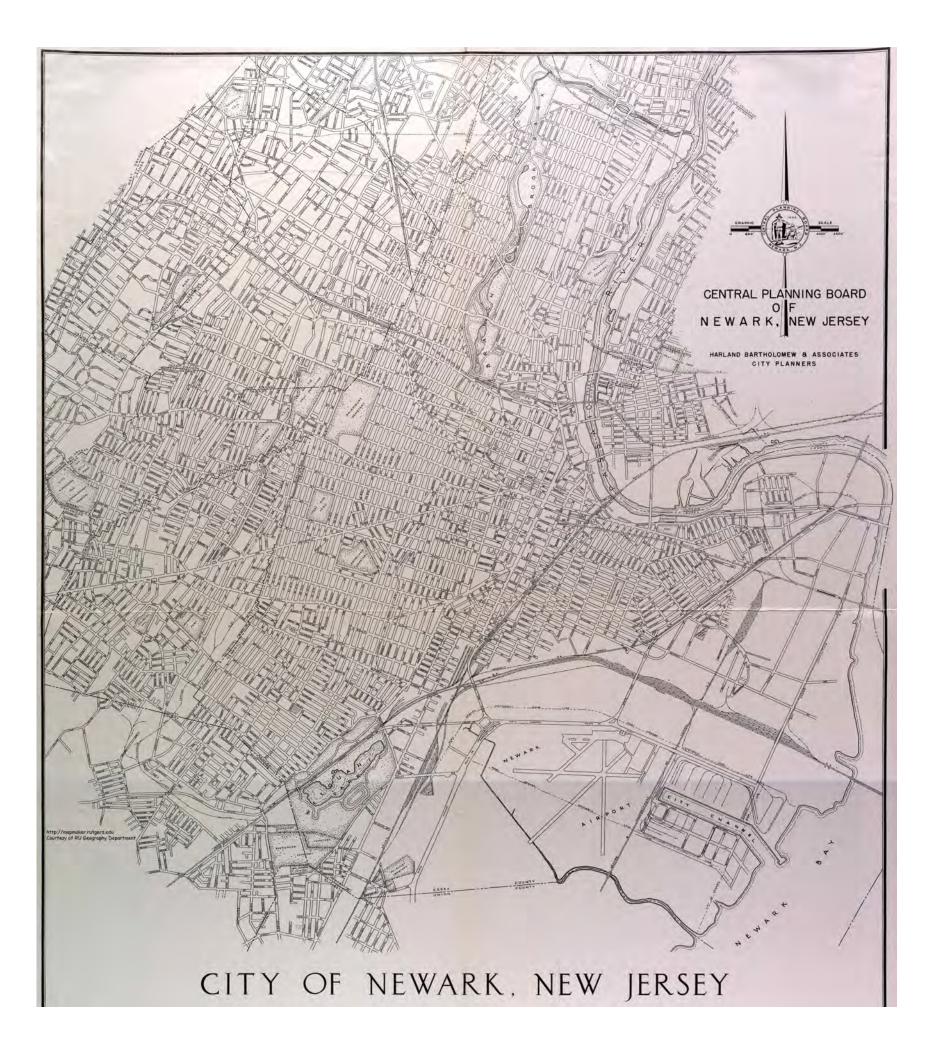
1889 - Map of Existing Streets, Steam Railroads, Horse Railroads, and **Projected Streets**



1915 - New Map of Newark - Trolley, Single Track Railroads, Railroads with 2 or more tracks



1938 - Newark Metropolitan Air Port, Pennsylvania Railroad Terminal



1944 - City of Newark, Central Planning Board A literal reorientation of the map

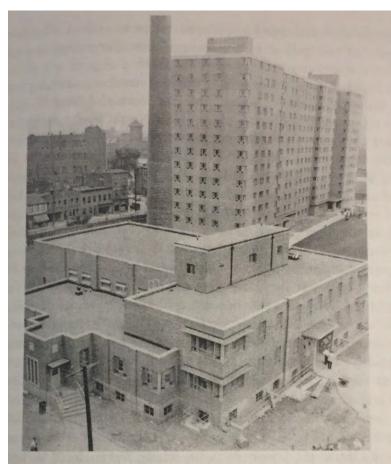
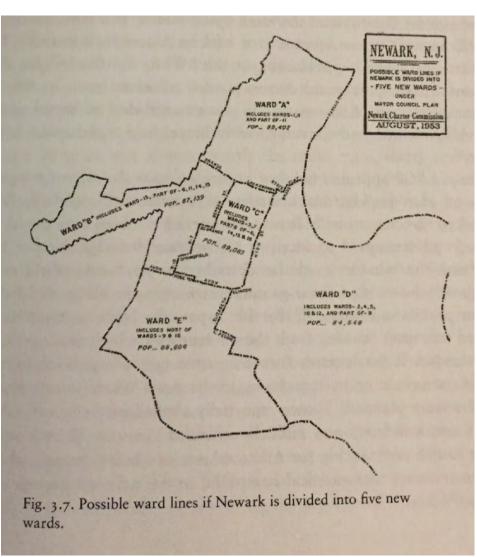


Fig. 3.5. The rise of urban renewal brought modern housing to Newark, such as the new Columbus Homes, but also introduced the disruptions and adjustments of racial integration. The Italian American community initially attempted to stop black residents from moving into the North Ward. (Courtesy of the Newark Public Library)



1950s: Urban Renewal in Newark. Images from Newark: A History of Race, Rights, and Riots by Kevin Mumford [2007]

Neig Nor

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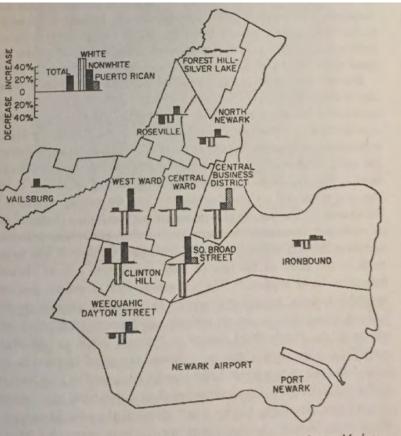


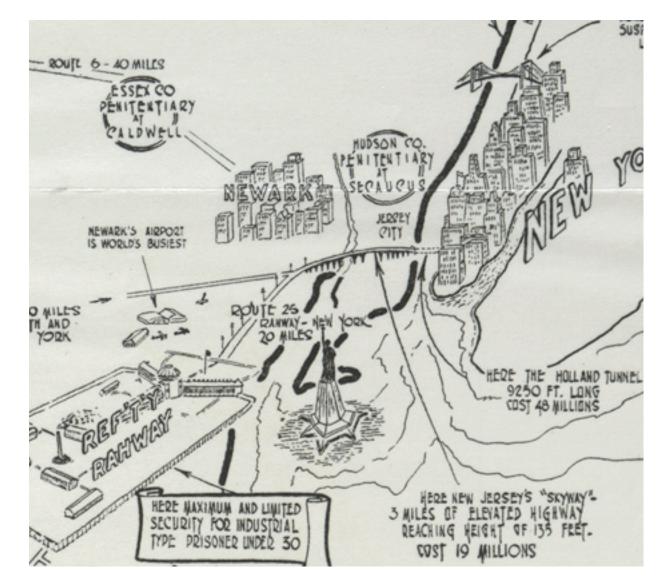
Fig. 3.4. Population changes in Newark's neighborhoods, 1950-1958. Source: Market Planning Corporation and Newark Central Planning Board.

e Construction	of In	tegration
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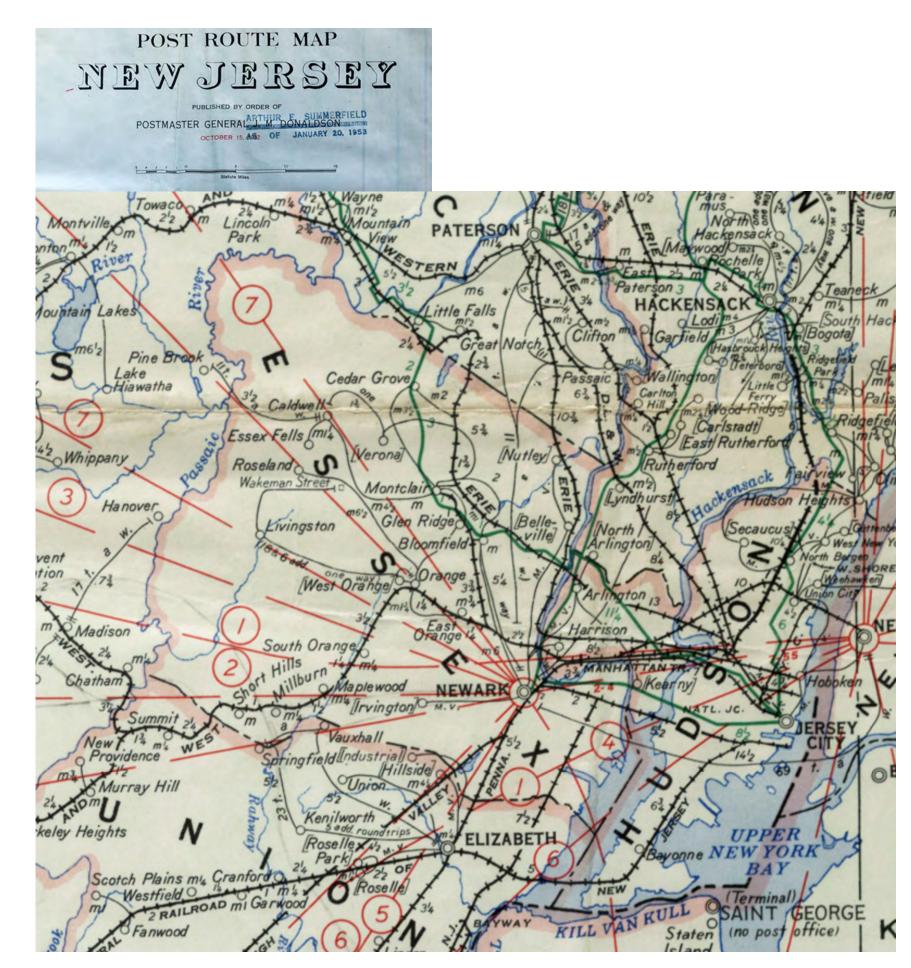
ghborhoods	Percentage Negro, 1950	Percentage Negro, 1958
rth Ward		
orest Hill	4.00	2.00
North Newark	12.00	24.00
loseville	4.00	17.00
t Ward		
Central Business	35.00	46.00
ron Bound	7.00	14.00
tral Ward	63.00	85.00
st Ward		
ailsburg	10.00	43.00
th Ward		10.00
outh Broad	20.00	61.00
linton Hill	8.00	44.00
Veequahic	2.00	16.00

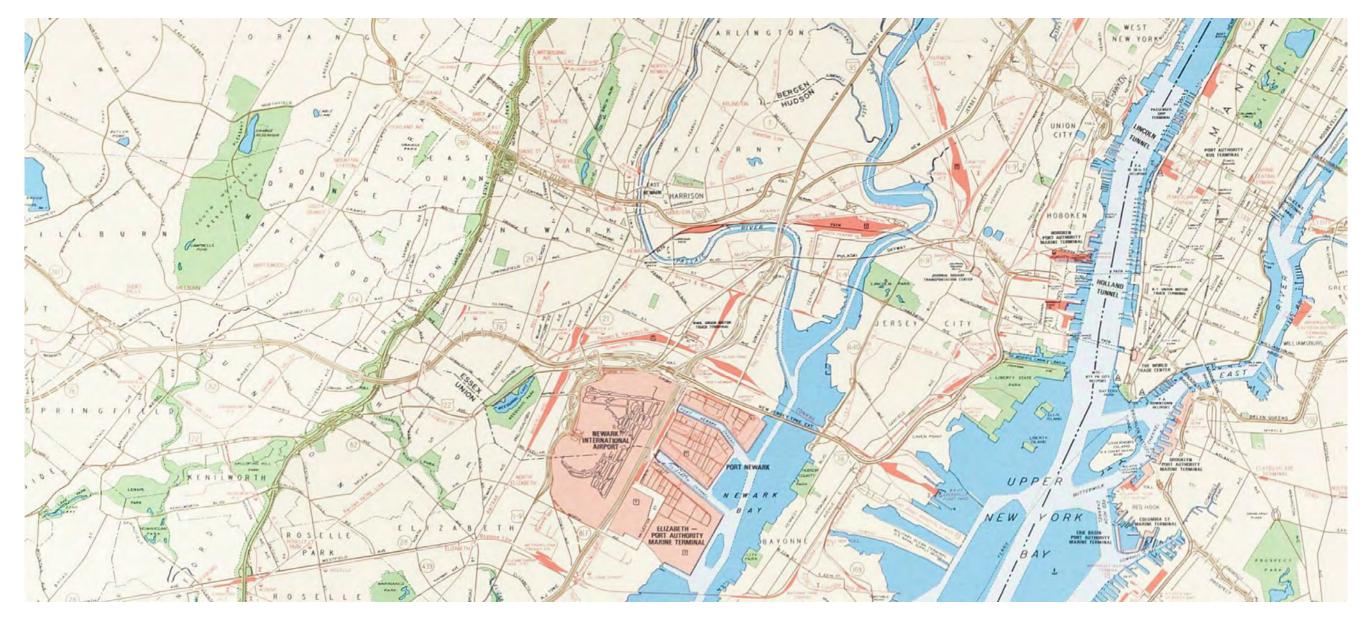
Fig. 3.3. Dispersion of the Negro population in Newark, 1950-1958. Source: Harold Kaplan, Urban Renewal Politics: Shum Clearance in Newark, p. 149.



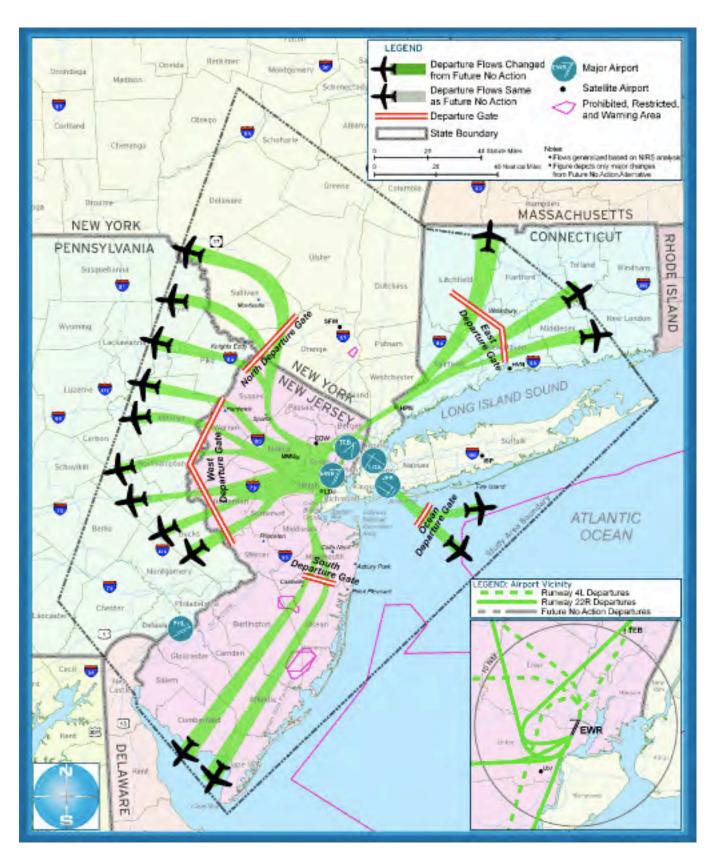


1953 - Post Office Map, Suburbanization 1955 - NJ Invites You! (Prison Economy?)

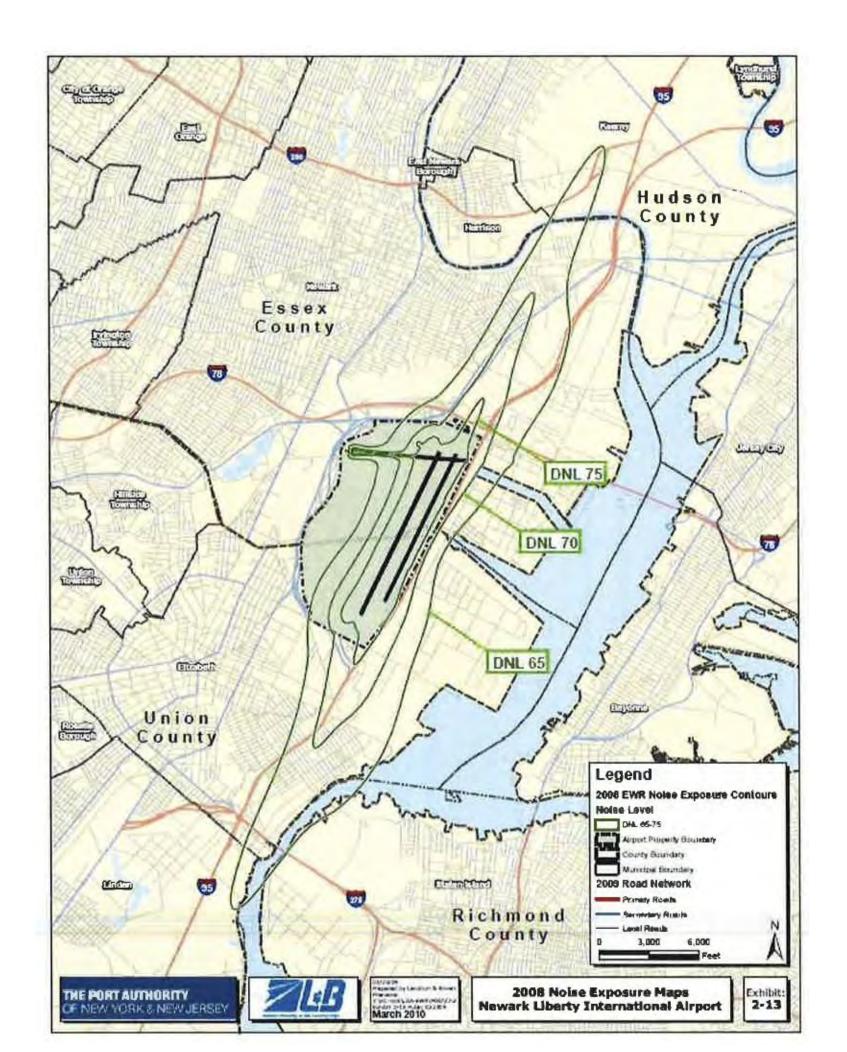


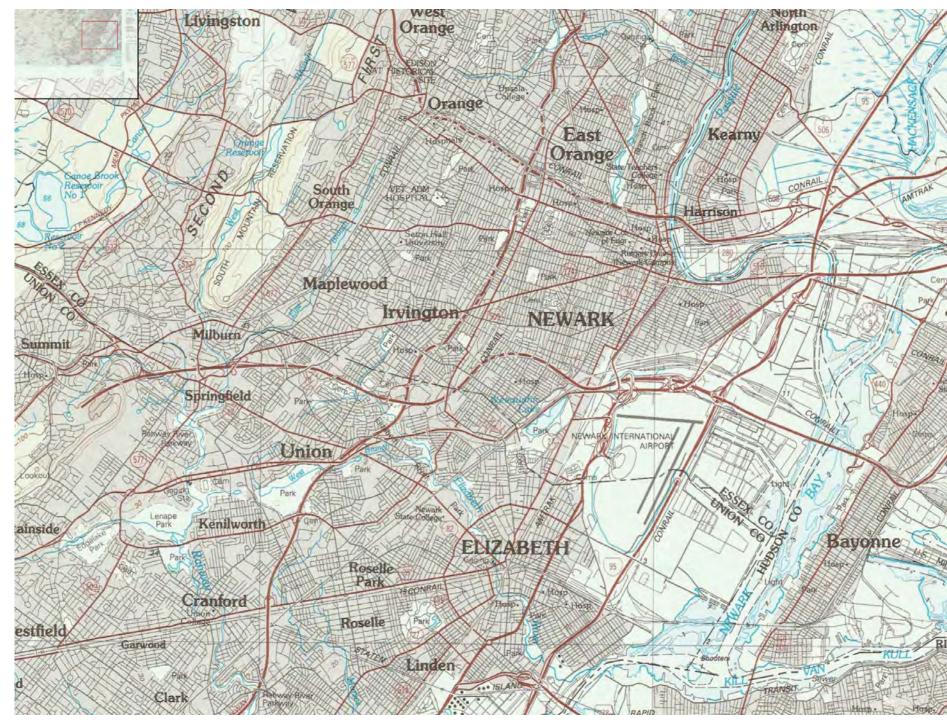


1979 - Port Authority Map

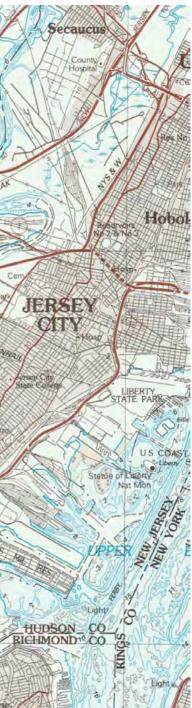


above: Newark Airport Flight Paths, right: 2008 Noise Exposure Map





New Jersey Bathymetric Map



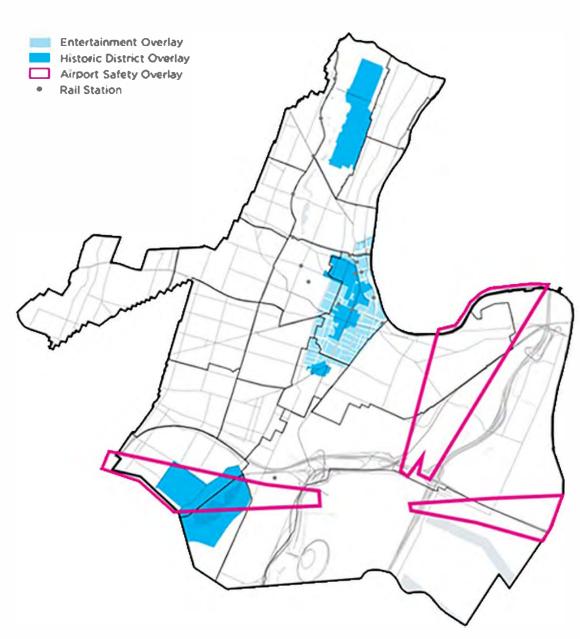
NEWARK - ZONING AND LAND USE OVER THE YEARS

Over the past three decades, most development projects in Newark have been undertaken through redevelopment plans or variances – processes that circumvent the Zoning Ordinance.

MAJOR TAKE - AWAY

Vacant land has decreased by an overall 22 % along with industrial land use amounting to a 17% decrease. Whereas residential, apartment and commercial/retail landuse has increased between 9-14%

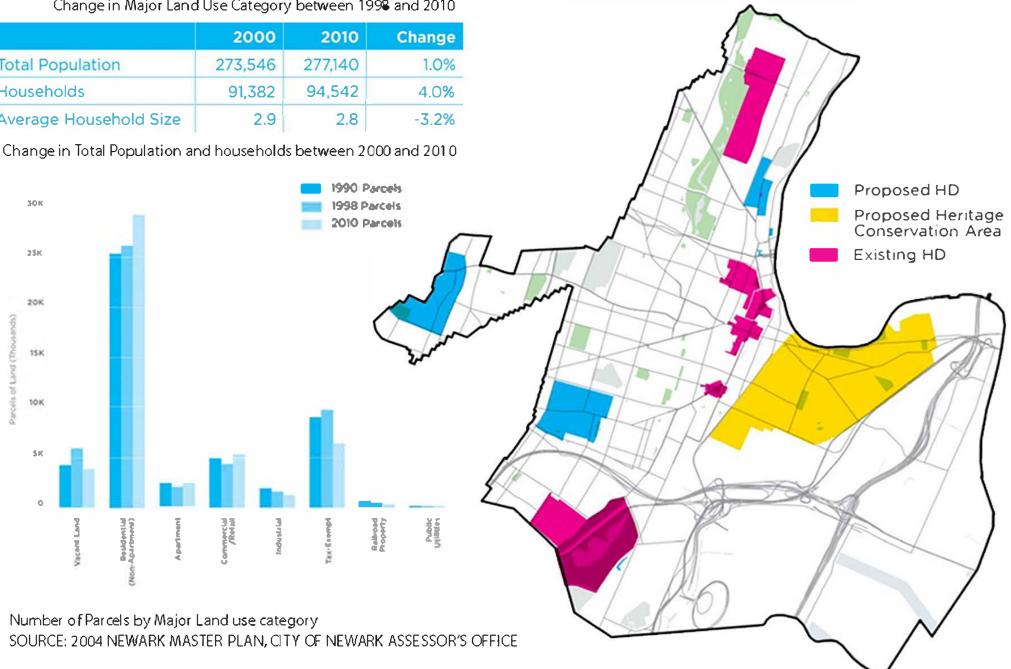
Is there a direct Co-relation between the two?



Land Use	Change by Number	Percent Change	Percent Change of City Total
Vacant Land	-1,157	-22%	-2%
Residential (non-apartment)	3,720	14%	8%
Apartment	104	9%	0%
Commercial/Retail	473	10%	1%
Industrial	-180	-17%	0%
Tax-Exempt (public, church, and non-profit)	-3,058	-32%	-6%
Railroad Property	-6	-3%	0%
Public Utilities	0	0%	0%
Total	-104		

Change in Major Land Use Category between 1998 and 2010

	2000	2010	Change
Total Population	273,546	277,140	1.0%
Households	91,382	94,542	4.0%
Average Household Size	2.9	2.8	-3.2%

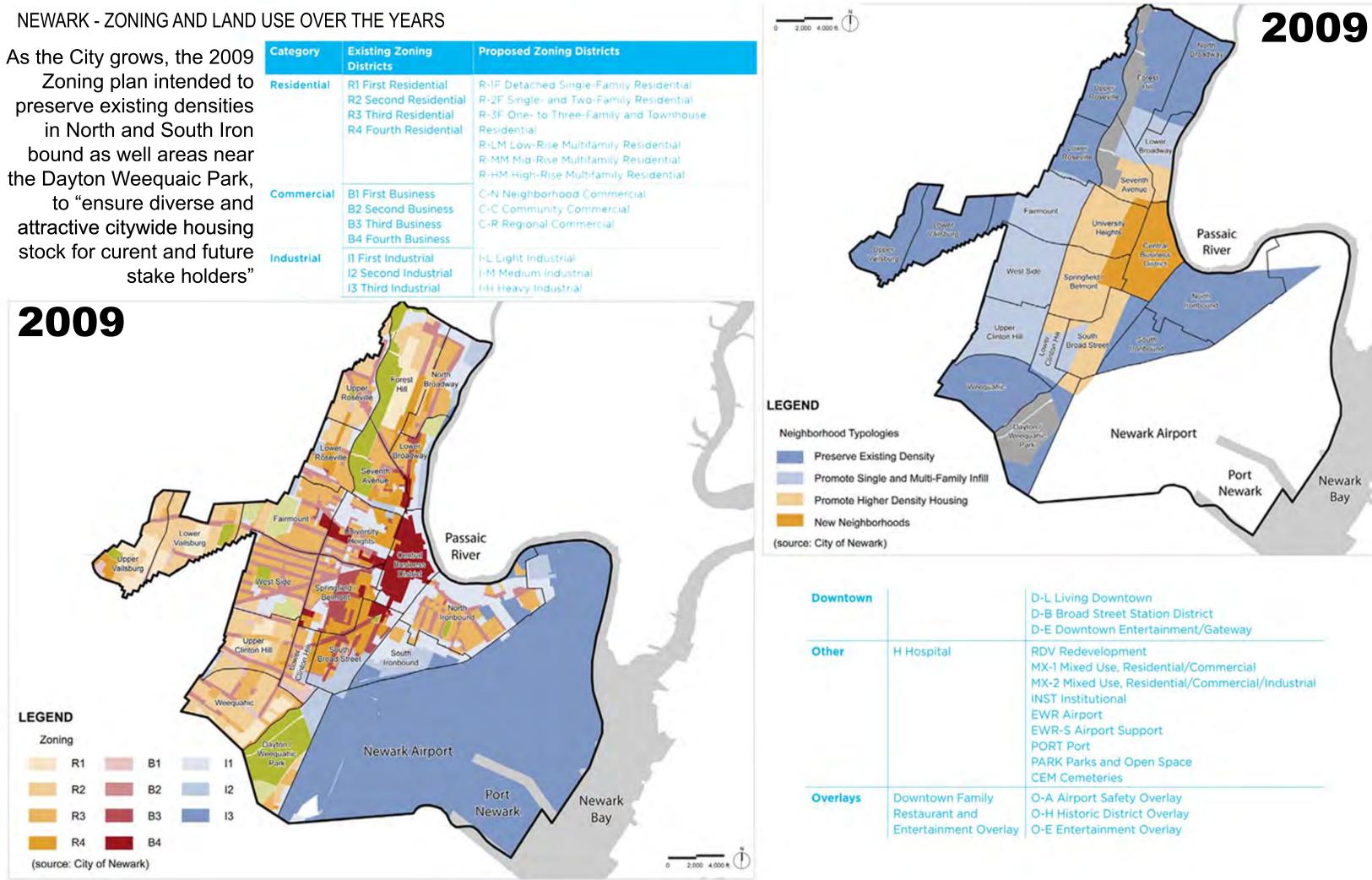


IRONBOUND - A HISTORIC DISTRICT?

What does the re-development plan of 2011-2012 say about historic districts?

"Ensure that new development in historic listricts enhances and preserves the critical elements that establish the character of the district"

s the MX-3 Zoning adhering to the claim nade by the city of Newark 6 years ago?



	D-L Living Downtown D-B Broad Street Station District D-E Downtown Entertainment/Gateway
	RDV Redevelopment MX-1 Mixed Use, Residential/Commercial MX-2 Mixed Use, Residential/Commercial/Industrial INST Institutional EWR Airport EWR-S Airport Support PORT Port PARK Parks and Open Space CEM Cemeteries
ay	O-A Airport Safety Overlay O-H Historic District Overlay O-E Entertainment Overlay

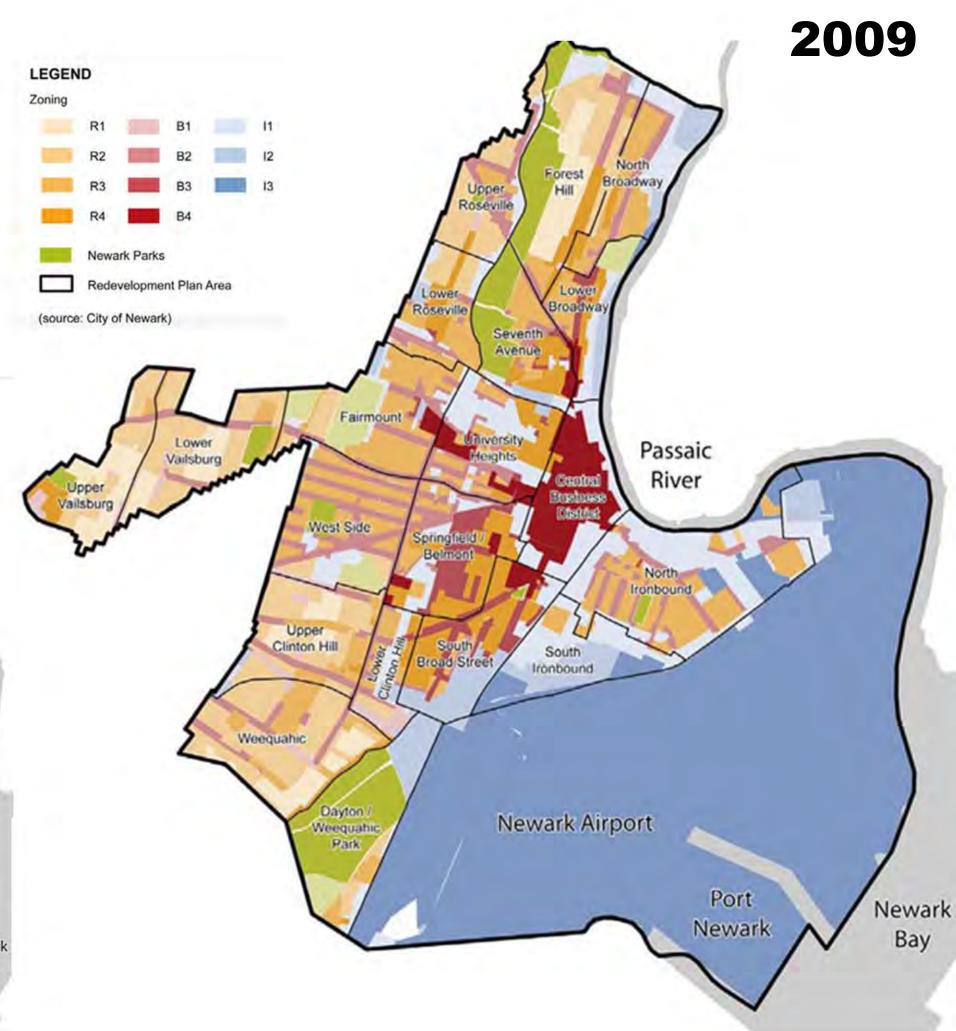
NEWARK - ZONING CHANGE OVER THE YEARS

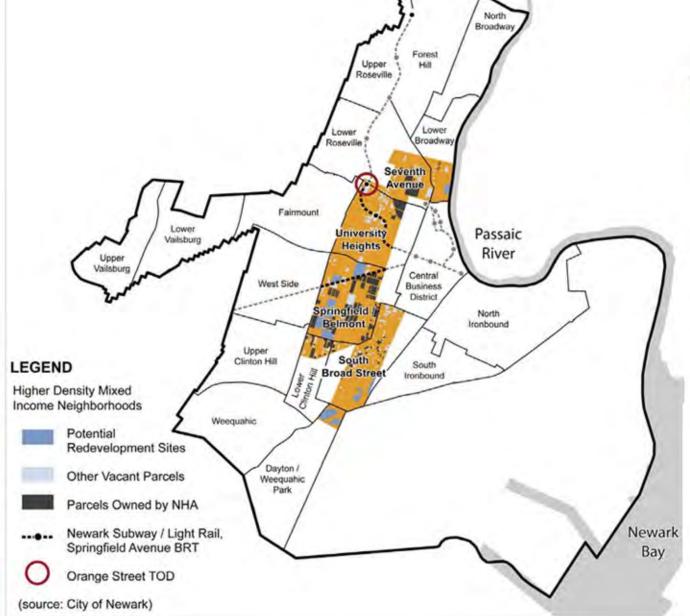
The ironbound is zoned as a majorly residential area with light industrial areas in the periphery. It is important to note that there is no "redevelopment" to take place in any area of the Ironbound community.

How ever, at the same time, Development is proposed East of Ironbound, largely in springfield Belmont, which has a high number of vacant parcels and land owned by NHA.

This Development comes 3 years after Broadstreet station for the Newak Lightrail is completed and open for public. There is obviously Transit oriented development at peak in Newark.



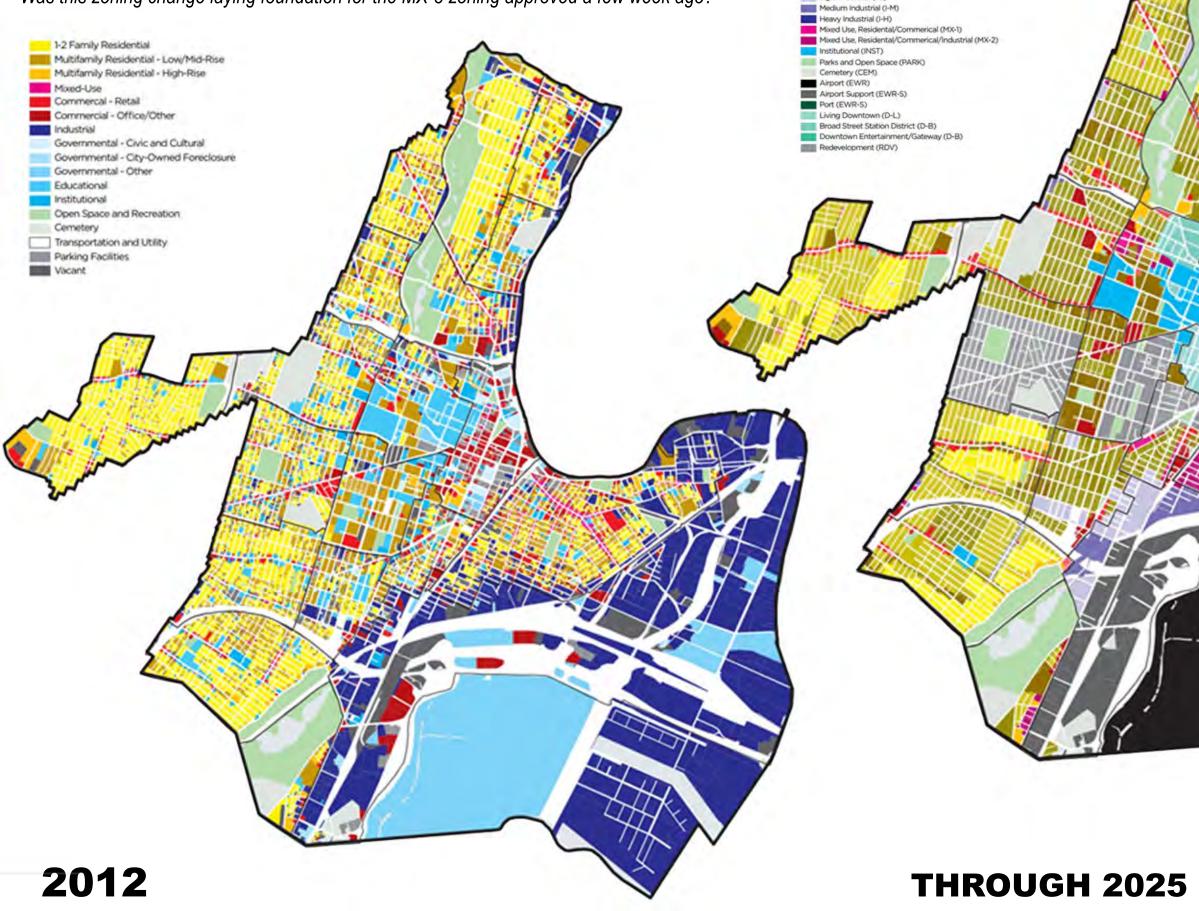




NEWARK - ZONING CHANGE OVER THE YEARS

Despite the intended strategy proposed in 2009 about preserving existing density in Ironbound, the area is re-zoned from a majorly residential zone to Neighbourhood commercial.

Was this zoning change laying foundation for the MX-3 zoning approved a few week ago?

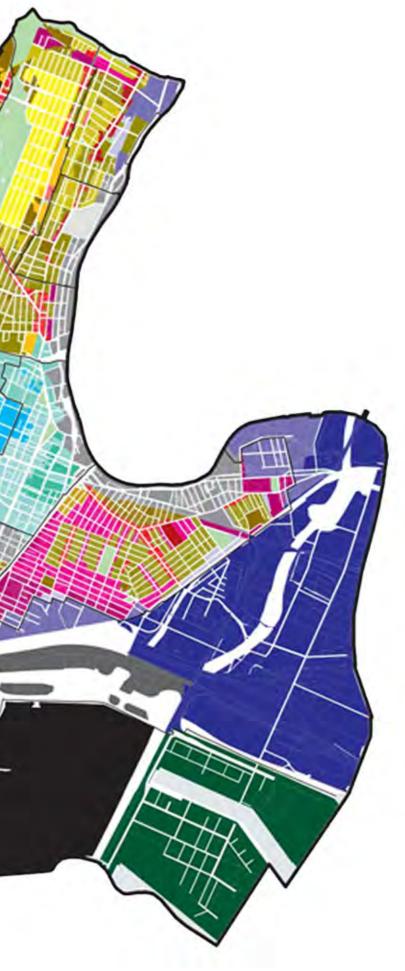


Detatched Single-Family Residential (R-IF) Single- and Two-Family Residential (R-2F)

Mid-Rise Multifamily Residential (R-MM) Hi-Rise Multifamily Residential (R-HM) Neighborhood Commercial (C-N) Community Commercial (C-C) Regional Commercial (C-R)

Light Industrial (I-L)

One- to Three-Family and Townhouse Residential (R-2F)



IRONBOUND - LAND USE CHANGE 2012 THROUGH 2025

Existing Land use

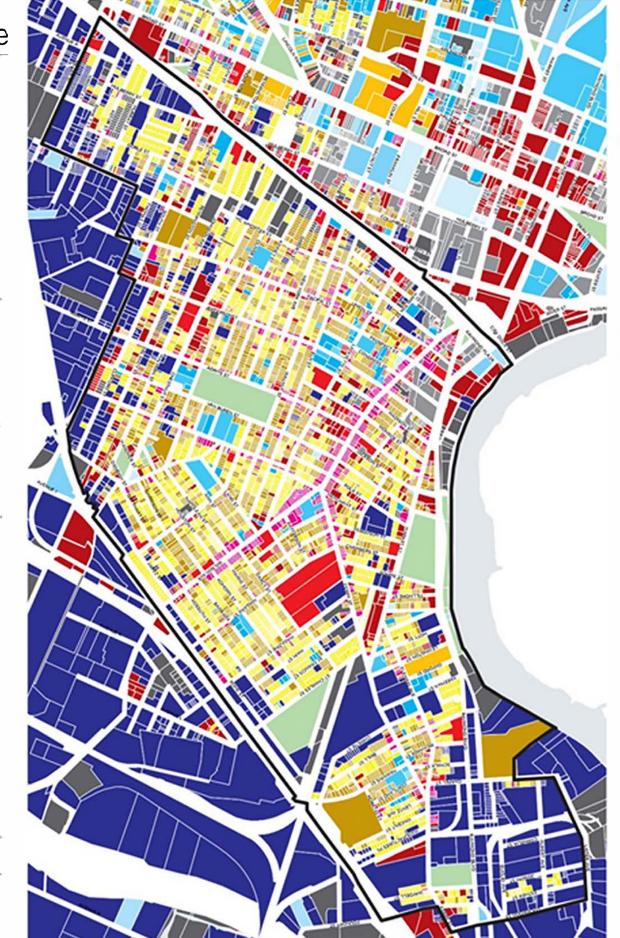




Source: City of Newark

Orientation

Ä



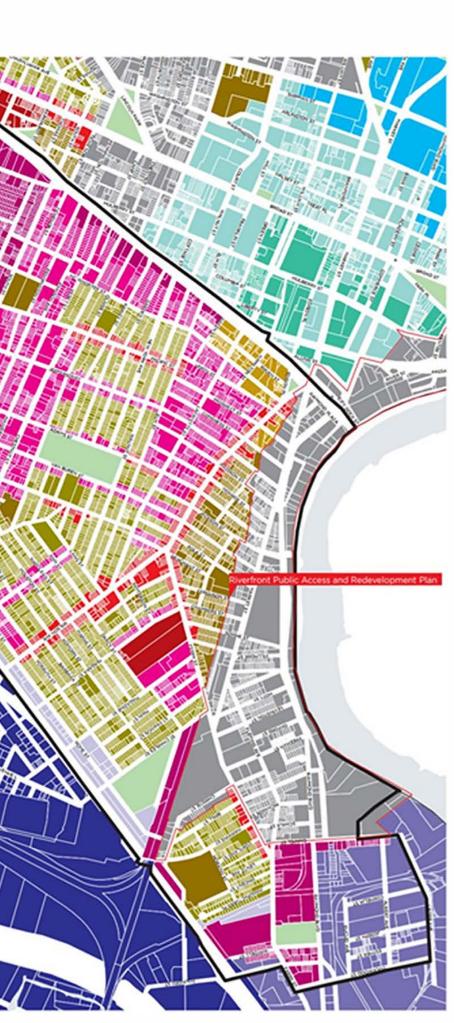
Future Land use

Detached Single-Family Residential (R-IF) Single- and Two-Family Residenced (R-2F) One- to Three Family and Townhouse Residencial (R-25) Low-One Hullandy Residenced (R-LH) Hot Rise Hallendy Reschered (R+PO) Har Rose Haddendy Residenced (R + 8-17) Neighborhood Commercial (C-N) Community Commercial (C-C) Regional Commercial (C-R) LIGK POLITICIAL) Hedium Industrial (I-M) Heavy Inclusional (1-HO) Hand Use and red Comment (HOL-3) How Use Branch Comments Amande (P-CX-2) Incondent Parks and Open Space (PARK) Constany (CEM) Arport (EWR) Arport Succost (EWR-S) Port (EWR-S) Uving Courtown (D-L) Broad Street Station Destrict (D-B) Downown Erectioner (D-8) Redivelopment (RDV) Rail Station

Zoning Amendments

- HX-2 in south tranbound will allow for <u>a range of residential commercial</u>, and light indvstrial uses.
- 2, R-3F in central ironbound south of Ferry Street will allow for a variety of dwalling types
- 3. R-LM north of Ferry Street will allow for more intense residential development limited by low building heights
- R-MH will promote higher-density residential development within walking distance of transit, including Penn Station, and other services in the area
- Industrial land uses will be preserved in the south and east ironbound to maintain job-producing uses.
- Commercial corridors will be preserved on Ferry Street, Wilson Avenue, and Pacific Street
- 7. HX-2 corridors will be created on Jefferson Street, Adams Street, Van Buren Street, and New York Avenue
- 8. The table of uses for industrial and mixed-use districts will be revised to prohibit and/or make conditional certain types of industrial projects based on their anticipated adverse impact on human health

The Riverfront Public Access and Redevelopment Plan addresses land use and design regulations for a large section of the north knobound.



DOWNTOWN- LAND USE CHANGE 2012 THROUGH 2025

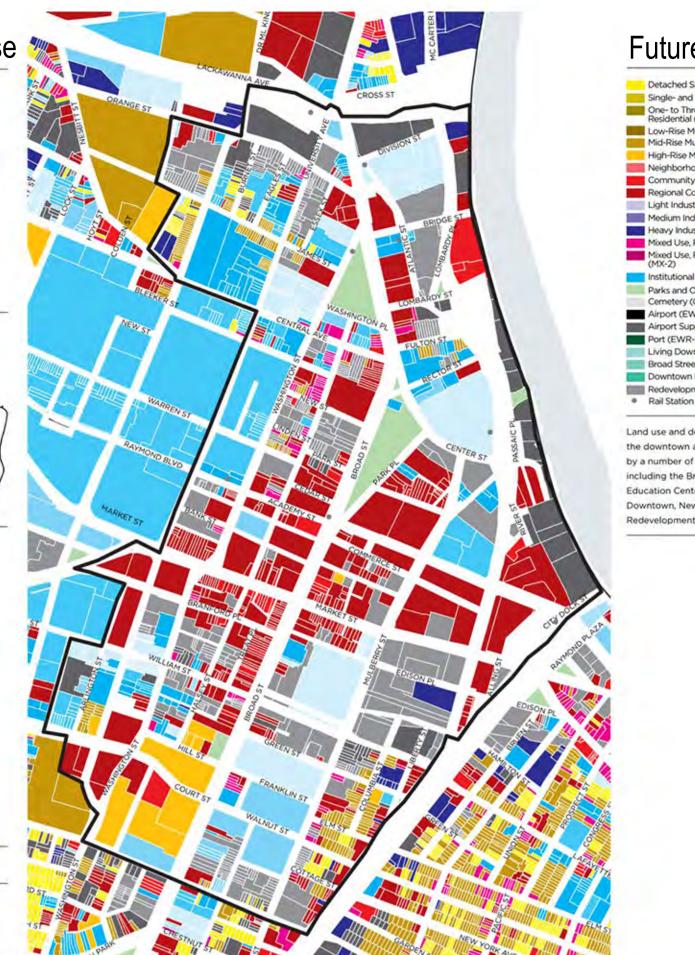
Existing Land use 🦄



Source: City of Newark

Orientation

^N



Future Land use



Land use and design regulations in the downtown are currently defined by a number of redevelopment plans, including the Broad Street Station District, Education Center, Downtown Core, Living Downtown, Newark Plaza, and Riverfront Redevelopment Plans.

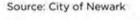


LINCON PARK- LAND USE CHANGE 2012 THROUGH 2025

The nighbourhood Lincoln Park did not exist in 2009 neighbourhood plan, until 2012, when area North to the South broad street, touching the CBD was renamed as Lincoln Park in the 2012 Development Plan

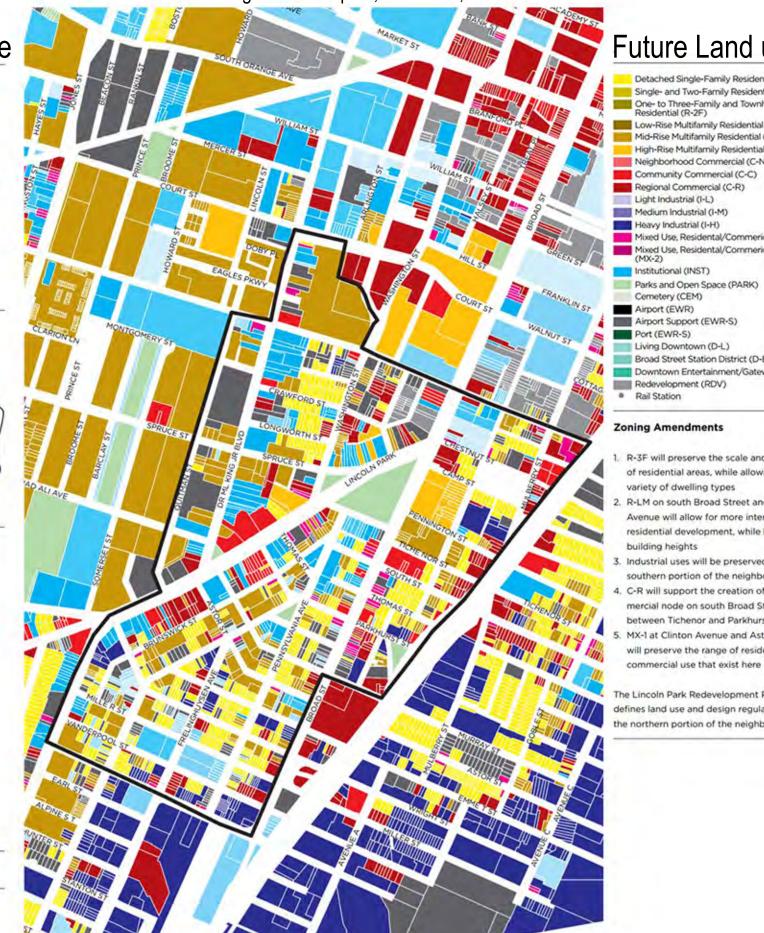
Existing Land use





Orientation

(1)



Future Land use



Zoning Amendments

- R-3F will preserve the scale and density of residential areas, while allowing for a variety of dwelling types
- R-LM on south Broad Street and Clinton Avenue will allow for more intense residential development, while limiting building heights
- . Industrial uses will be preserved in the southern portion of the neighborhood
- . C-R will support the creation of a commercial node on south Broad Street between Tichenor and Parkhurst Streets MX-1 at Clinton Avenue and Astor Street will preserve the range of residential and

The Lincoln Park Redevelopment Plan defines land use and design regulations for e northern portion of the neighborhood.



INDUSTRIAL DISTRICT- LAND USE CHANGE 2012 THROUGH 2025

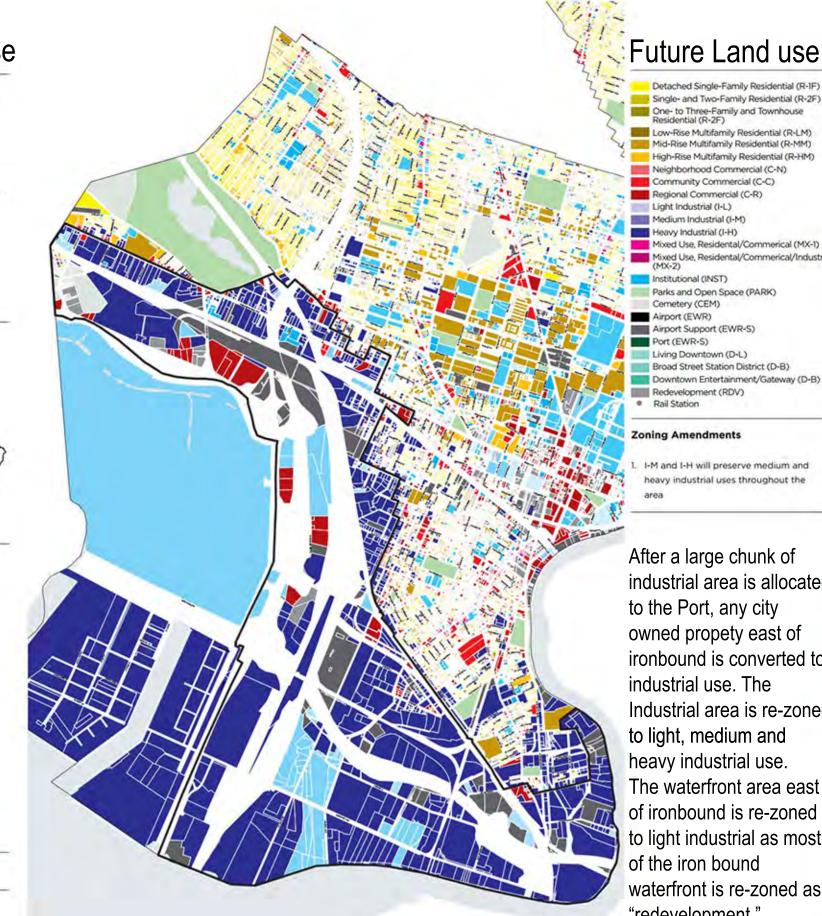
Existing Land use

1-2 Family Residential Multifamily Residential - Low/Mid-Rise Multifamily Residential - High-Rise Mixed-Use Commercal - Retail Commercial - Office/Other Industrial Governmental - Civic and Cultural Governmental - City-Owned Foreclosure Governmental - Other Educational Institutional Open Space and Recreation Cemetery Transportation and Utility Parking Facilities Vacant Rail Station



Source: City of Newark

Orientation



Future Land use

Single- and Two-Family Residential (R-2F) One- to Three-Family and Townhouse Low-Rise Multifamily Residential (R-LM) Mid-Rise Multifamily Residential (R-MM) High-Rise Multifamily Residential (R-HM) Neighborhood Commercial (C-N) Community Commercial (C-C) Regional Commercial (C-R) Medium Industrial (I-M) leavy Industrial (I-H) Mixed Use, Residental/Commerical (MX-1) Mixed Use, Residental/Commerical/Industrial Parks and Open Space (PARK) Airport Support (EWR-S) Living Downtown (D-L) Broad Street Station District (D-B) Downtown Entertainment/Gateway (D-B) Redevelopment (RDV)

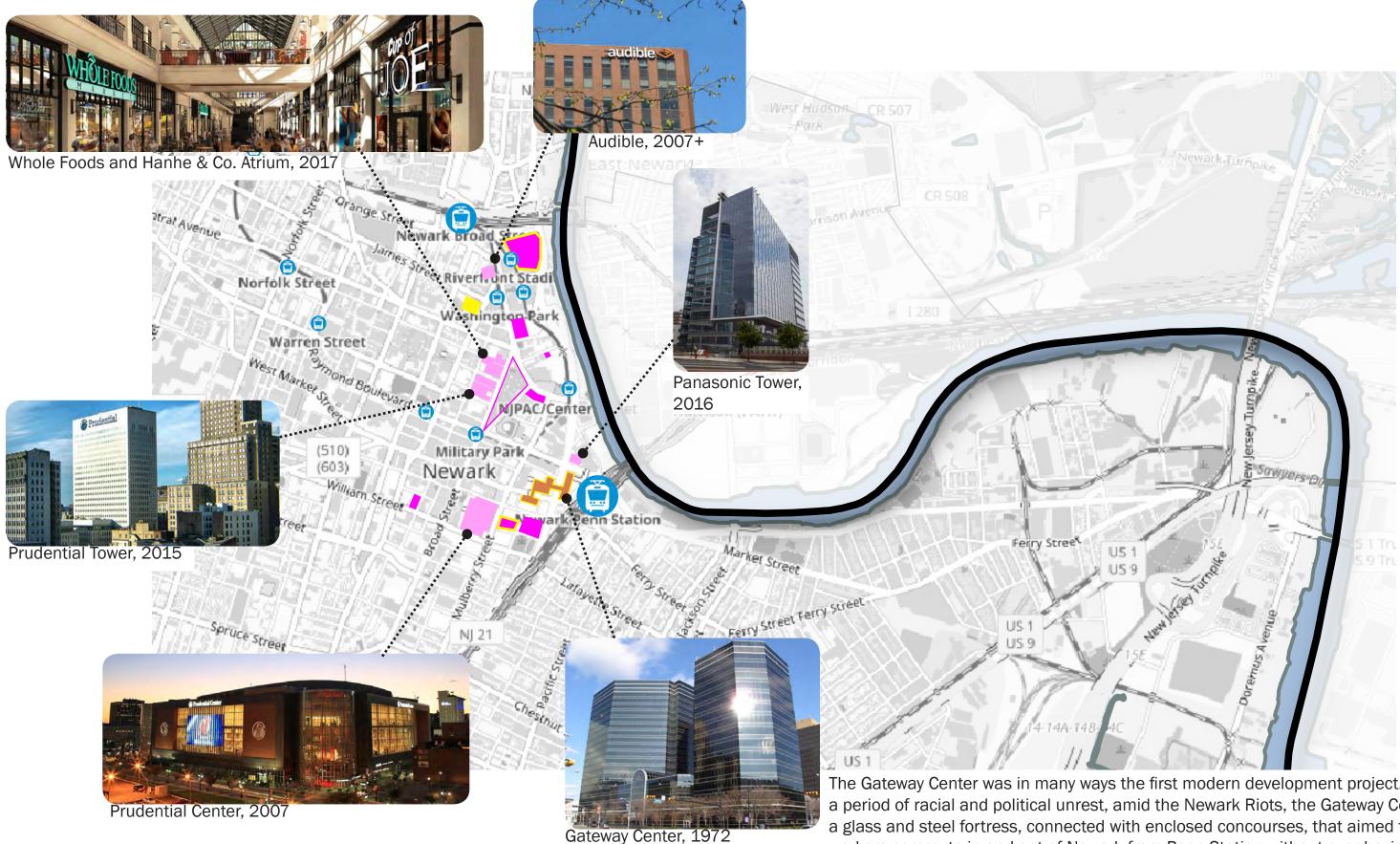
Zoning Amendments

I-M and I-H will preserve medium and heavy industrial uses throughout the

After a large chunk of industrial area is allocated to the Port, any city owned propety east of ironbound is converted to industrial use. The Industrial area is re-zoned to light, medium and heavy industrial use. The waterfront area east of ironbound is re-zoned to light industrial as most of the iron bound waterfront is re-zoned as "redevelopment."



NEWARK RECENT DEVELOPMENT



The Gateway Center was in many ways the first modern development project. Built during a period of racial and political unrest, amid the Newark Riots, the Gateway Center was a glass and steel fortress, connected with enclosed concourses, that aimed to let office workers commute in and out of Newark from Penn Station without ever having to set foot on the Newark streets. Today it sits largely unused.

NEWARK FUTURE DEVELOPMENT

Former Newark Bears stadium sold to NYC developer for \$23M

h 20, 2016 at 12:24 PM, Posted on March 20, 2016 at 7:00 AM

246-Unit Residential Conversion Planned At 20-Story Office Tower, 540 Broad Street, Newark

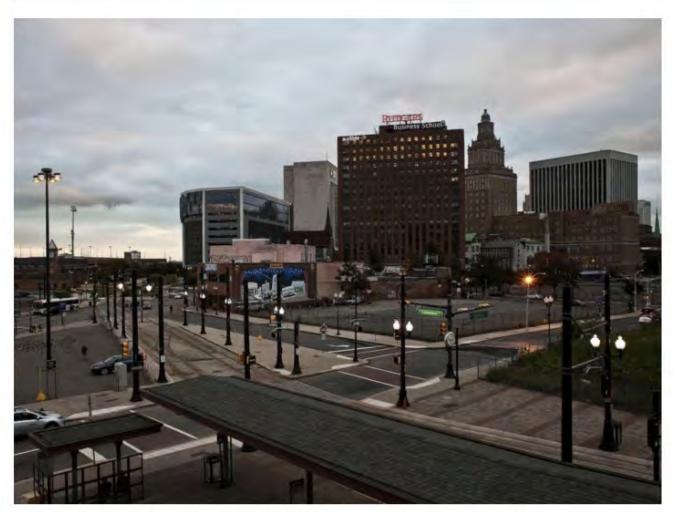


Perkins Eastman

NEWARK FUTURE DEVELOPMENT **BID FOR AMAZON HQ2**

Newark Says, Hey Amazon, Look Over Here

By CHARLES V. BAGLI OCT. 16, 2017



Newark has much of what Amazon wants in a location for its second headquarters - good public transportation, a skilled work force and within a metro area of more than one million residents, city officials and developers said. Bryan Anselm for The New York Times

"The mayor boasted his city's transportation infrastructure and its proximity to Newark International Airport and second busiest seaport in the nation. Not to mention, Barak said, Newark has the fastest broadband internet connection in the country."



Newark makes bid for Amazon HQ2

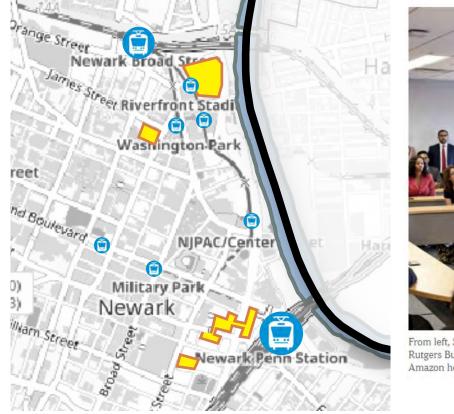
Could New Jersey be the e-tailer's new home?

By Bloomberg News

(f) 87 (in) 3 (P) (I) (9)

"New Jersey Governor Chris Christie is seeking to deploy \$7 billion in potential tax credits to lure Amazon's planned second headquarters to Newark, which has been struggling to stage a broad economic revival since it was devastated by riots in 1967.

The proposal would offset state and city taxes, including an incentive through New Jersey's Economic Development Authority that could reach \$5 billion over 10 years, the governor's office said Monday in a statement. The remainder of the tax breaks would come from a \$1 billion city property tax abatement and a wage tax waiver of \$1 billion for employees.



Potential Amazon HQ2 Sites identified in Newark

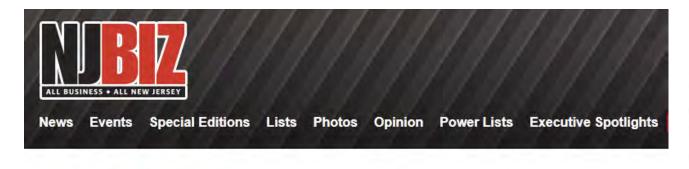
Newark "sits directly above the fiber optic cable spine running along the Eastern Seaboard, allowing companies to tap into some of the fastest internet services in the country and among the least expensive ultra-broadband network."



From left, Senator Cory A. Booker, Gov. Chris Christie of New Jersey and Mayor Ras J. Baraka of Newark at Rutgers Business School on Monday where it was announced that Newark is the state's official bid in the Amazon headquarters race, Bryan Anselm for The New York Times

WHAT PRECEDES DEVELOPMENT? INFRASTRUCTURE. THEN, DOES INFRASTRUCTURE FEED DEVELOPMENT?

NEWARK: FIBER OPTIC "GOLDMINE" ONCE DORMANT, NOW A POTENTIAL FORCE FOR DEVELOPMENT?



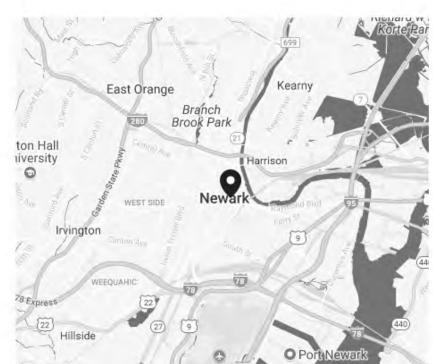
Energy & Utilities Technology

The story behind the infrastructure: Newark's transformation to a fertile fiber optic hub was decades in the making

WHO WE ARE

Newark Fiber is a brand new innovation of the City of Newark in partnership with the Newark Community Economic Development Corporation, ISPs, and fiber providers. It is a big deal and we are excited.

The network will grow to power smart city innovations, public spaces, commercial buildings, and homes.



By Joshua Burd, July 27, 2015 at 9:40 AM

Newark is "where the Internet comes up for air."

That's what Audible.com CEO Don Katz told the packed crowd at his company's headquarters last week, referring to the abundance of telecom and cable providers in the city and "the vast webwork" of fiber optic cable that runs below its streets. That network is the cornerstone of the new accelerator space he was unveiling, offering "lightning-fast Wi-Fi" and the promise of making Newark a hub for tech startups.

But as he and other business leaders will point out, that's only scratching the surface.



United Fiber President Christopher Lodge: "Newark, for us, is a critical junction. (COURTESY UNITED FIBER)

Newark always has been a magnet for commerce and infrastructure — from shipping lines to rail lines to telephone lines — but experts say the push for ultra-fast Internet and data transmission in recent years has led utilities and other ventures to develop one of the best fiber networks in the country. That has resulted in a wealth of "dark," or unused, fiber throughout the city, an asset that could be a boon to the business community and attract new types of investment

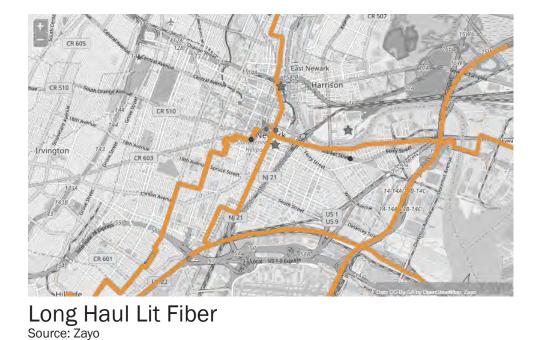
Newark sits on a figurative goldmine of "dark" or unused fiber, an asset that other cities may covet. Why and how?

1. It is in the heart of the Northeast Corridor and between New York City and the rest of the country.

2. Since it has been a longtime hub of infrastructure (from railroads to telegraph lines to telephone lines), many utility and high-tech companies are in Newark. 3. In the past 20 years, those companies (such as Verizon, data services providers and utilities) have invested heavily in fiber.

4. At times, the city has asked those companies to install more than was needed, creating a surplus of dark fiber for future use

NEWARK: FIBER OPTIC



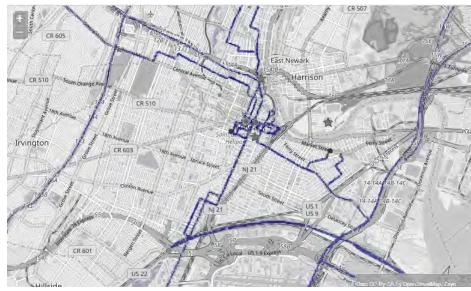
Long Haul Dark Fiber



Source: Zayo



Metro Lit Fiber Source: Zayo



Metro Dark Fiber Source: Zayo

Definitions: Metro fiber - an optic fiber which connects several enterprises in a metropolitan area providing high speed broadband connection. High speed data is transmitted as light impulses. These fibers are often leased out by providers to other companies.

Lit fiber - traditional Internet Service Pprovider owns and maintains the equipment to light the fiber. The customer is free of the maintenance and operation of the equipment.

Dark fiber - refers to unused or 'dark' network infrastructure that is a mixture of cabling, switches and repeaters. ... A client will lease unused strands of 'dark' fiber optic cable to create their own privately-operated optical fibre network rather than just leasing bandwidth.

Fiber Backbone- Under Construction

NEWARK: FIBER OPTIC NETWORK



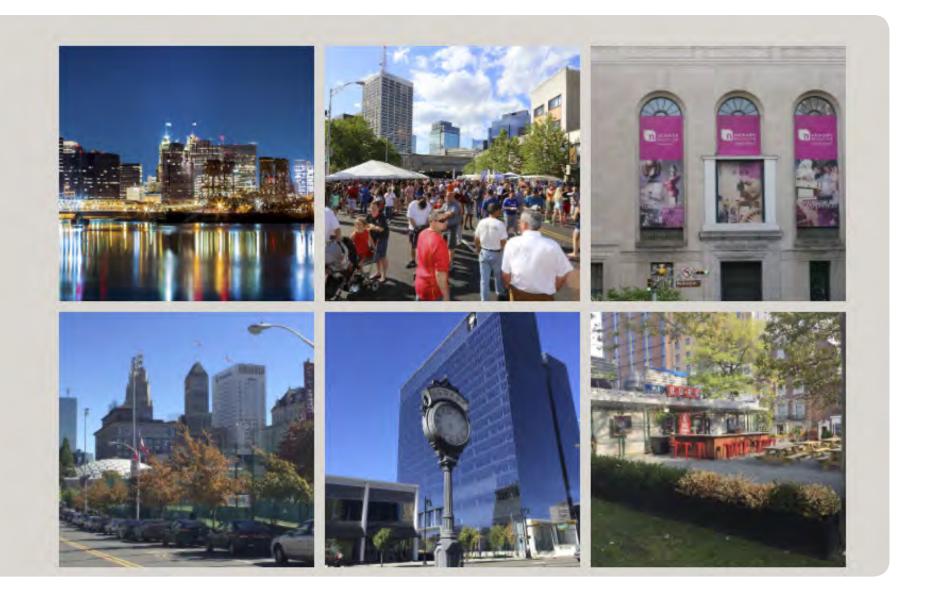
Newark Fiber Optic Cable Map Combined

NEWARK: DOWNTOWN DEVELOPMENT... WHAT DOES IT MEAN FOR THE IRONBOUND?

DOWNTOWN NEWARK NEIGHBORHOOD

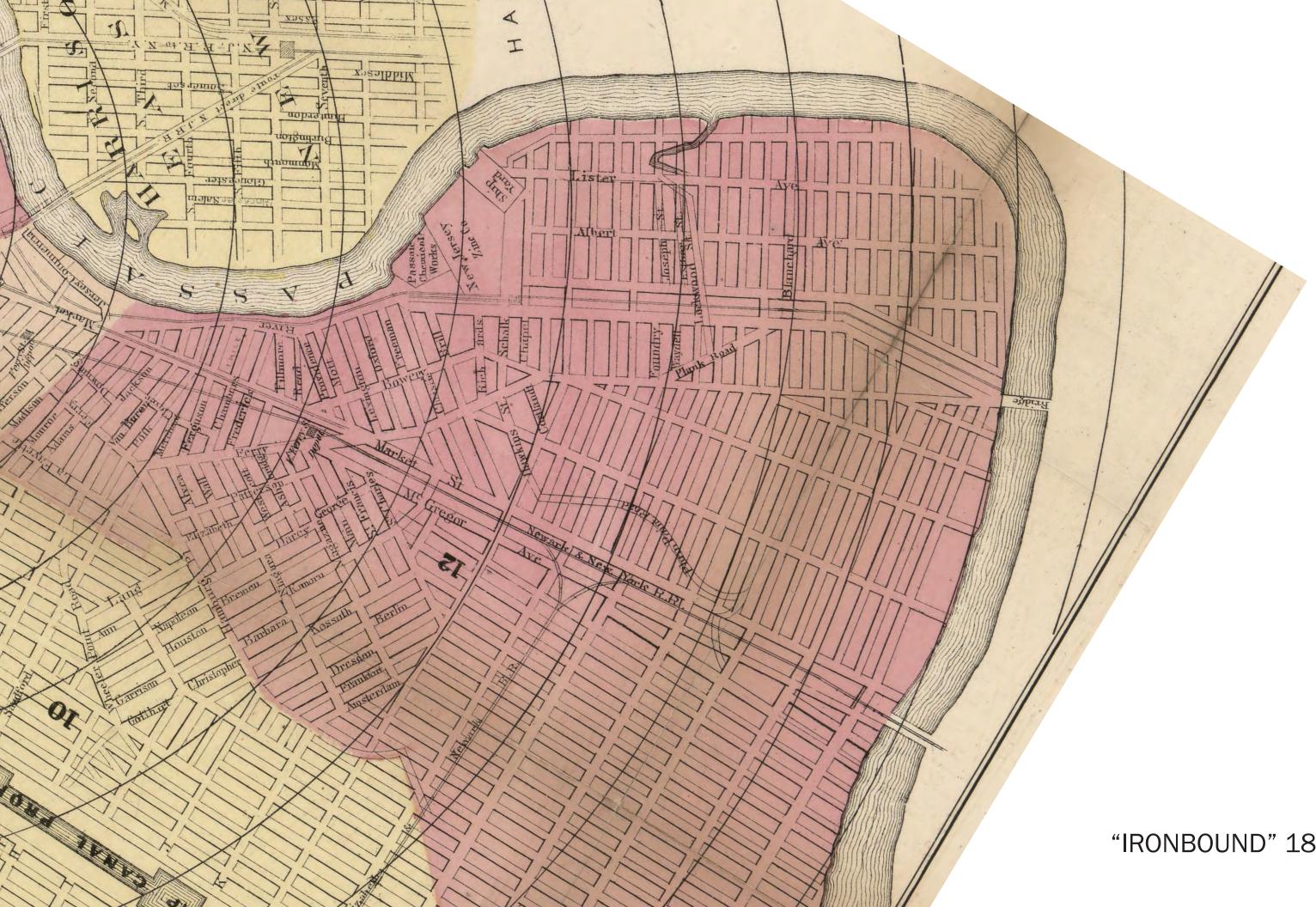
Ironside Newark is perfectly situated so you'll never be more than a few steps away from the exciting things that the downtown district has to offer. With museums, premier performance spaces like the New Jersey Performing Arts Center and the Prudential Center, and the culinary rich Ironbound District, downtown is yours to discover. It's no wonder why Newark is buzzing with excitement, and it's the perfect place for your business today and tomorrow.

WITH IRONSIDE NEWARK TAKING DOWNTOWN TO NEW HEIGHTS, THERE'S NEVER BEEN A BETTER TIME TO ENVISION YOUR FUTURE IN NEWARK.



Much of the current development and redevelopment in Newark is concentrated at the downtown center and near the universities. However, the Ironbound neighborhood and its cultural depth is being used as a marketing tool to entice businesses and new residents.





"IRONBOUND" 1878



"IRONBOUND" 1879



"IRONBOUND" 1885

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IRONBOUND" 1890

NEWARK - VACANT & ABANDONED LOTS

Abandoned Lots in the 2012 Newark Masterplan Defactives Single-Family Revisional (R-IF) Development Single- and Two-Family Residential (R-2F) As the City moves to identify the vacant lots, there One to Three Farry and Townsouse Residential (R-2F) Low-Rise Multiantly Residential (R-LH) are next to none city owned vacant lots in the Ironbound. Mid-Rise Mutofamily Residential (R-HR-1) High-Rise Hallandy Residential (R-H4-0) Neighborhood Commercial (C-N) Whereas in the rest of Newark, intended uses Control by Contractal (C-C) Regional Communial (C-R) development in the vacant lots is majorly residential, Ught Industrial O-L.) Hedum Industrial (I-H) Heavy Inclusted (I-H) institutional and parks. Moved Use Rostor Carrower Car (MCX-1) Mand Use, Data Contractor (MDL-2) Insin bond (INST) Parks and Open Space (PARO) Cornetory (CEM) Airport (EWR) Airport Support (EWR-S Port (PORT) Living Qowntown (D-L) Brood Street Station District (D-8) Down Erenary Redevelopment Plan Area (RDV) Existing Vacant Lots identified by the ciy in 2011 Abandoned Property Vacant Lots

2011

2012

Proposed Future Land use of the City owned Vacant or





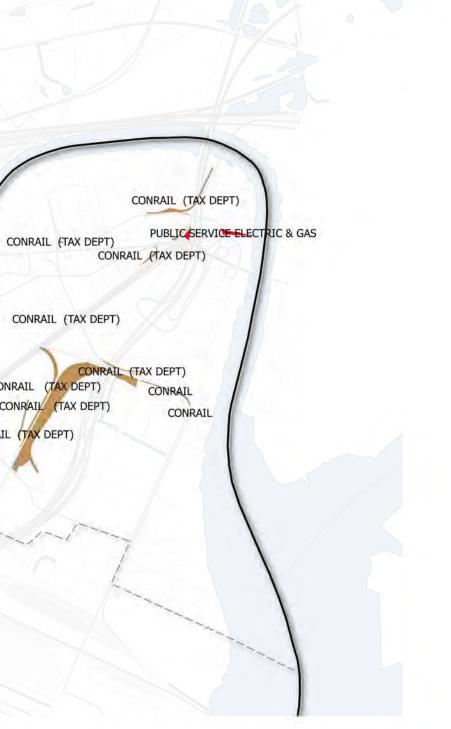
Source: Newark Open Data Deeds and Tax Maps 2015

Land Value

PSE&GCO-TAX DEPT CONRAIL (TAX DEPT) PUBLIC SERVICE ELECTRIC & GAS CO. CONRAIL (TAX DEPT) CONRAIL (TAX DEPT) CONRAIL (TAX DEPT) NJ TELECOM EXCHANGE ACQUISITION CONRAIL (TAX DEPT) CONRAIL (TAX DEPT) CONRAIL (TAX DEPT) CONRAIL (TAX DEPT)

Source: Newark Open Data Deeds and Tax Maps 2015

Who Owns these Properties? - Transportation + Utility Companies





Block-Lot: 2438-58 / 2438-59 / 2438-57 **Owner: Diamond Shamrock Chemical Land Holdings** Owner Address: East Brunswick, NJ Acerage: 2.28 / 1.82 / 1.72 Sale Date: 8/28/1986 Sale Price: \$0 Land Value: \$119,300 / \$96,100 / \$90,700



Block-Lot: 5011-1.01 **Owner: Metro Port LLC** Owner Address: Summit, NJ Acerage: 1.43 Sale Date: 5/9/2008 Sale Price: \$0 Land Value: \$503,300

DYES & CHEMICAL CORP.ATTN.TAX DEPT. LUSAMER AUTO BODY CORP DYES & CHEMICAL CORP. NJ TELECOM EXCHANGE ACQUISITION DIAMOND HARD CHROMIUM CO., INC. KEARNY STEEL GONTAINER CORP TECH LEASING CORP. MADEIRA CONCRETE INC.

Source: Newark Open Data Deeds and Tax Maps 2015

Who Owns these Properties? - Industrial Holdings/Leasing Companies

PSE&GCO - TAX DEPT

DIAMOND SHAMROCK CHEM LAND HOLD INC

B-LINE TRUCKING INC

MOND PLAZA INDUST PARK ASSOC

METRO PORT LLC

PITT-CONSOL CHEM. (CONTINENTAL OIL)

PORT HOLDINGS, LLC ELAN CHEMICAL CO

IRONBOUND SELF STORAGE LLC

Block-Lot: 2438-1 Owner: Morris Lister Avenue Assoc. Owner Address: Rutherford, NJ Acerage: 15.46 Sale Date: 1/4/2011 Sale Price: \$5,040,160 Land Value: \$5,411,000





Block-Lot: 2408-1 Owner: Newark Farmers Market Owner Address: Newark, NJ Acerage: 7.14 Sale Date: 3/18/2011 Sale Price: \$1 Land Value: \$3,571,000 *Wholesale produce market



Block-Lot: 5000.02-9 / 5000.02-1.02 / 5000.02-1 Owner: Dente Brothers Owner Address: Newark, NJ Acerage: 0.63 / 1.19 / 3.48 Sale Date: 10/22/1992 ; 4/22/2014 Sale Price: \$27,630 / \$115,000 / \$115,000 Land Value: \$235,200 / \$418,300 / \$121,8000



Source: Newark Open Data Deeds and Tax Maps 2015

Who Owns these Properties? - LLCs, Land Banks, Development Groups



Block-Lot: 2422-19 Owner: John & Mary Vuocolo Owner Address: Newark, NJ Acerage: 0.17 Sale Date: 8/15/1995 Sale Price: \$0 Land Value: \$70,000



Block-Lot: 5016-30 Owner: Anthony Devino Owner Address: Newark, NJ Acerage: 1.45 Sale Date: 11/28/2011 Sale Price: \$0 Land Value: \$430,500



Source: Newark Open Data Deeds and Tax Maps 2015

Who Owns these Properties? - Individuals, Landlords

What does the re-development plan say about the Vacant lots?

What does the re-development plan of 2011-2012 say about historic districts?

"Ensure that vacant lots do not adversely affect pedestrian safety or comfort and contribute to the continuty of a visually attractive streetscape"

"Is this the only usage/purpose that the vacant lots can provide?"

Empty Lots

ots with ses, such as



How can the Vacant and Abandoned Lots be utilized? Growing crops in the city, without soil or natural light could be a step forward. The creation of more green spaces (parks, green roofs, rain gardens, urban farming) that can equitably used and shared by all residents in the community.

The World's Largest Vertical Farm Is in Newark

The prospects of Urban Farming in Newark

What is happening right now?

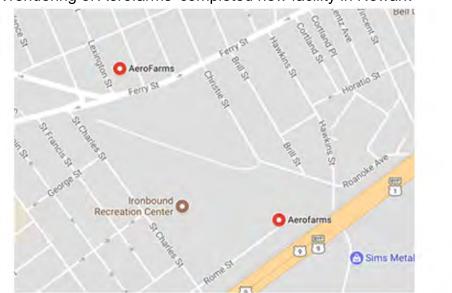
An indoor- agriculture company, Aerofarms leased a closed down property owned by Grammer, Dempsey & Hudson and installed the 70,000 sq.ft of floor space with a vertical farm. The Spatial layout of the building(Previously manufacturing warehouse) allows grow tables to be stacked twelve layers tall up to 36feet high and 80 feet long.

Produce: kale, bok choi, watercress, arugula, red leaf lettuce, mizuna, baby salad greens.

Outdoor farming consumes seventy per cent of the planet's freshwater; a vertical farm uses only a small amount of water compared with a regular farm.

> Can aeroponic and urban farming be a community borne effort? How can the area undergoing massive development utilize urban farming at the grassroot level and aeroponic farming at the institutional as part of resiliency plan?





LED LIGHT LEAFY GF AEROPONIC N



What is Aeroponic farming? Aeroponic farming uses about 70% less water than hydroponic farming, which grows plants in water; hydroponic farming uses 70% less water than regular farming. If crops can be raised without soil and with a much reduced weight of water, you can move their beds more easily and stack them high.



IRONBOUND - DEVELOPMENT STRATEGIES FOR RESILIENCY

Are Landowners/Potential Landowners/Stakeholders aware of the Flood Risks? Are there Resiliency plans, policies in place? The next step in the research will be to further develop these strategies:

Scales of Development and Potential Resiliency Strategies

 Transportation/Infrastructure
Plan for redundancy; elevate critical infrastructure above flood plain where possible, use flood barriers where necessary

2. Industrial

- Retrofit large buildings with green roofs/blue roofs, use green infrastructure where possible; required compliance with EPA guidelines on environmental contamination

3. Commercial/Developer

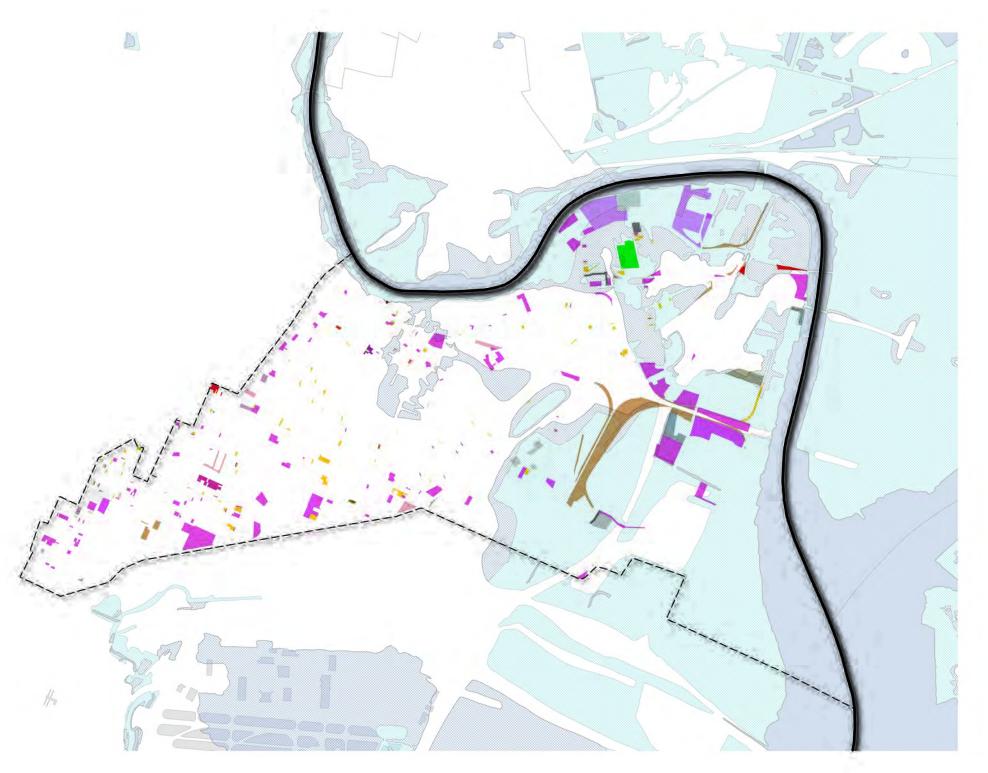
- Design Rainwater Harvesting systems, increased stormwater detention, blue roofs; required environmental remediation for contaminated soils

4. Residential/Individual

- "Prepare Together" initiative on climate change and resiliency (joined 2017, giving individuals and communities ownership and control of design)

5. City of Newark

- Pass local laws requiring LEED, provide incentives such as tax credits for Green Infrastructure; use city owned lots within flood zone for landscape flood mitigation buffers



Source: Newark Open Data Deeds and Tax Maps 2015; FEMA National Flood Hazard Layer

100-year flood plain 500-year flood plain