

NOW /
LATER

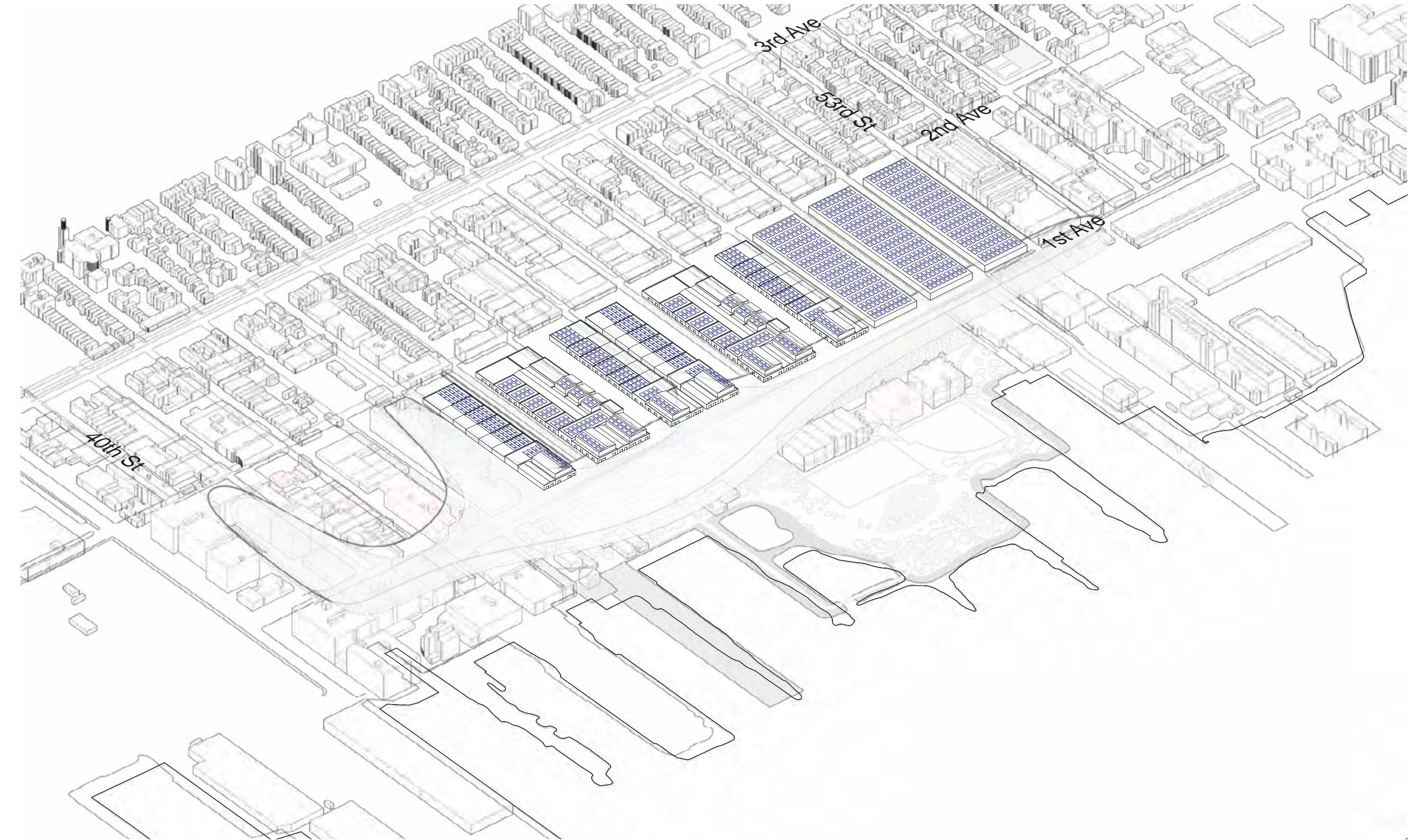
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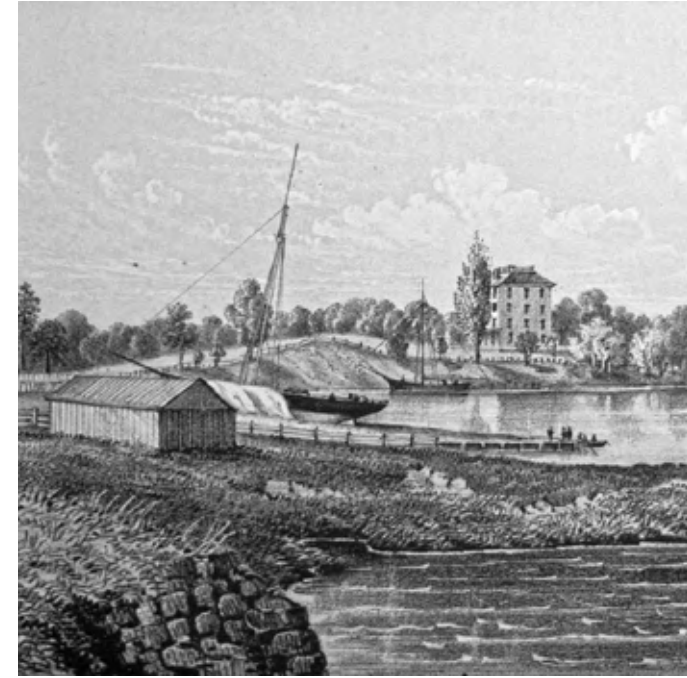
Executive Summary

Now/Later Studio seeks to decentralize the food distribution network in New York City through the implementation of a new food distribution centre on our site in Sunset Park, Brooklyn. Currently, the largest food distribution centre in New York is located in Hunts Point in the Bronx, and commercial truck traffic driven through the Brooklyn-Queens Expressway is contributing to a rapid decay in transportation infrastructure in New York, as goods are delivered northbound through the city in order to reach Hunts Point and other final destinations. Our proposal aims to reduce food-related truck traffic through the city by up to 45%, preserving the longevity of critical infrastructure, reducing carbon emissions in the city, and strengthening the resiliency of New York City's food systems as a whole.

The Now/Later Sunset Park Food Distribution Centre advocates for a series of strategies that are synergistic with the conditions of the site and surrounding dependent energy systems and conditions. We have examined and catalogued the existing local food business on-site, urban energy and water infrastructure, and environmental conditions including the floodplain. This proposal preserves and works with existing businesses, siting relevant infrastructure around these and the natural conditions of the site.

Water and energy systems are symbiotic, and an on-site wastewater treatment facility is coupled with a closed-loop energy production system that produces biofuel for local transportation and an N+1 redundancy energy storage bank. A large, hollow berm is designed to protect critical infrastructure, and a direct, physical connection to existing buildings provides an opportunity for pedestrian connection to the buildings, plus imaginings of consumer-level offerings that work in tandem with wholesalers on the site. An existing railway runs adjacent, under the berm, delivering goods to the buildings in conjunction with existing truck routes, now much reduced, and the introduction of a cargo barge terminal. Complete streets, a walkable berm with connection to both the waterfront and businesses, and passenger ferry access, supports a vibrant community overlaid on the industrial programs of the site.





AGRICULTURE



SHIPPING



MANUFACTURING

Site History

The history of the development of the Sunset Park neighborhood is closely tied to the Bush Terminal series of piers and warehouses that marked the Brooklyn waterfront as a major trading port at the end of the 19th-century. Barges and ships carrying freight routinely traversed the Lower New York Bay, and up through the now-infamous Gowanus Canal.

The rich history of our site as a major trading port in Brooklyn provides clues about the surrounding neighborhood's demographics and development. The current landscape of the waterfront in Sunset Park continues to be industrial with residential and commercial occupation upland, and indicates feasibility for a new food distribution centre in this area.

**A · NEW
FREIGHT
CITY**

200 acres of money saving and money making facilities.

The Terminal of all railroads entering New York City.

Manufacturing space in fire-proof buildings—105,000 sq. ft. or any part of it on one floor.

Twenty miles of railroad tracks.

Four thousand satisfied customers among the Nation's greatest merchants.

Gives the bread and butter to 50,000 people.

**A · UNION
FREIGHT
TERMINAL**

Low Rents.

Low Insurance.

No cartage on rail shipments.

Prompt local deliveries.

The Freight Car at the door, at the New York Rate.

Unequaled shipping facilities by rail or water.

Piers 1100 ft. long.

Twenty-seven steamship lines.

Every known storage facility.

One hundred and thirty warehouses.

The largest and best labor market in the country.

BUSH · TERMINAL · CO.

BQE

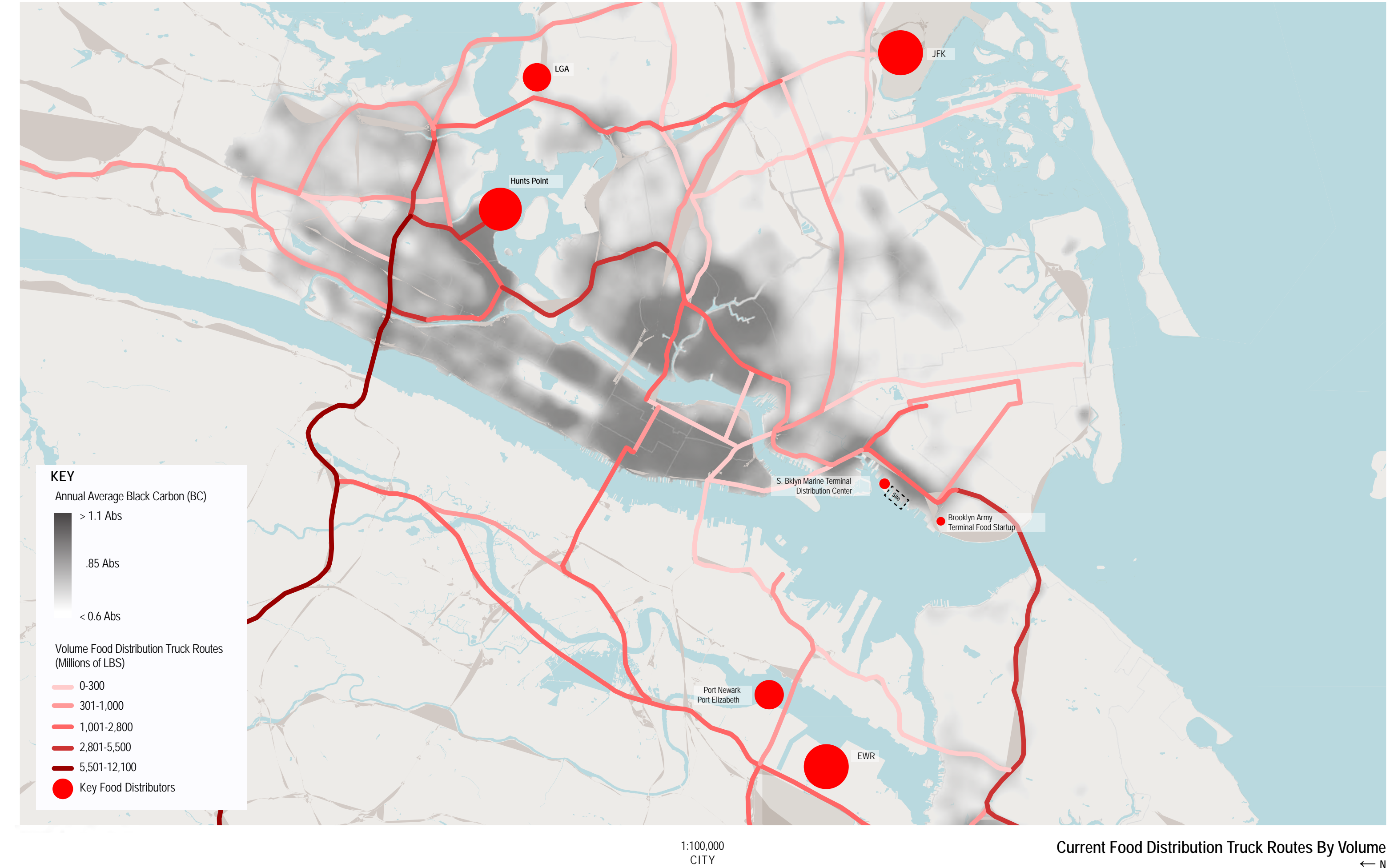
Today, the Brooklyn-Queens Expressway, or the Gowanus Expressway as it is known at the point at which it passes through our site, is a heavily trafficked artery of transportation infrastructure in New York City, seeing more than 15,000 commercial trucks traveling through it daily. The BQE is at severe risk of collapse at the Brooklyn Heights Promenade due to heavy flows of southbound traffic from the Hunts Point Terminal

Food Market. If traffic on this piece of infrastructure is not mitigated or reduced in the immediate future, a rehabilitation proposal for the BQE will cost the city upwards of \$11 Billion to either repair the roadway or alternatively replace with a three-mile long tunnel buried underground.



Current Truck Routes

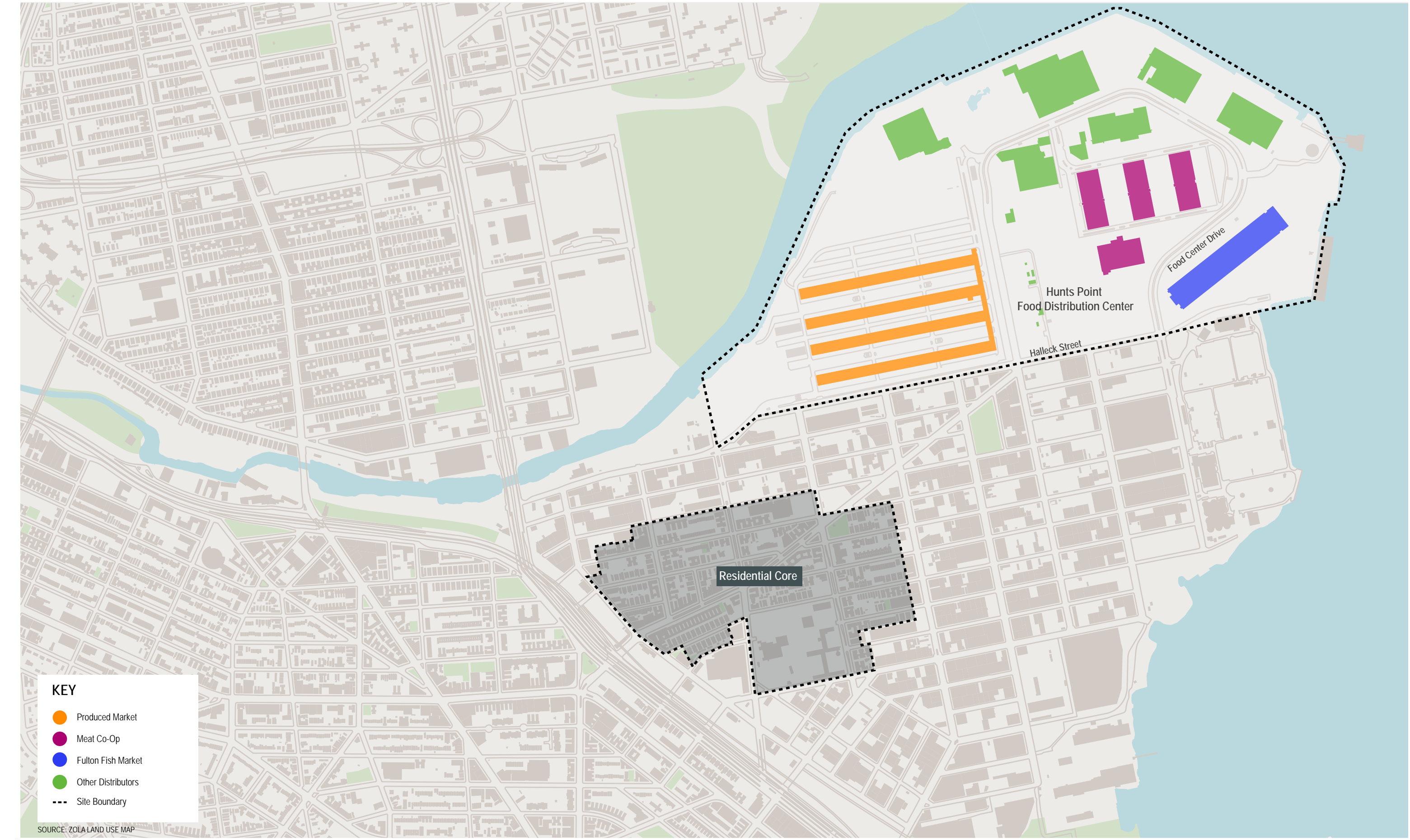
Current truck routes outlined on the map shown here highlight the burden of truck traffic on existing road transportation infrastructure in New York City. Air quality is directly correlated to the number of trucks on these routes, and pollution concentrates (in these areas), contributing to lower quality of life, increased risk of health conditions, and shorter predicted lifespans for people living in these communities.



Hunts Point + The Last Mile

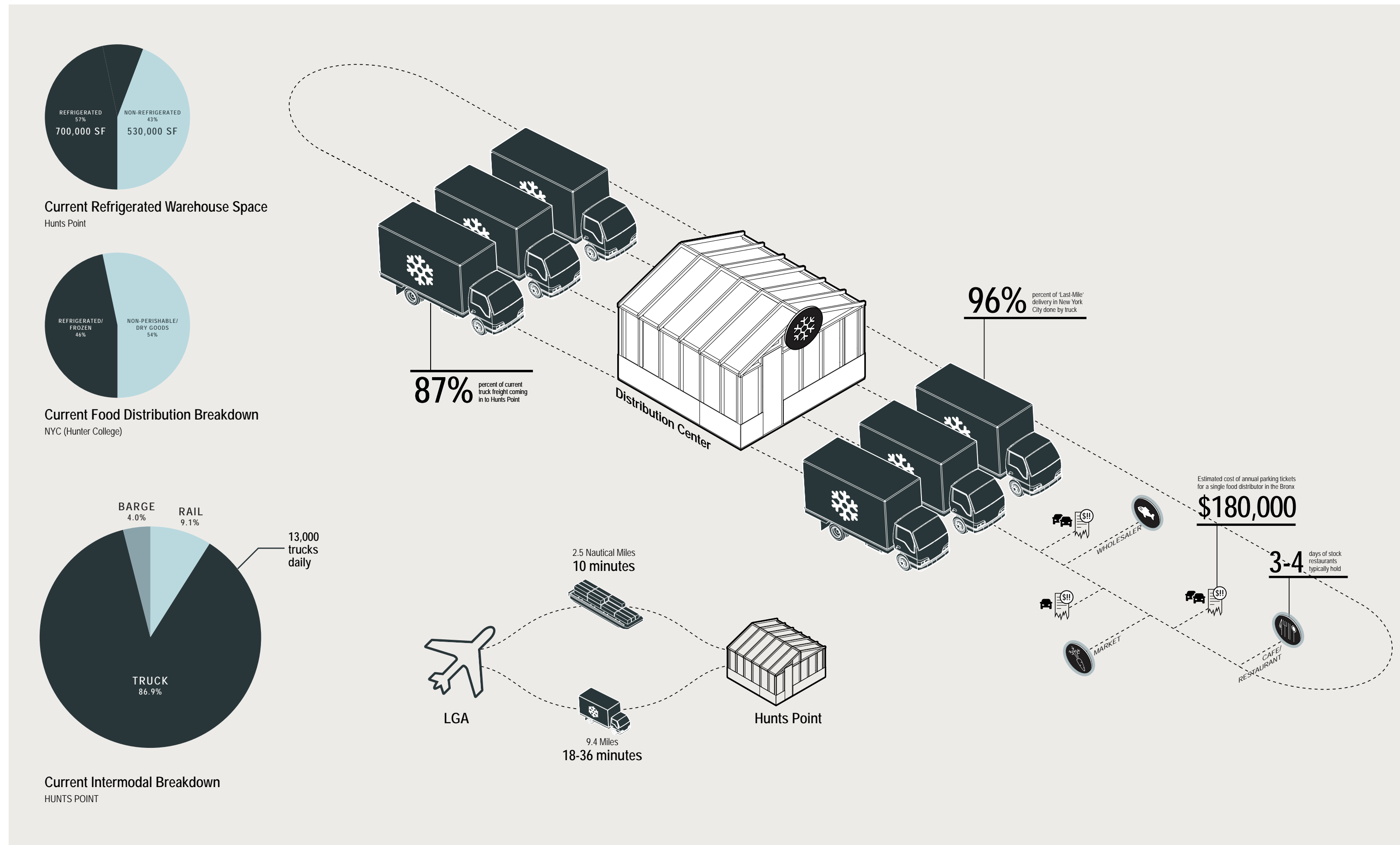
Hunts Point is currently New York City's largest food distribution hub, servicing about 60% of New York's fresh produce, meat and fish markets, making it a near-monopoly on the local supply chain network.

The Last Mile strategy at Hunts Point is almost wholly dependent on trucks, with over 87% of incoming freight delivered by truck, even though up to 50% of these goods are either non-perishable or non-refrigerated goods that do not require the speed or qualities of delivery afforded by this mode of transportation. Over 13,000 trucks pass through Hunts Point daily, and 96% of outbound traffic from Hunts Point is delivered by truck. Additionally, Hunts Point is known as a 'food desert', with 75% of the food waste produced on site deposited directly into the waste stream with zero recovery.



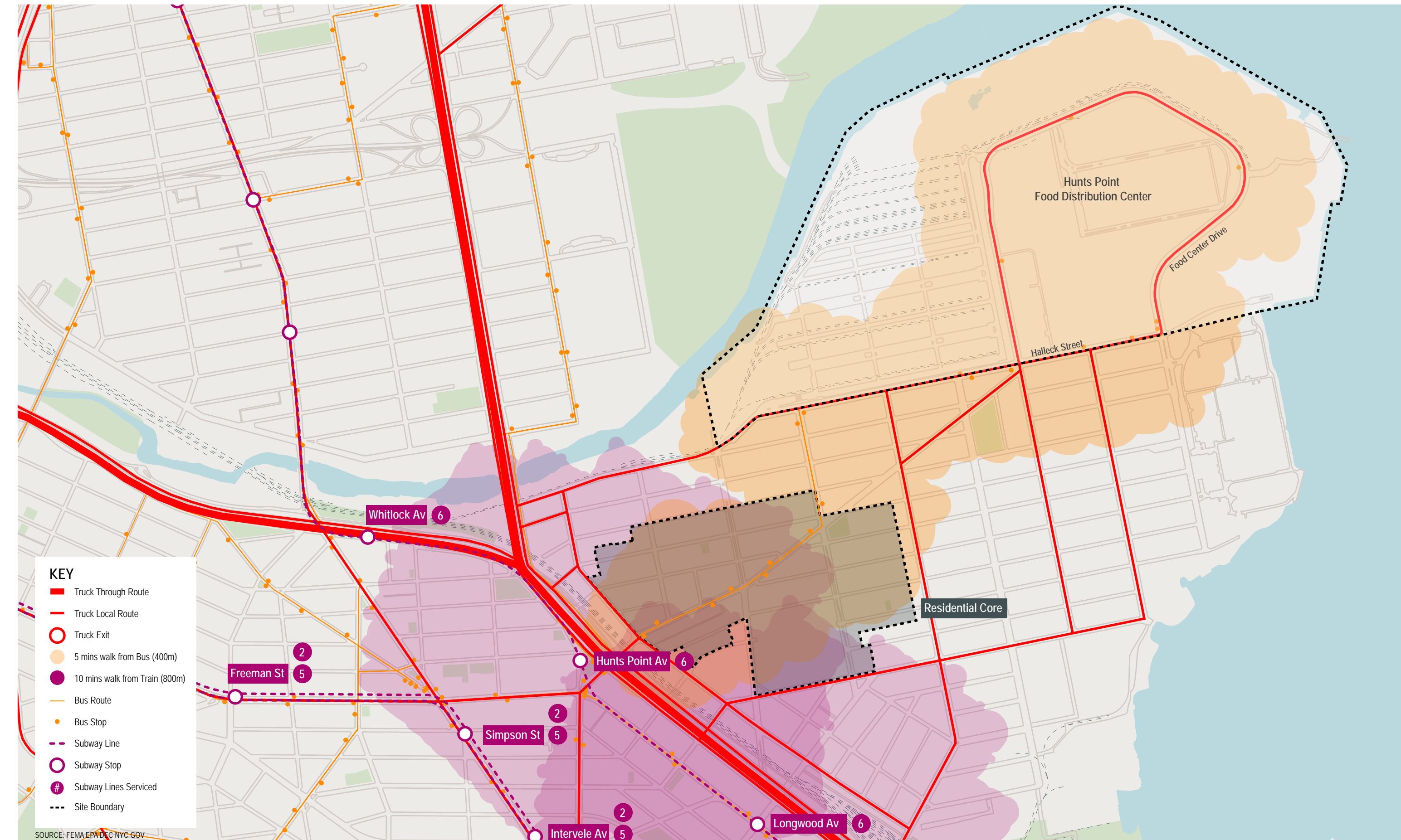
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Site Overview

Hunts Point Distribution Center
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Last Mile, Hunts Point



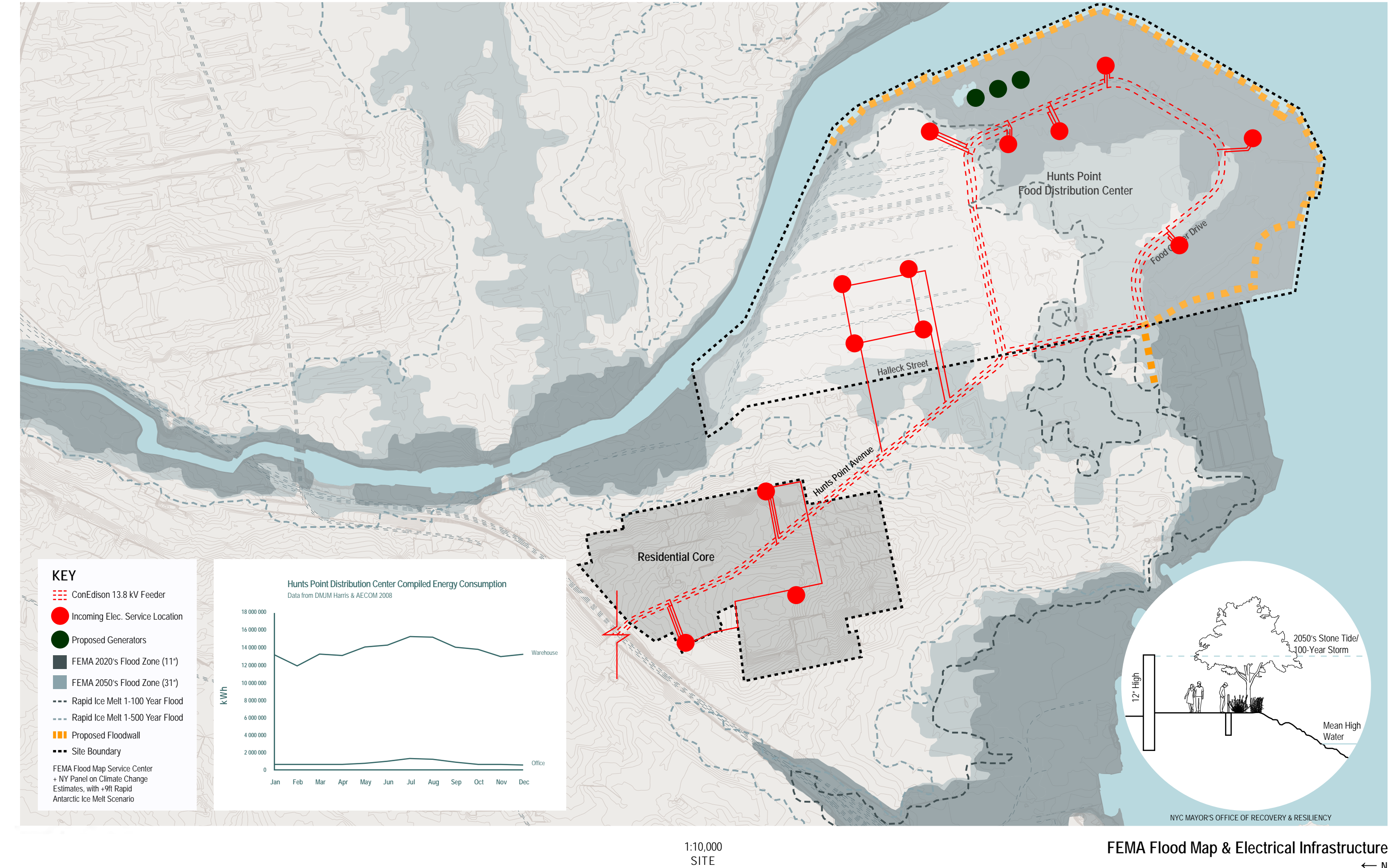
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SITE

Land Transportation



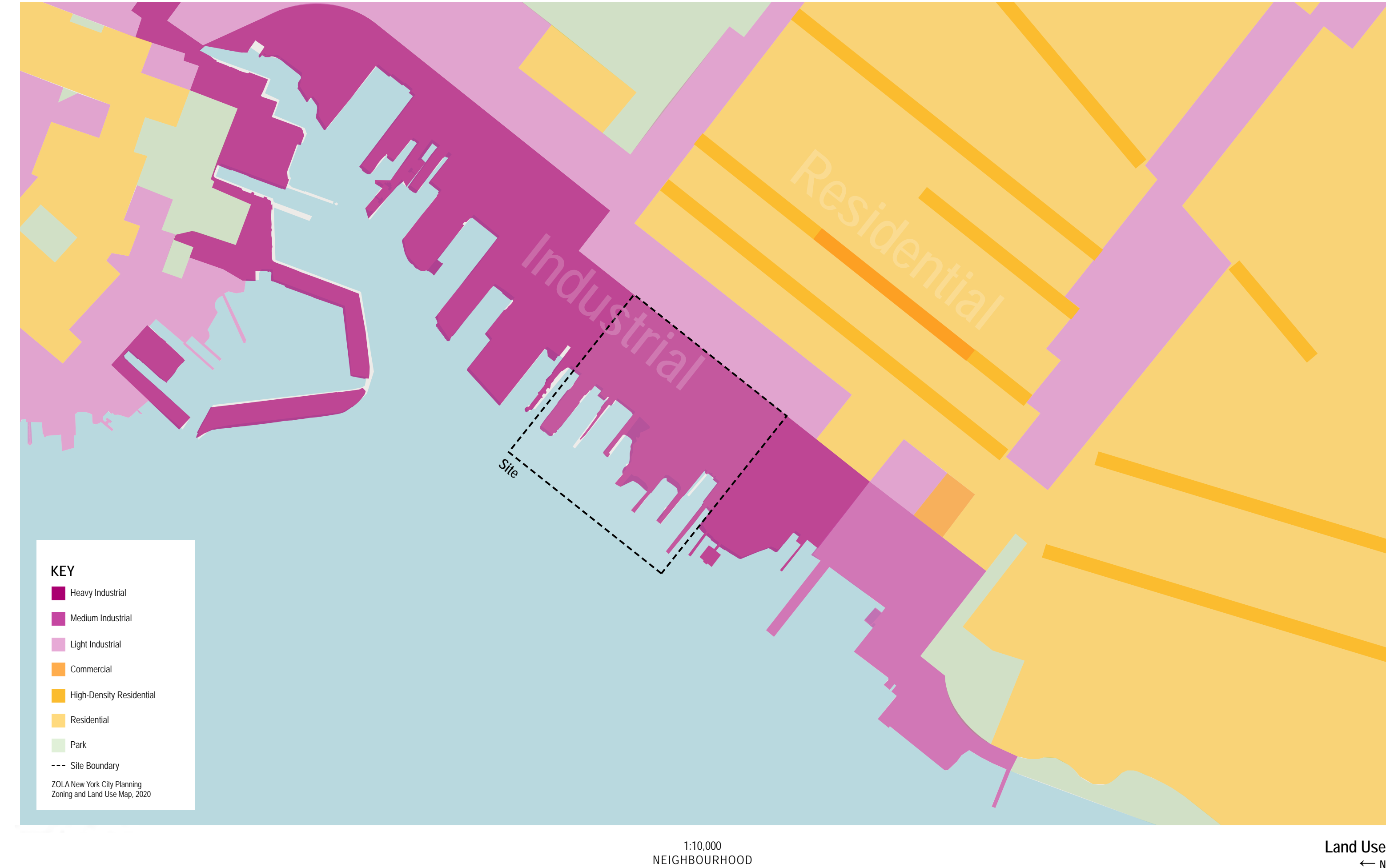
Hunts Point Resiliency Strategy

The local flood resiliency strategy at Hunts Point is conventional, if lacking. A 12'-0" concrete flood wall has been proposed to be erected around the perimeter of the site to ward off damage from an impending 100-year storm surge. Back-up generators, critical to the operation of the site in the event of an energy or weather-related catastrophe, are currently non-existent. A proposal for diesel generators has been approved, with locations in questionably vulnerable areas, although these generators have yet to actually materialize on the site. As part of our research, we see Hunts Point as a both a partner to our proposal, but also as a case study for an opportunity to improve on.



Sunset Park

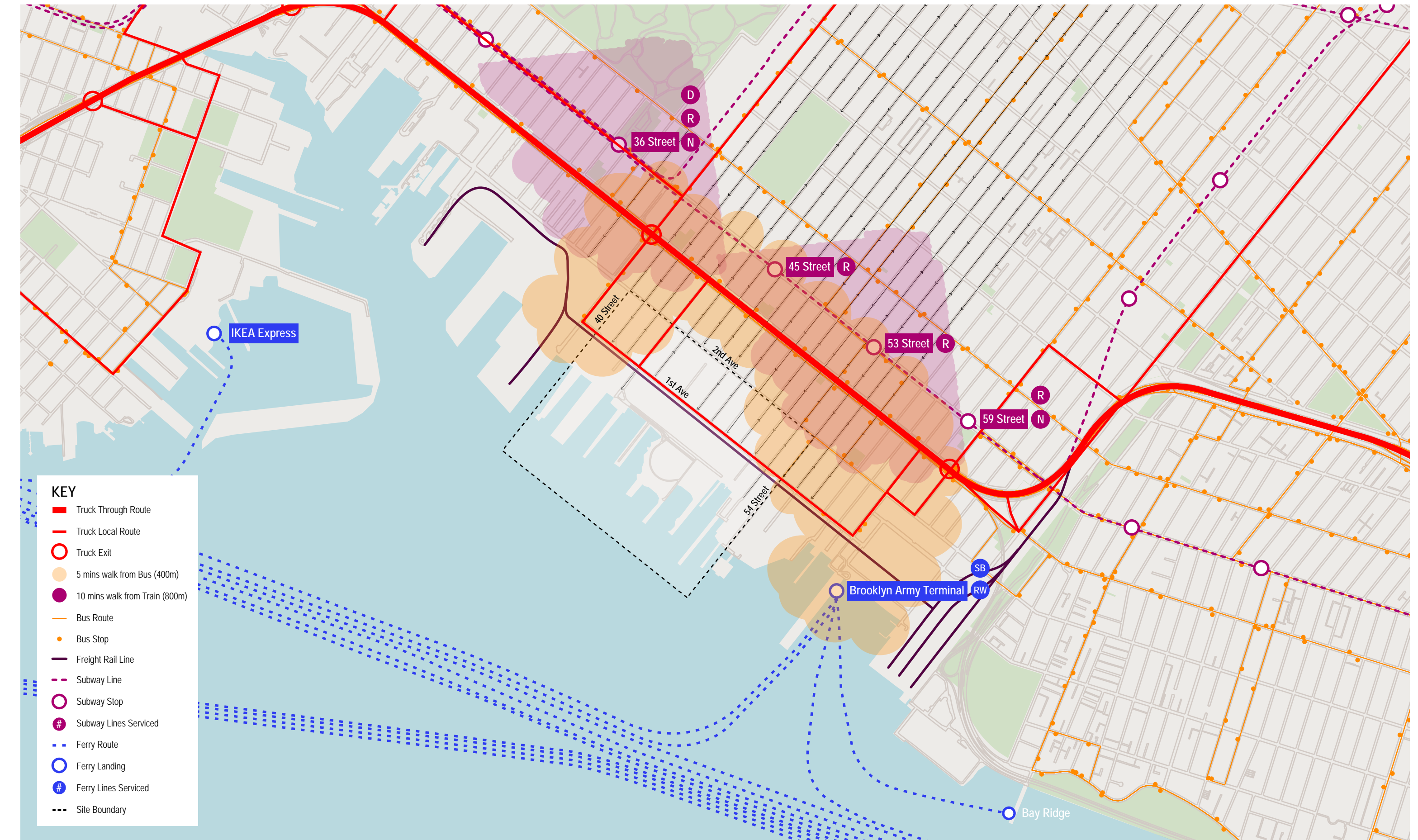
The waterfront site at Sunset Park is zoned primarily for light industrial, with convenient access to waterfront piers and adjacencies to public transportation, established truck traffic routes and downland from a well-established residential neighborhood.



Local Transportation Systems

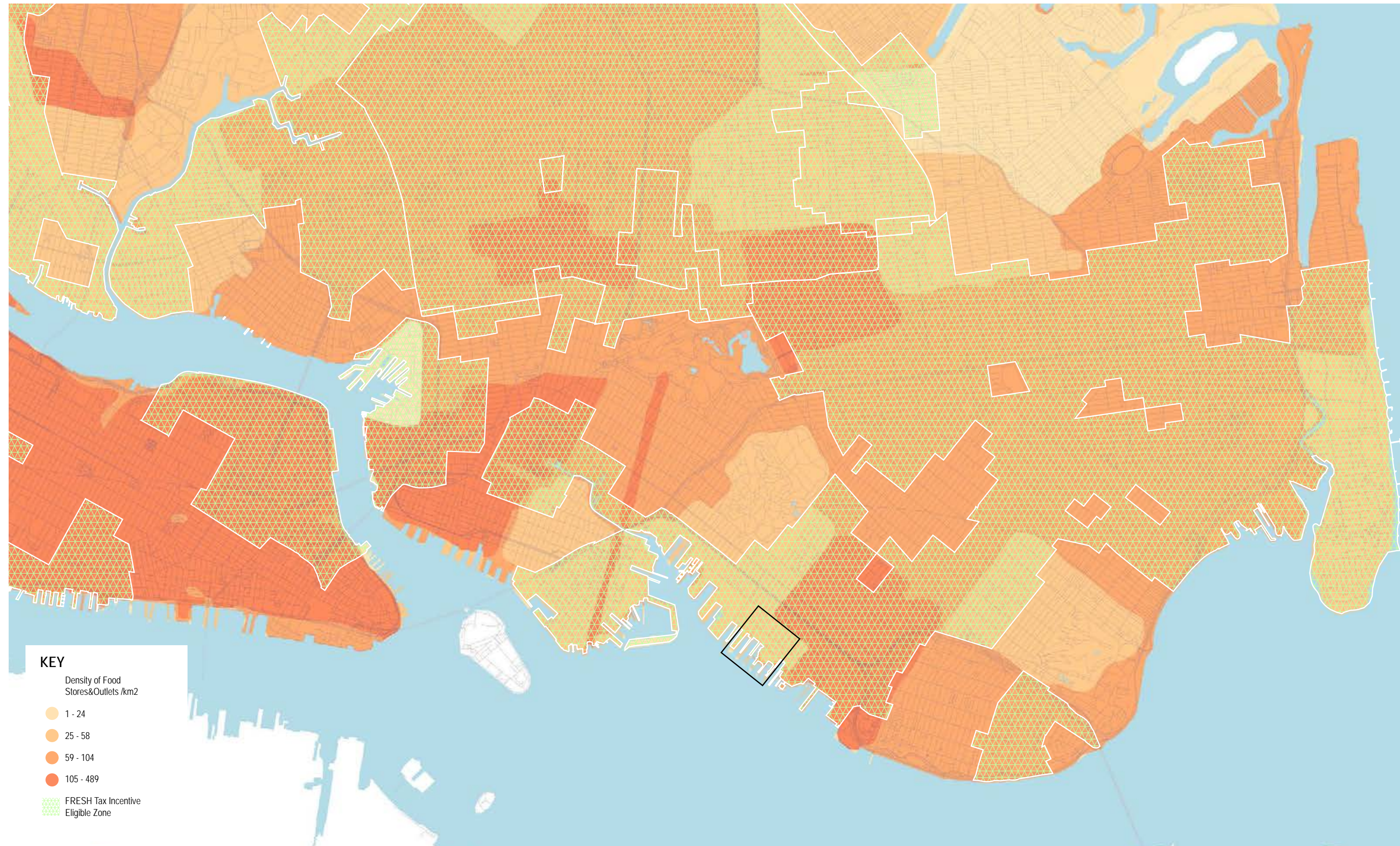
Like Hunts Point, the Sunset Park site is also situated within a Fresh Food Zone and is eligible for tax incentives for building resilient food infrastructure on this site.

Along with preserving the existing food businesses, our proposal is to decentralize New York's food distribution system with a major location sited in Sunset Park to alleviate pressure on intra-city transportation networks.



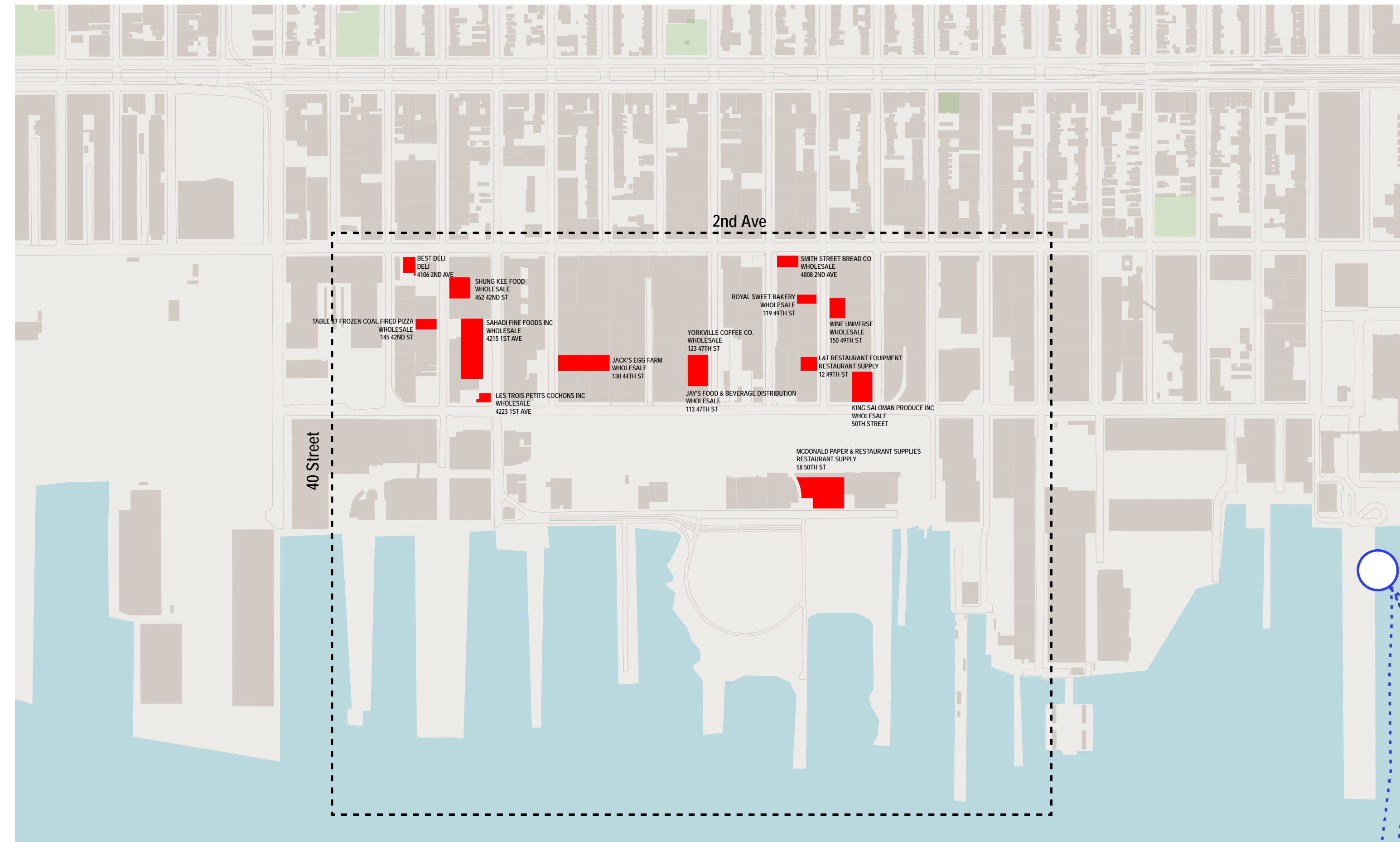
1:15,000
NEIGHBOURHOOD

Local Transportation
← N



1:50,000
BOROUGH

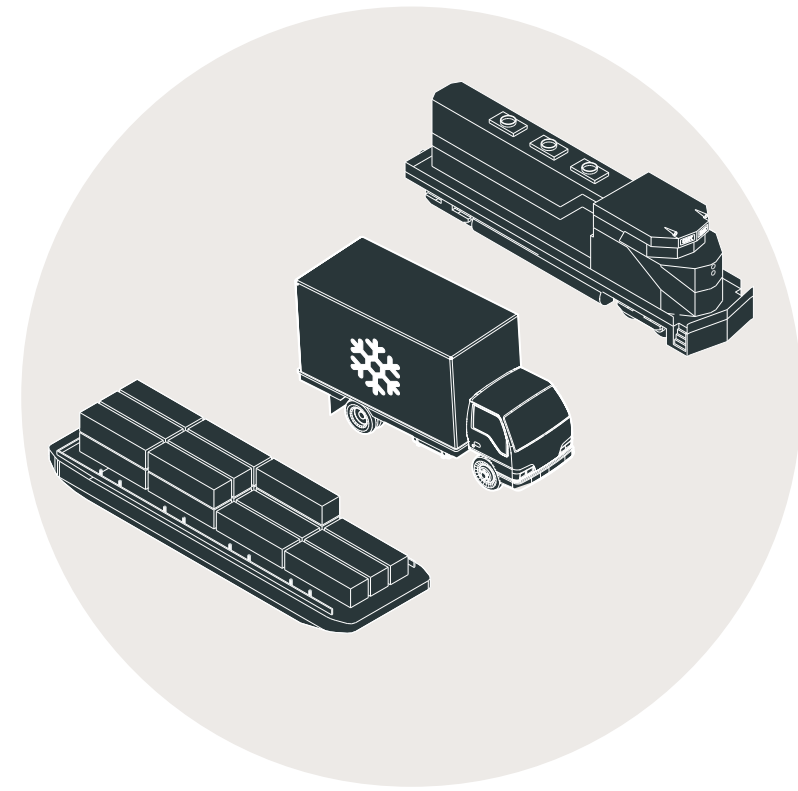
Food Desert
← N



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SITE

Existing Food Businesses
← N

Intermodal
Freight Network



Closed Loop
Energy System



Resilient
Infrastructure

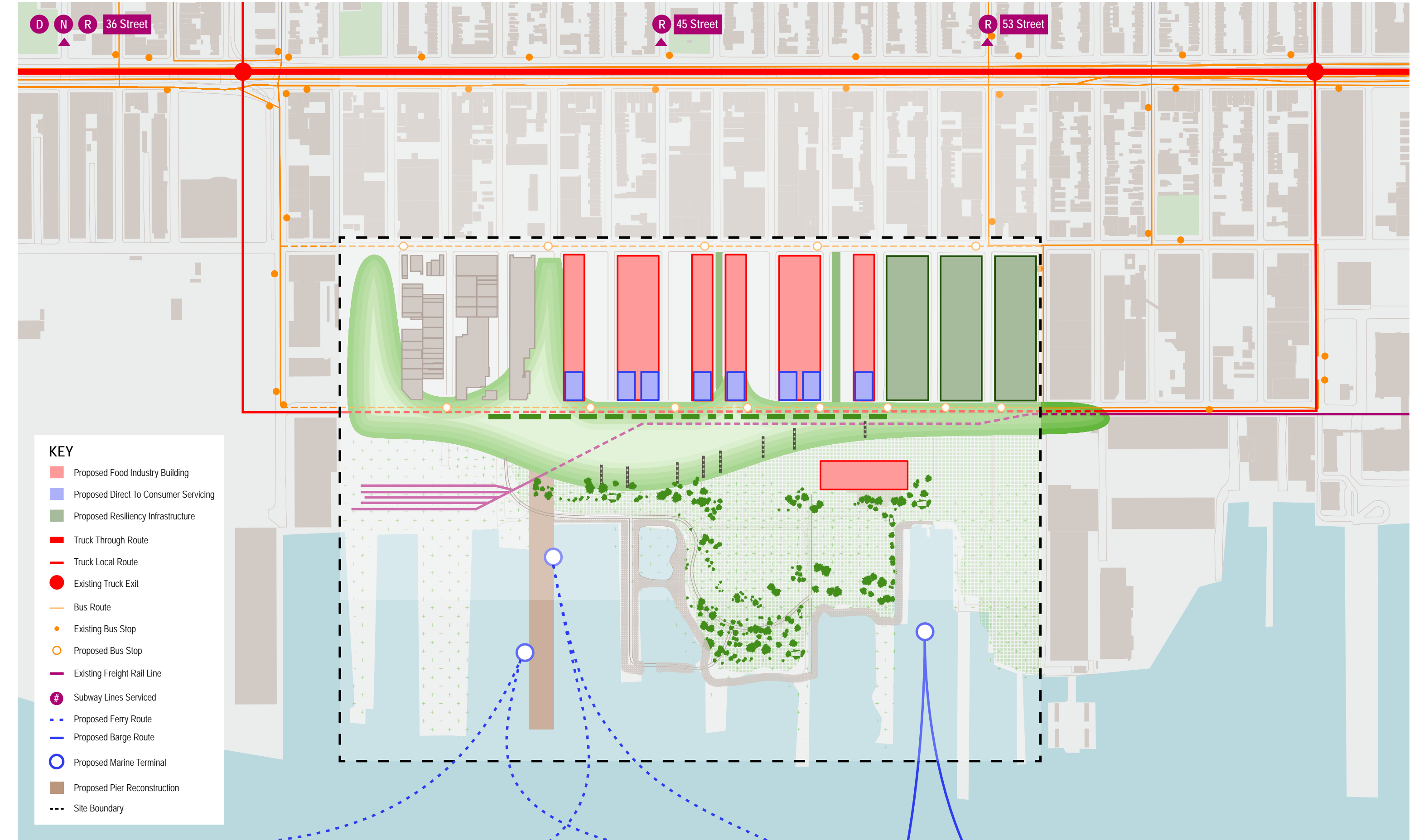


Sunset Park Food Distribution Hub

Our approach to the site strategy in Sunset Park involves a three-pronged tactic, integrating program, energy and infrastructure to create a proposal with core elements that work synergistically with one another.

The primary tenet of the proposal is to decentralize New York's food distribution center by relocating a significant portion of the industry to Sunset Park and alleviating strains existing in the system. This programming serves to bring an economical boost to the neighborhood, and the location of the program on the waterfront further augments our goals to reduce truck traffic by allowing for barge and rail traffic

to share in an intermodal transportation network. The second tenet of the proposal aims to maximize the potentials of the site's programming through a closed-loop energy system, wherein both the unique conditions and limitations of the programming serves as pretext for an energy system that includes n+1 redundancy, as well as (relative) independence from the local energy networks. Lastly, the integration of a berm into our proposal serves to protect critical infrastructure located in a floodplain by acting as a flood wall, as well as hosting a number of interacting systems above and below the berm's separation. People, transportation and systems infrastructure are unified through the berm.

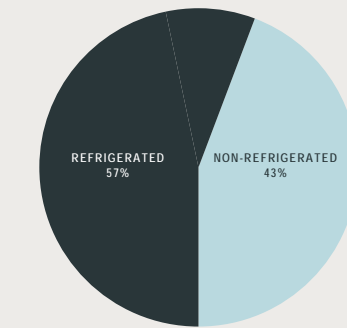


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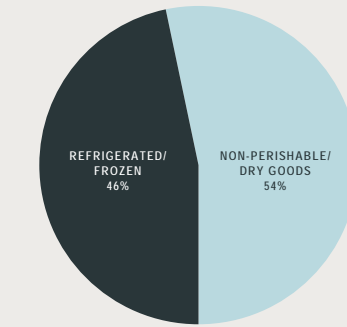
Proposed Site Plan

Proposed Last Mile

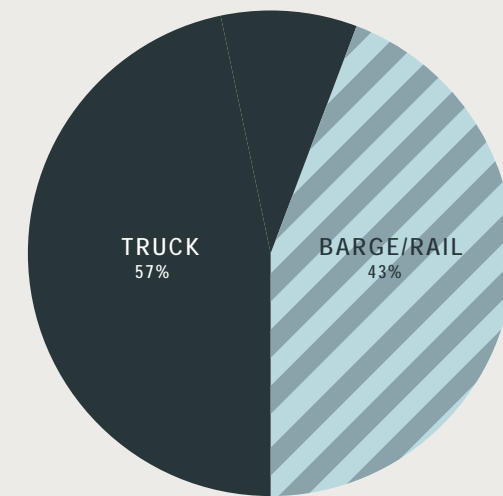
Our proposal for a new food distribution hub in Sunset Park builds on existing proposals, including FreightNYC, to take advantage of the benefits of intermodal transport to achieve our goals last mile traffic reduction. Our proposed intermodal breakdown is 57% truck and 43% mixed between barge and rail, utilizing existing railyards and pier access available on the site. Based on known numbers of truck traffic from Hunts Point, our proposal removes approximately 3,900 trucks daily from the road, or 30% of all truck traffic by redistributing freight across barge and rail. All northbound food deliveries will be captured by the Sunset Park food distribution center. On-site co-generation of biofuel further reduces the ecological impact of last-mile delivery by truck.



Proposed Refrigerated Warehouse Space
Sunset Park



Current Food Distribution Breakdown
NYC (Hunter College)



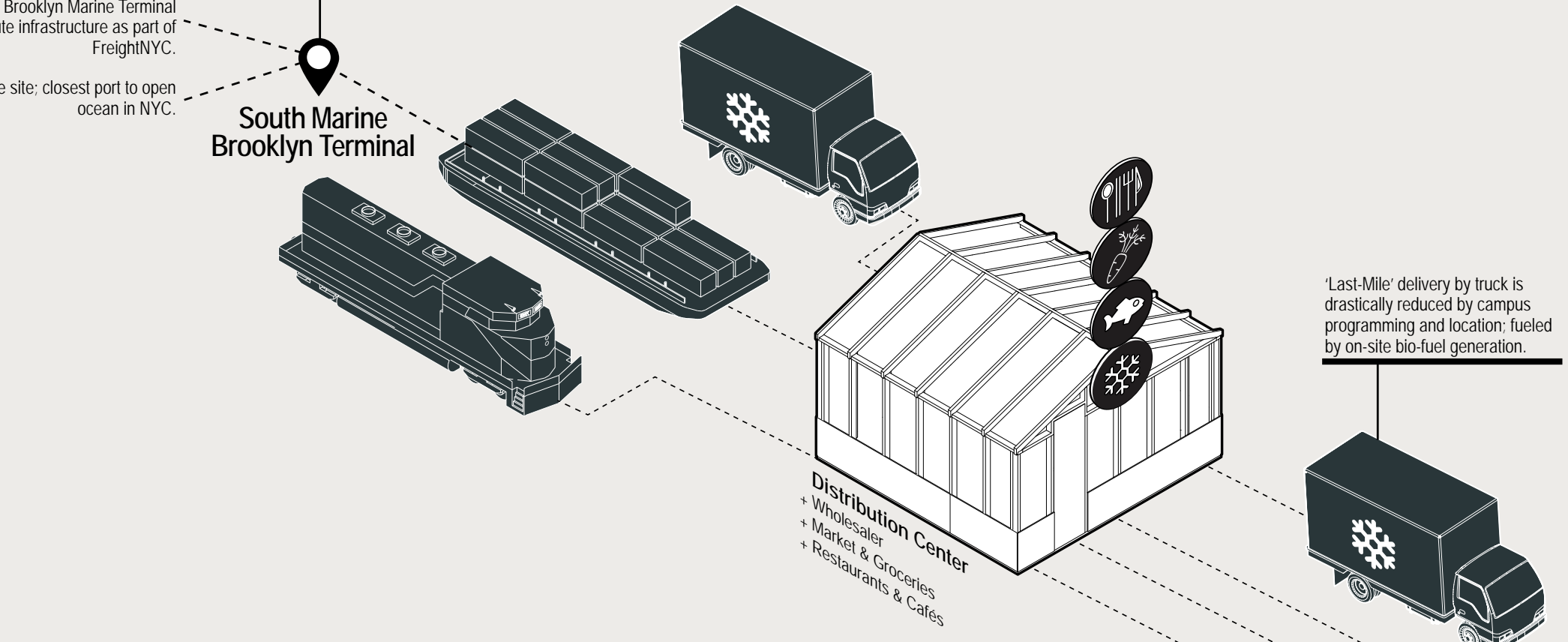
Proposed Intermodal Breakdown
SUNSET PARK

5,000 Promised job creation through FreightNYC, primarily Sunset Park
\$100M

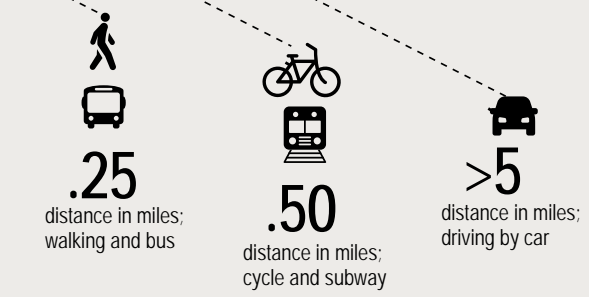
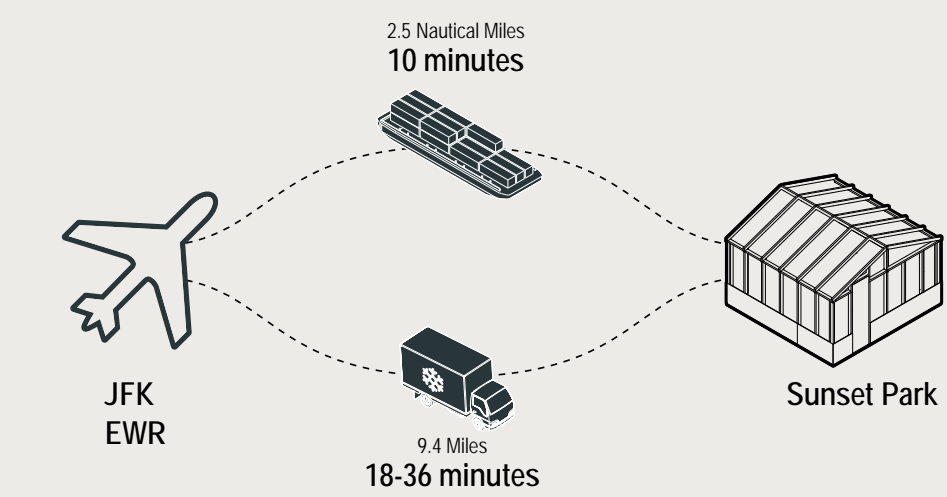
Barge access takes advantage of existing South Brooklyn Marine Terminal shipping route infrastructure as part of FreightNYC.

88-acre site; closest port to open ocean in NYC.

South Marine Brooklyn Terminal



'Last-Mile' delivery by truck is drastically reduced by campus programming and location; fueled by on-site bio-fuel generation.



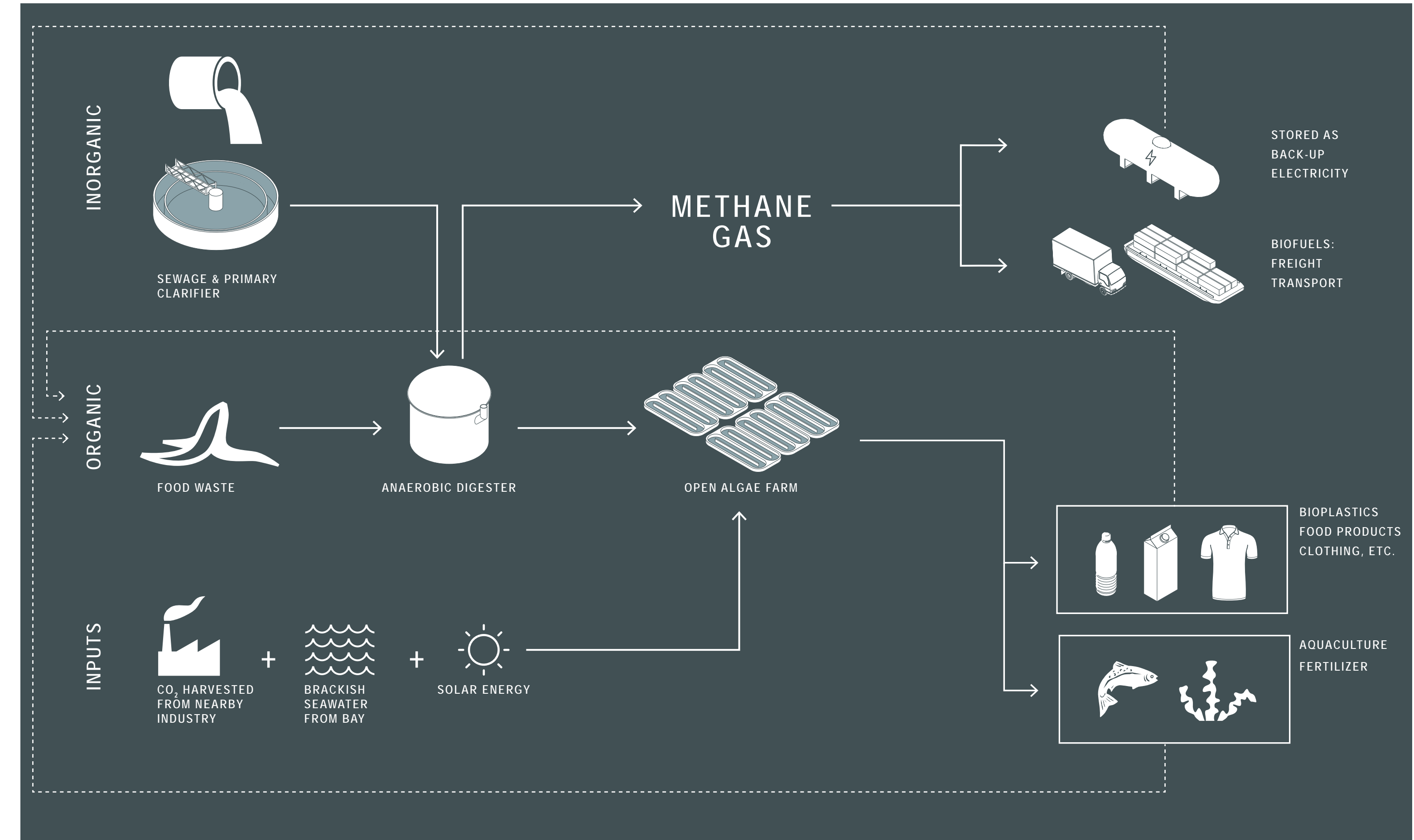
Closed Loop

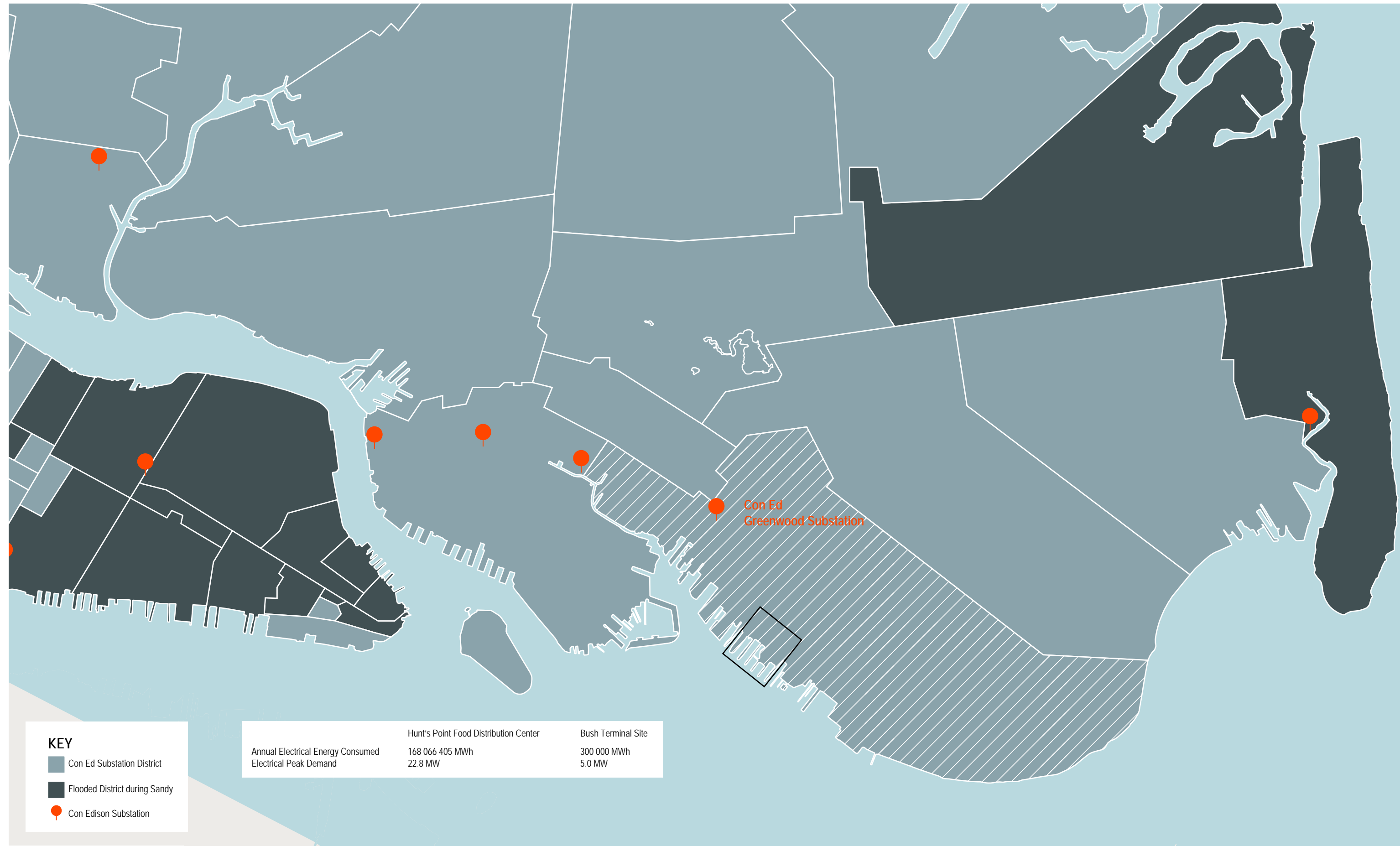
The program has a unique condition of producing its own food waste on site, which can be processed and then used as a renewable energy source for biofuels for our freight transport, or otherwise processed as methane to be stored as back-up electricity on-site as part of our n+1 energy redundancy plan.

Water and energy systems are symbiotic, and an on-site wastewater treatment facility is coupled with a closed-loop energy production system that produces biofuel for local transportation and an N+1 redundancy energy storage bank.

Our site sits in a substation district that currently services most of South Brooklyn. Although it is sufficient for the current demands of the region, steady population growth in the area indicates that demands on the grid will increase over time, eventually overloading the system. The significant energy demands of a food distribution center gives us reason to look towards alternative energy potentials in order to relieve additional pressure on the grid.

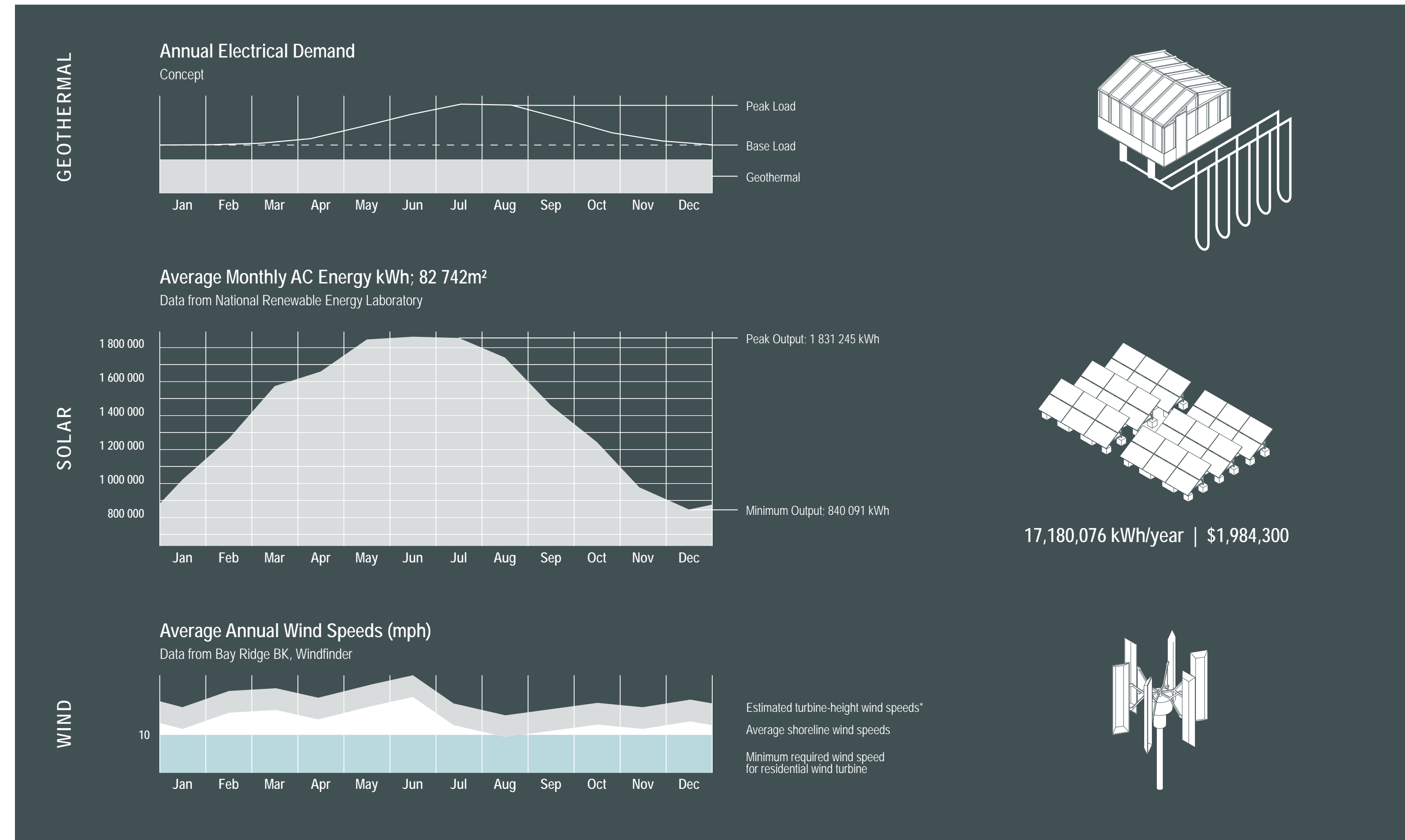
Looking to climate potentials, we propose a mixed energy profile that relies on on-site renewable energy sources, including solar, wind, geothermal and biofuels. A flexible energy system with an automated transfer switch allows the site systems to run on renewable sources whenever possible, with 100% back-up energy stored on site in lithium batteries in the event of energy shutdown from the grid.





1:50,000
BOROUGH

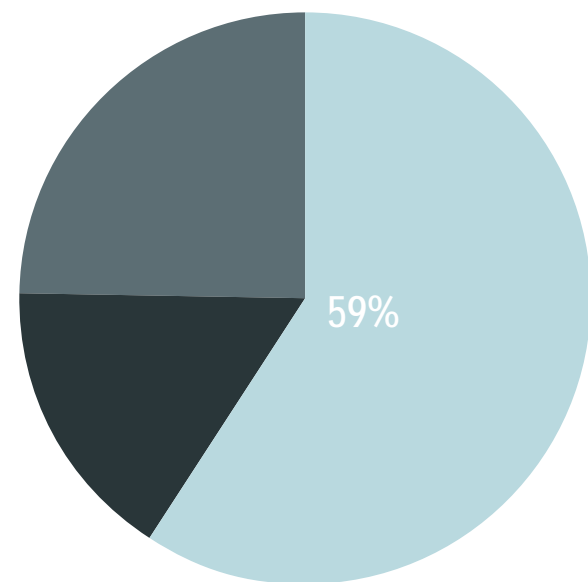
Energy District
← N



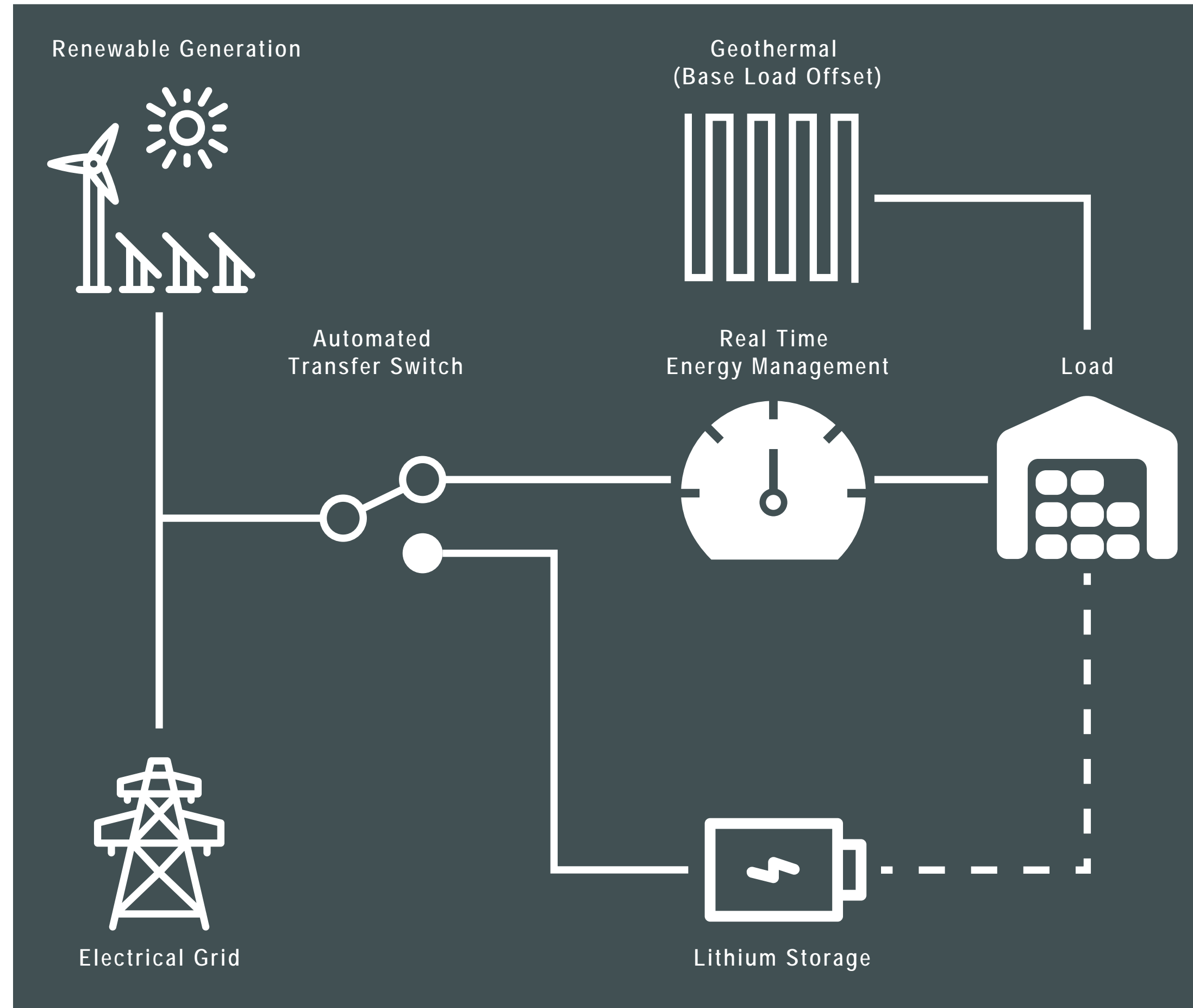
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Climate Potentials

**Peak Demand Reduction
Through BQDM in 2014**



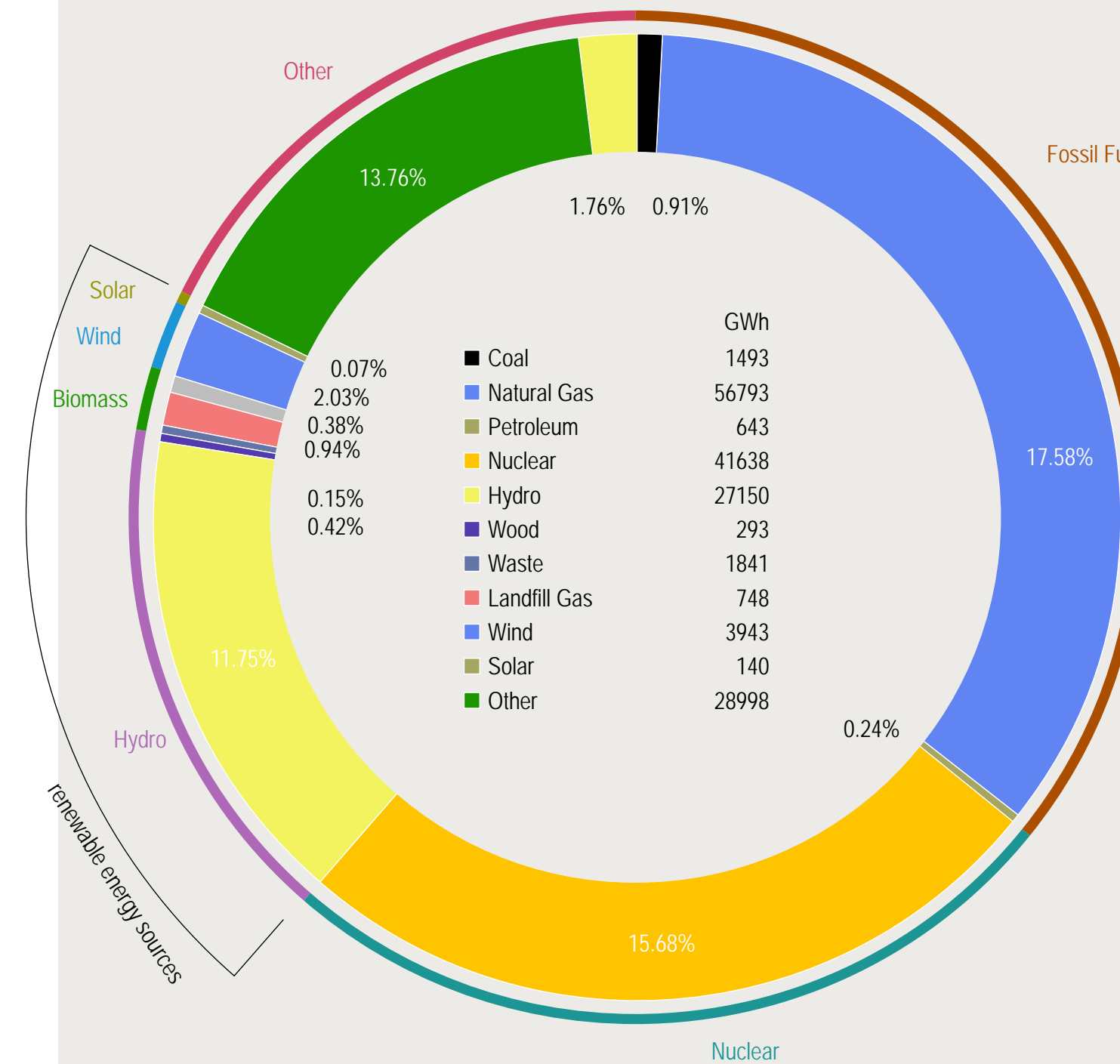
Customer-side demand reduction 41 MW
Utility-side demand reduction 11 MW
Traditional capacitor and load transfer solutions 17 MW



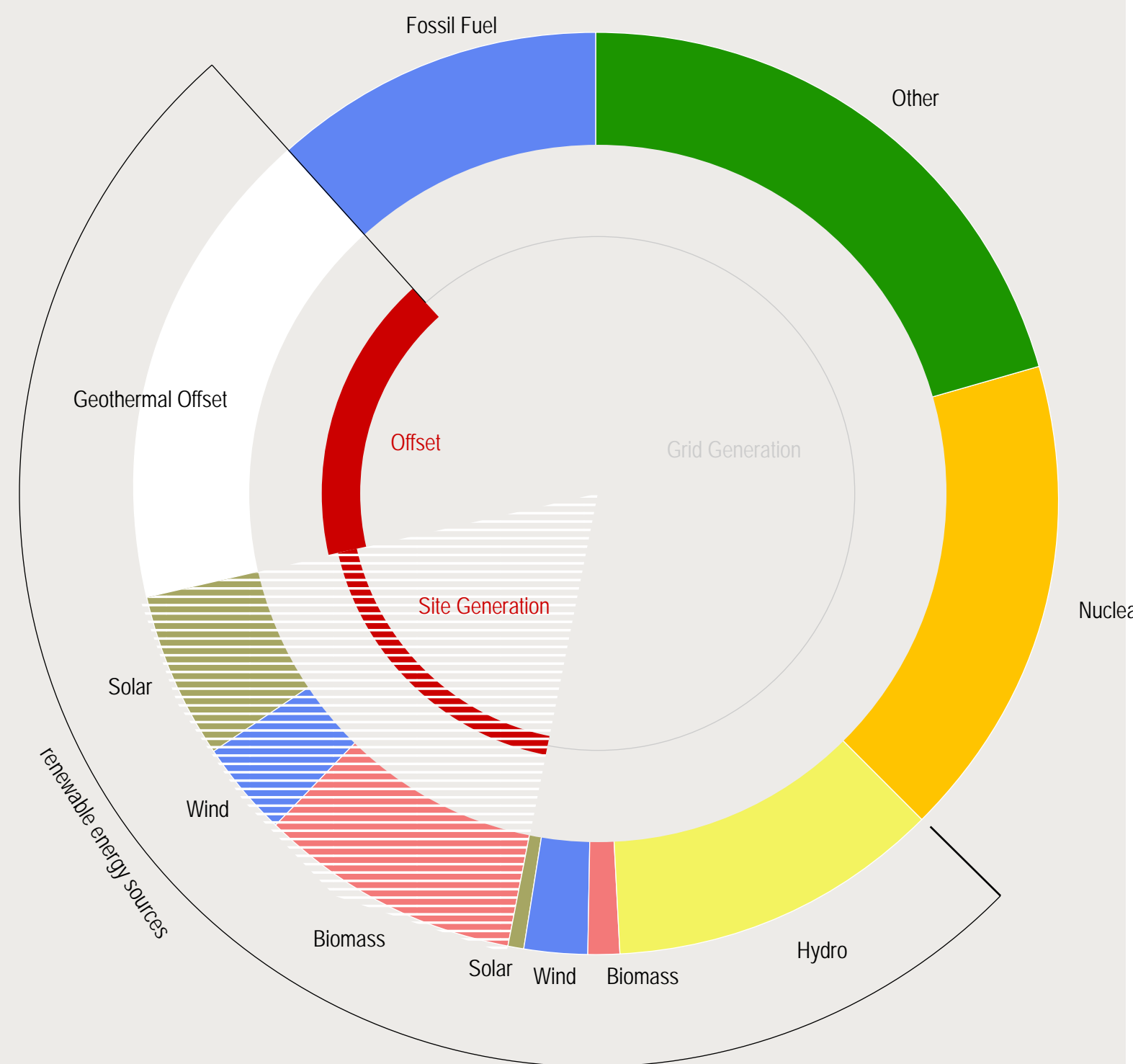
Flexible Energy System Diagram

HUNT'S POINT ELECTRICAL ENERGY PROFILE

2016 NYS ELECTRIC GENERATION BY FUEL TYPE (NYSERDA 2019)



PROPOSED ELECTRICAL ENERGY PROFILE

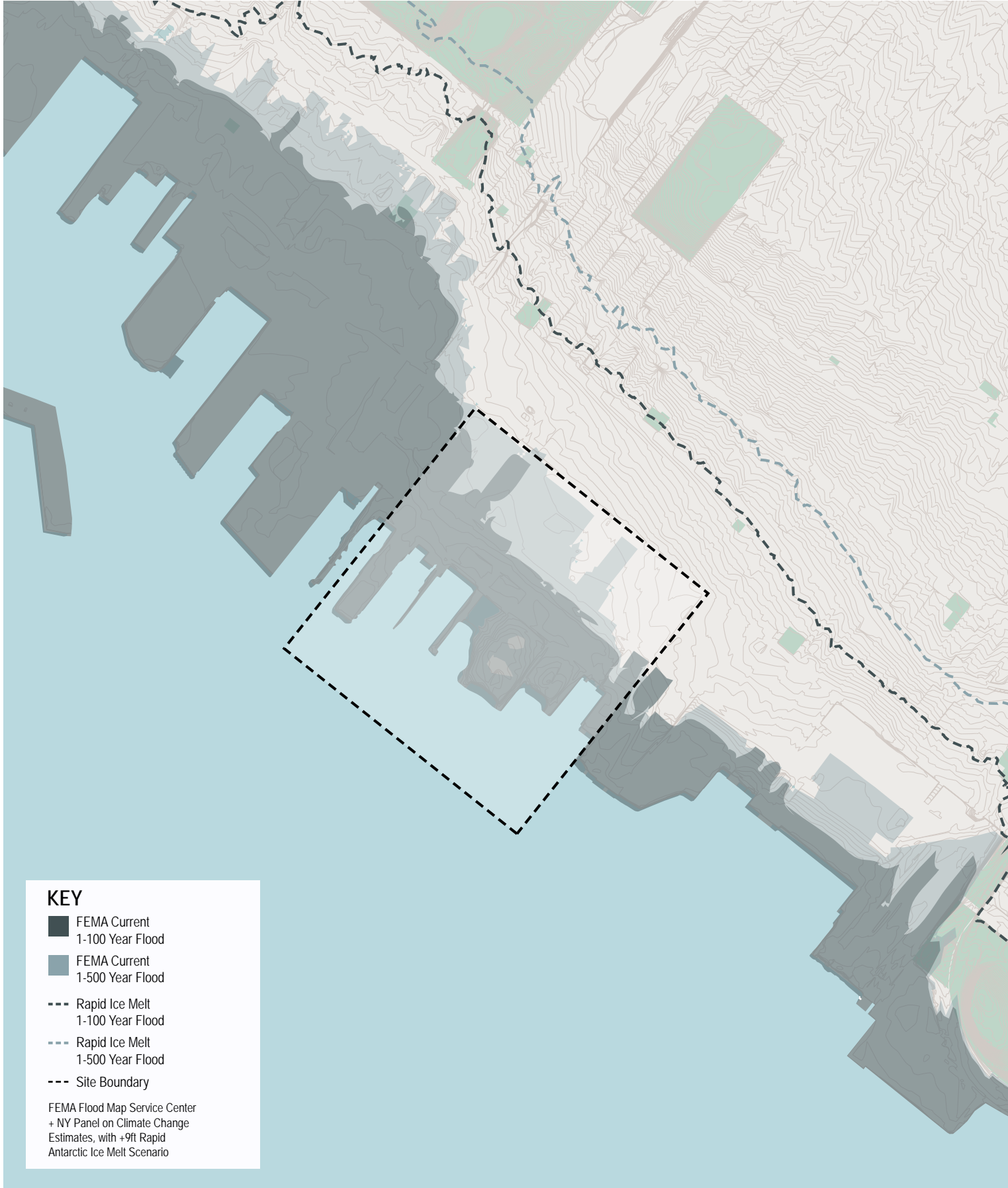
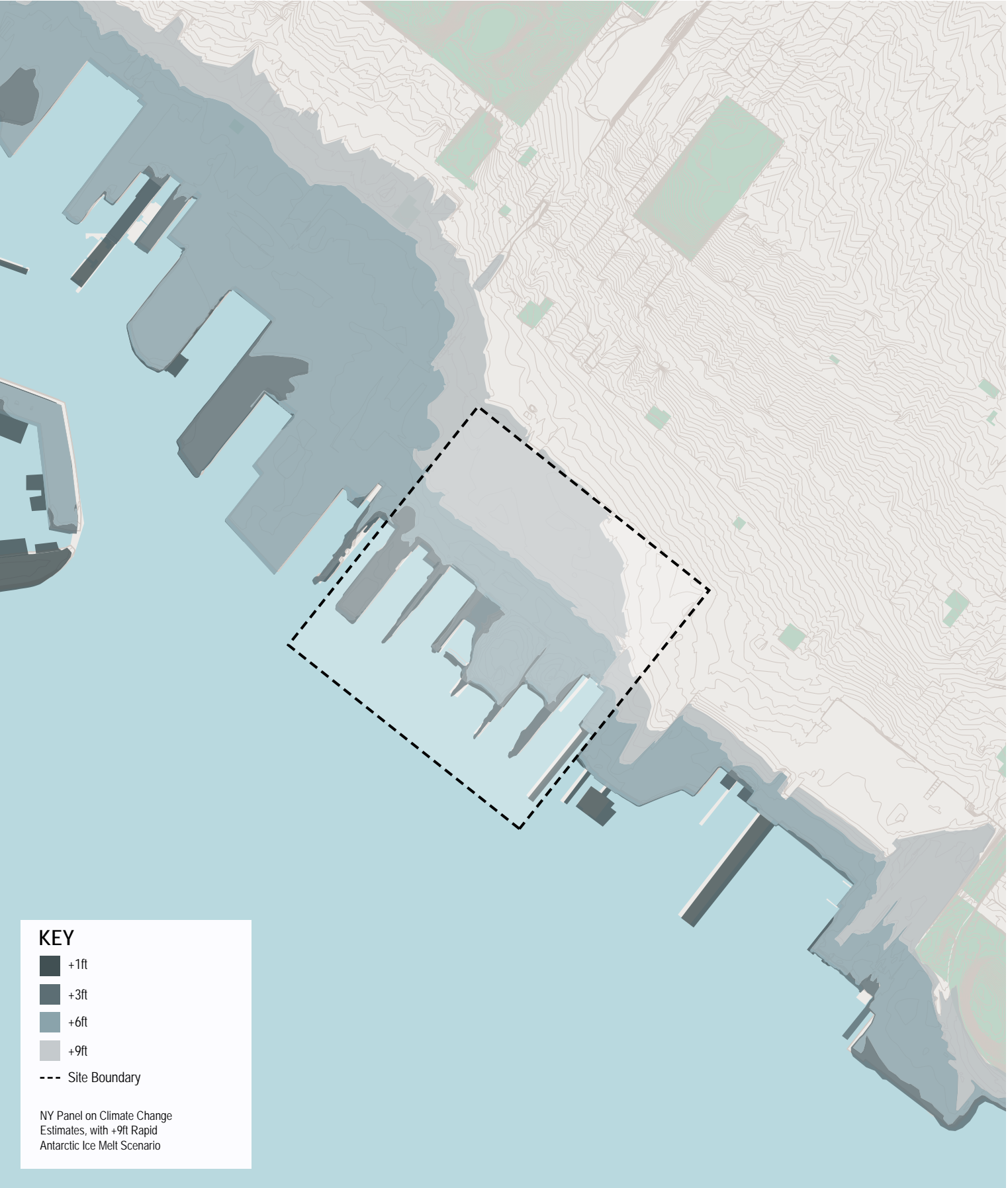


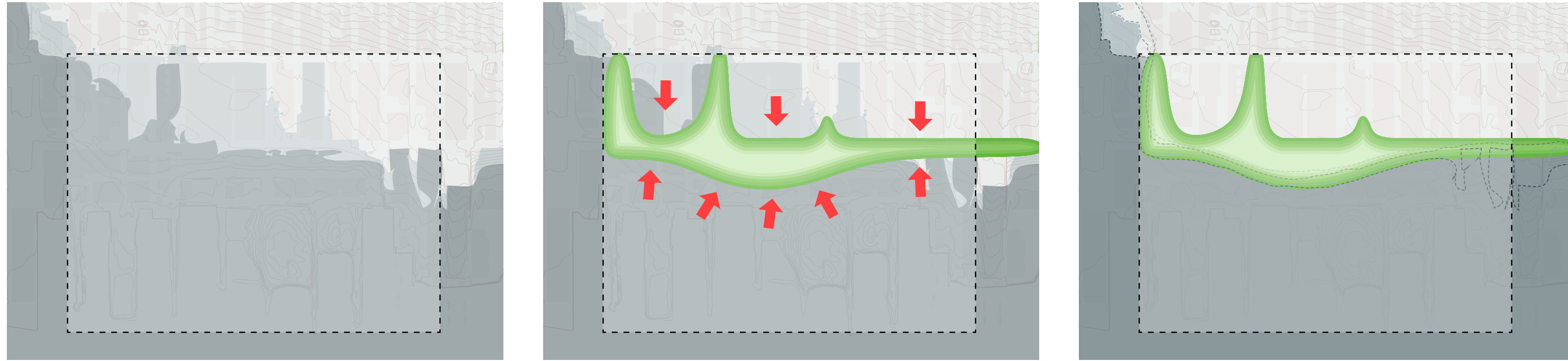
Energy Profile

Sea Level Rise + Flood Risk

Impending sea level rise in a rapid ice melt scenario, coupled with an analysis of the 100- and 500-year flood plain, indicates the need for additional protection of the site through a strategic intervention. The southeast corner of the site is relatively protected from inundation, but hardly enough to protect a food distribution hub with vulnerable infrastructural demands. The topography of the site begins to indicate where critical infrastructure needs to go, with the southeast corner reserved for the energy production hub.

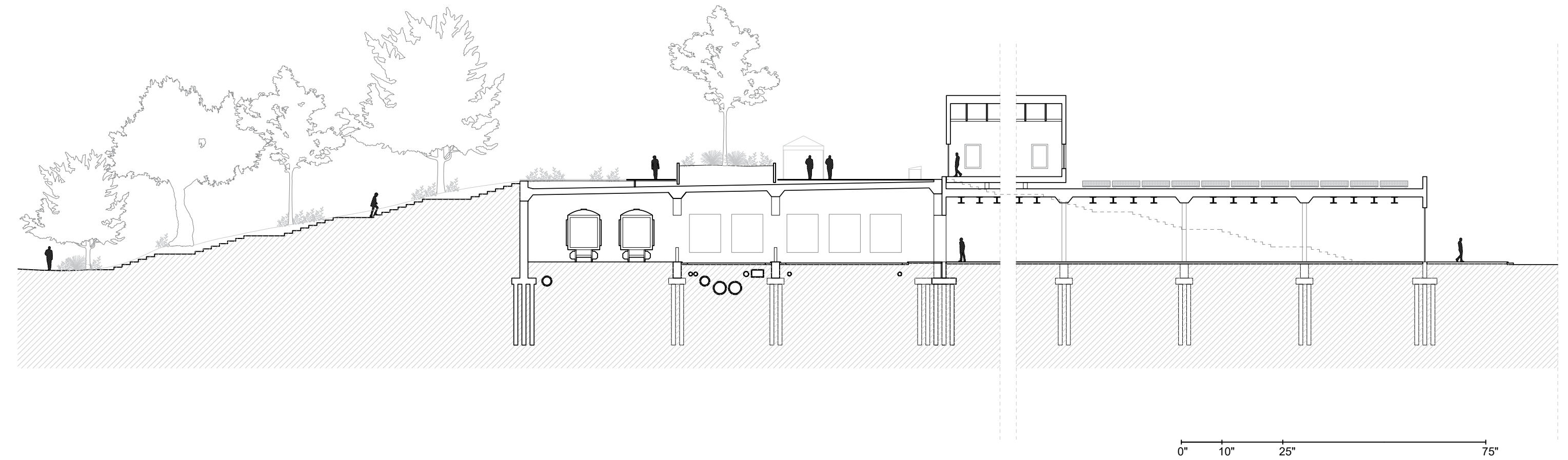
Once the critical infrastructure is protected, the berm is introduced as an additional necessary measure to further protect the site.





Berm Implementation

The third prong of the proposal looks to an infrastructural core embedded within a floodwall berm bisecting the site along 1st Avenue. A large occupiable berm bisects the site and facilitates pedestrian connection from the waterfront to the second level of warehouses.



1:300

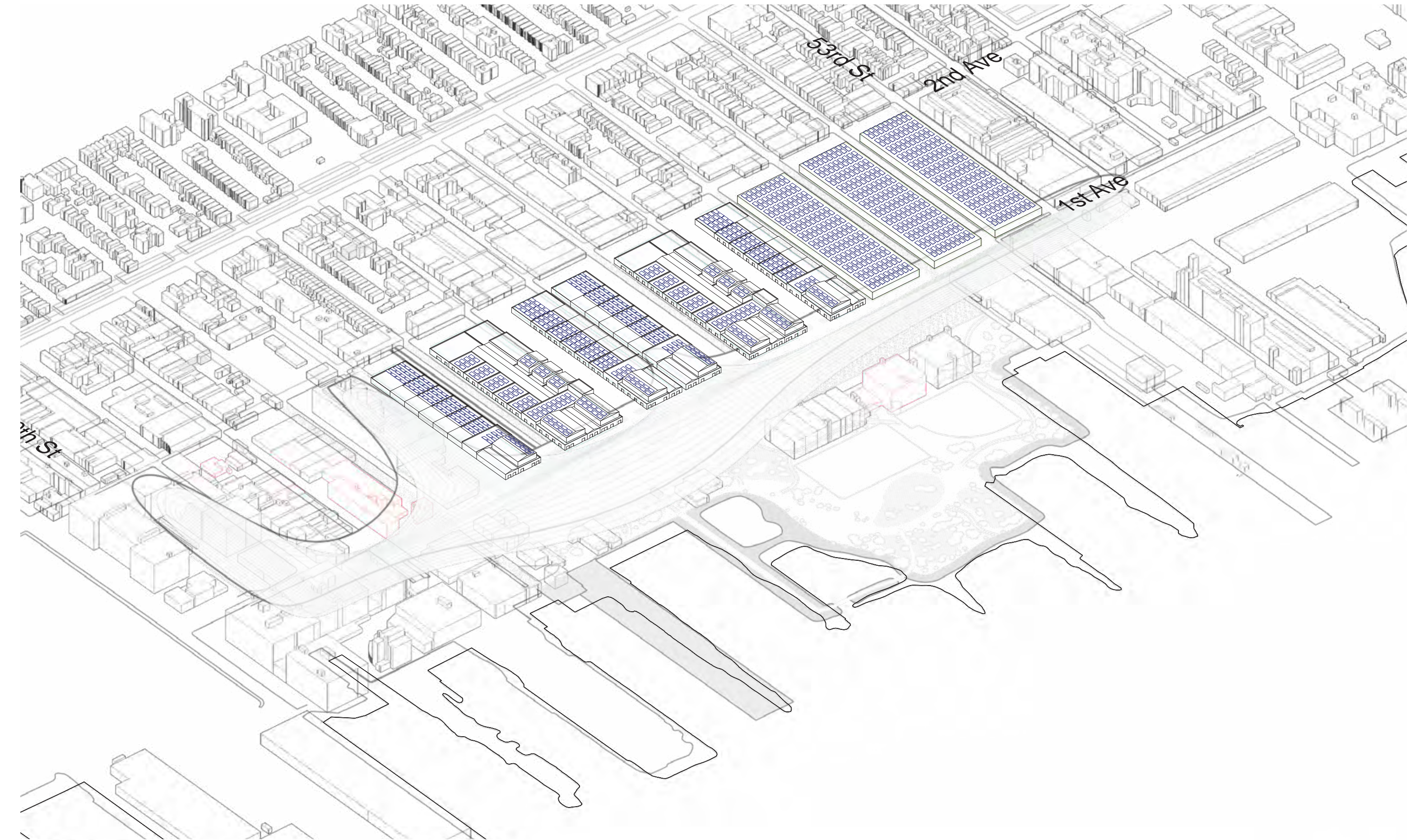
Berm Cross Section

Site Strategy

The current tenants of the site are primarily light industrial, with a number of food-related businesses already existing on the site. Preserving these businesses is aligned with a strategy to foster existing potentials on the site, rather than supercede or obliterate them.

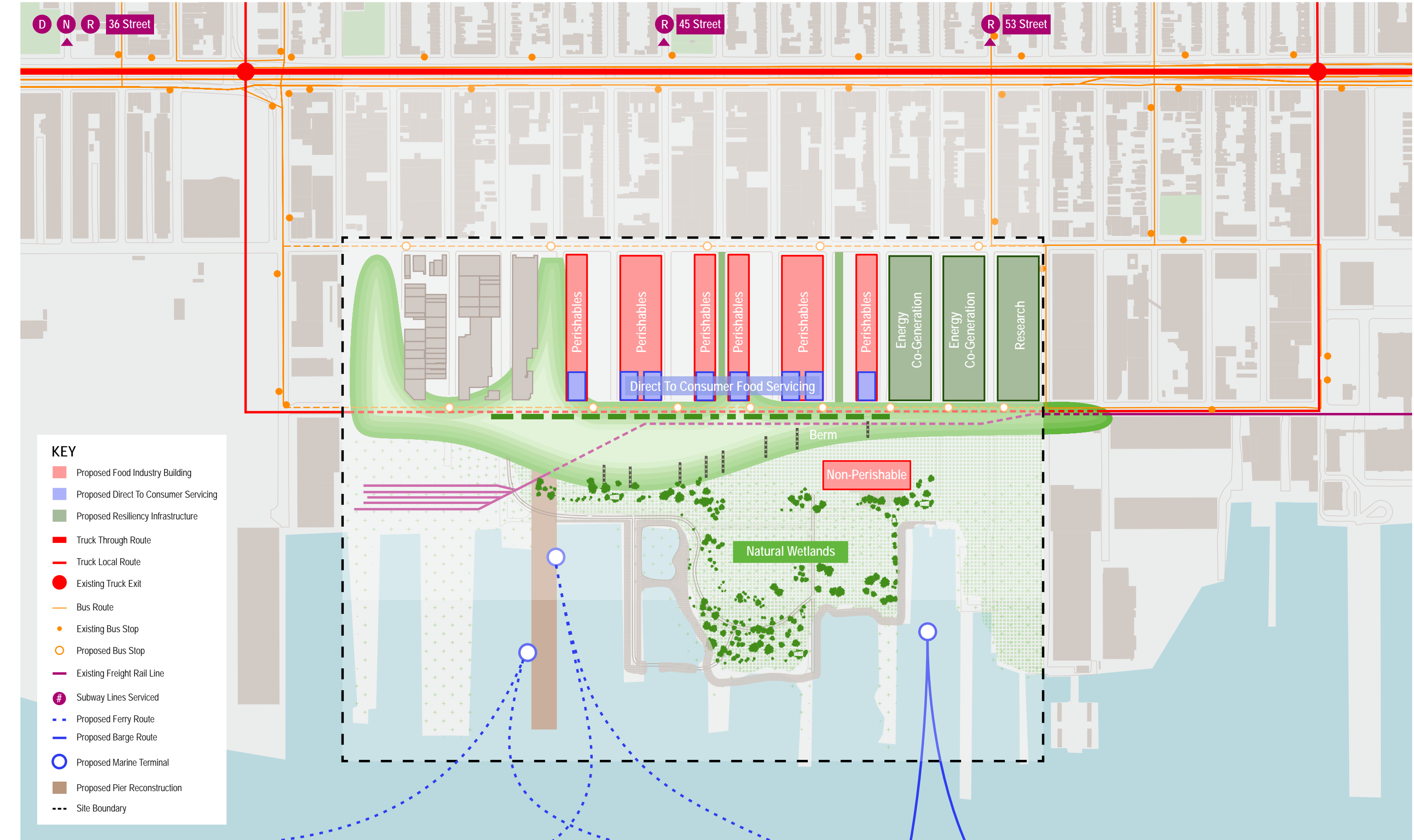
Our site is home to more than 15 individually owned food or food-related businesses, all of which we propose to retain in the final proposal. These businesses include delis, coffee shops, bakeries, butcher shops, wholesale grocers and food-adjacent businesses like paper products for restaurants and cafes.

The introduction of new programming to the site dictates that some of the pre-existing buildings are not suitable for the needs of the food distribution center, such as those that impede the 120' wide truck skirting requirement around loading dock spaces.



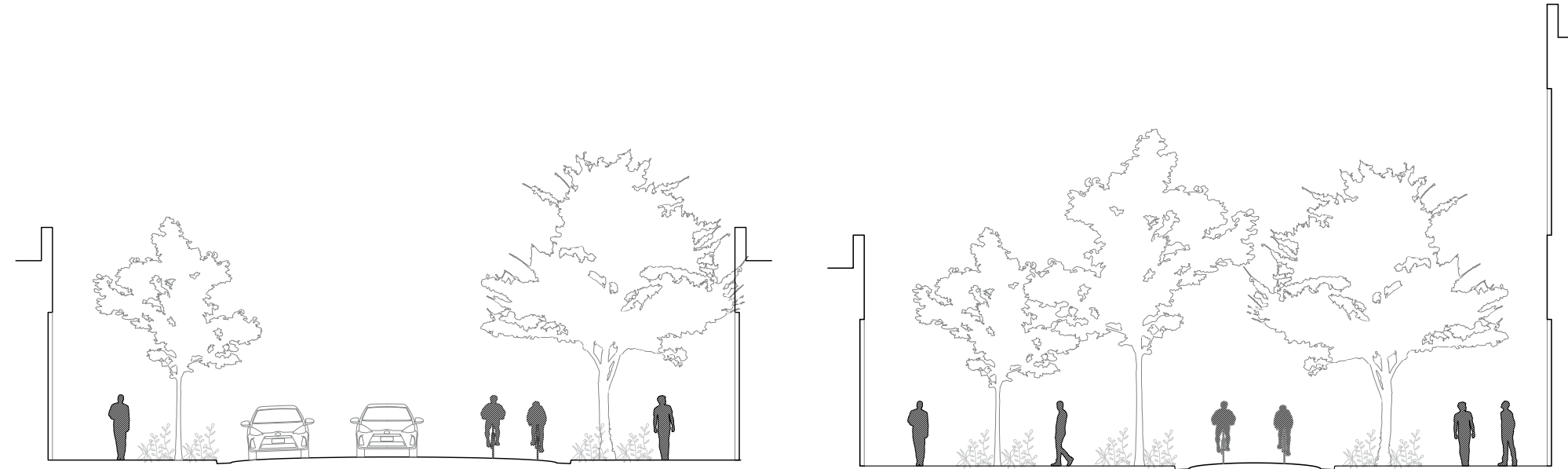
Program Distribution

The food distribution center is primarily divided into 2 halves, based on the innate requirements of the products and the inherent implications of their passage and handling. Non-refrigerated, non-perishable goods enjoy more flexibility both during their transportation to the site, as well as requirements on the site to accommodate them. Non-perishable items are sited in existing buildings west of the berm in a veritable floodplain. This also situates them in closer proximity to a newly located barge terminal, that will be responsible for the freight of goods that can withstand slower shipment times. Perishable items are sited east of the berm in a highly protected area, and is adjacent to the berm-covered railyard allowing train and truck to have direct access to the perishable food warehouses.



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Proposed Site Plan

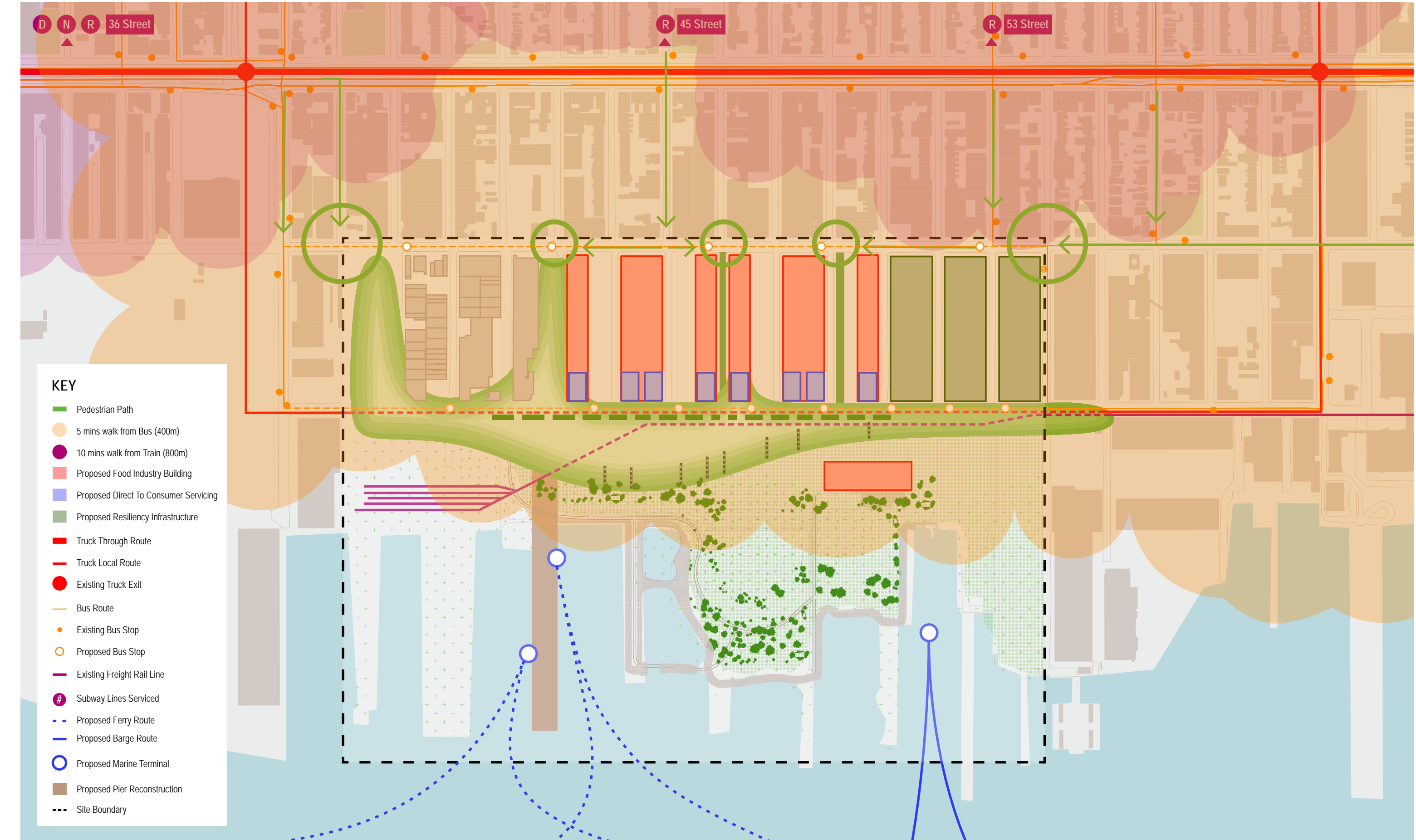


Community Access

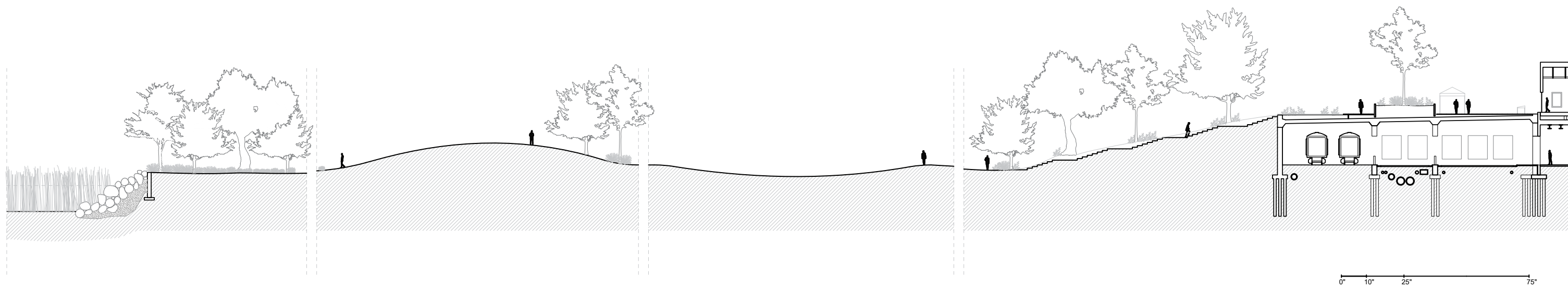
Access to the site has been enhanced by extending public transportation along 1st and 2nd Avenues. Truck access to the 2 main refrigerated warehouses is perpendicular to the waterfront along 45th, 46th and 49th streets. The main pedestrian access to the berm and waterfront are on 42nd, 44th, and 47th.

Through these diagrams, we explore different transportation conditions on our site. Specifically, we look at pedestrian access to the waterfront, through integration of truck access with biking and more pedestrian friendly streets.

Relocating the nearby passenger ferry from Brooklyn Army Terminal to our new pier on 44th street, plus the addition of north and southbound bus stops along 1st and 2nd Ave provide better access to public transportation for local workers.



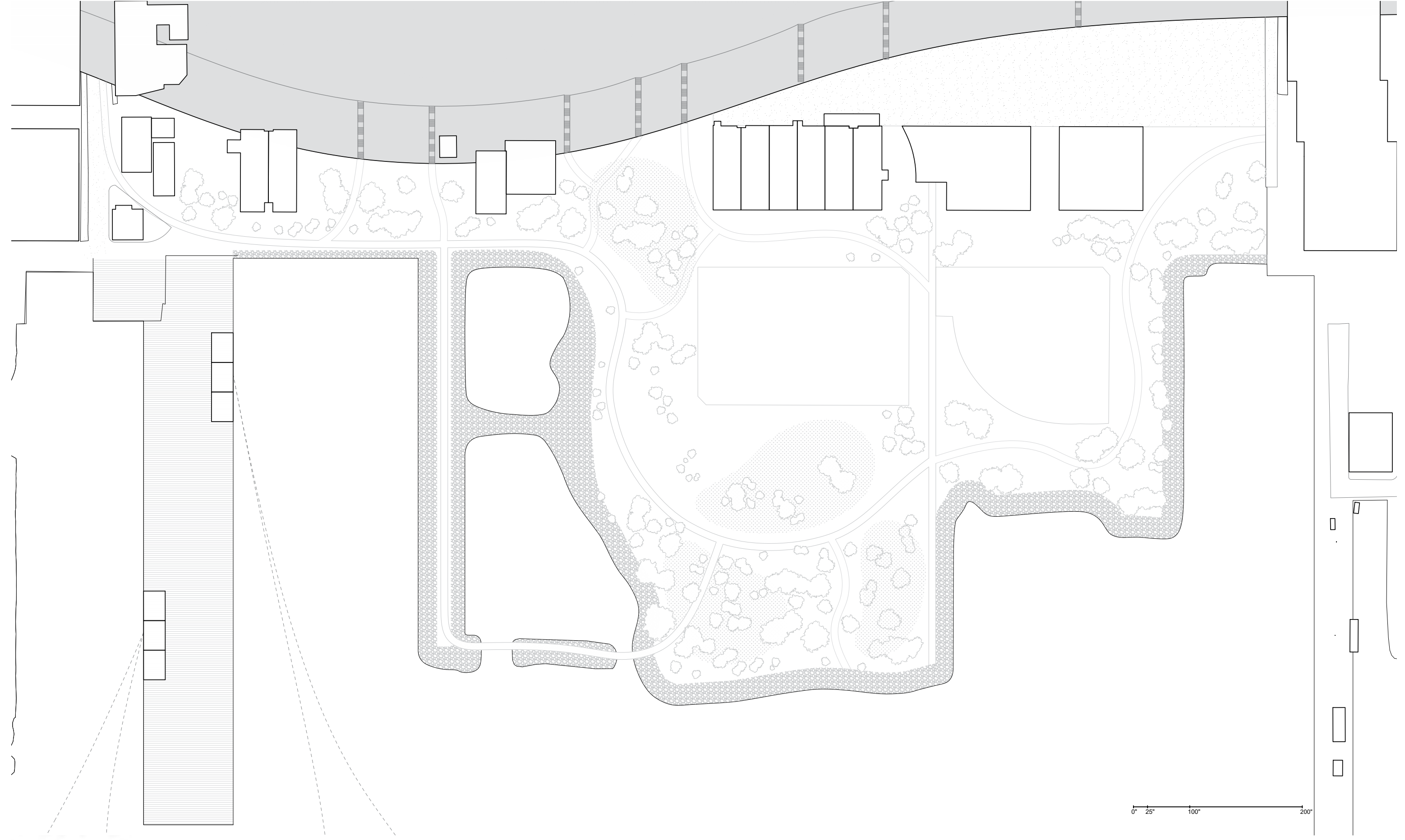
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A New Waterfront Condition

The West side of the berm slopes down towards Bush Terminal Piers Park, which has been converted partially into a wetlands as part of a flood resiliency strategy.

Our proposal utilizes a series of buffer layers to protect the site from rising water. A wetland condition exists at the shoreline, stabilizing the edges and providing a first line of defense against surges. Mounds and ponding areas hold water and protect the park from the initial threat of rising water levels. A bioswale retains water in the event of an extreme weather event. Lastly, the berm rises 29 feet above the mean sea level to protect the site from rising sea levels and both 100 and 500 year storms.

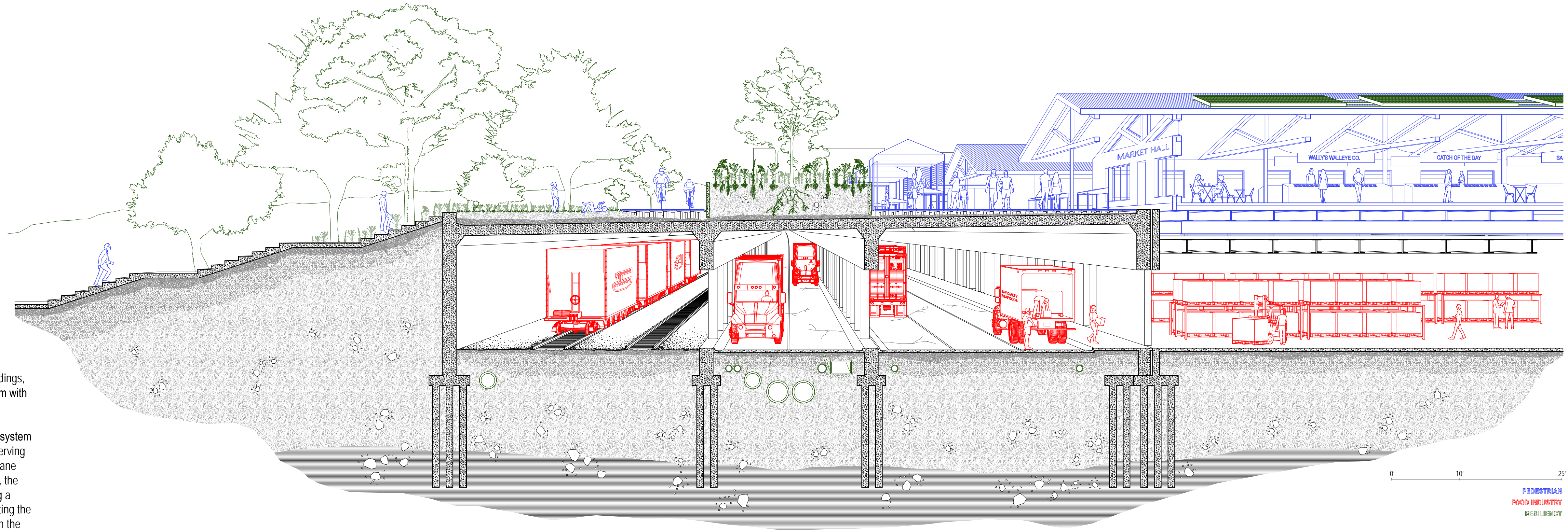


Waterfront Plan

Berm as Infrastructure

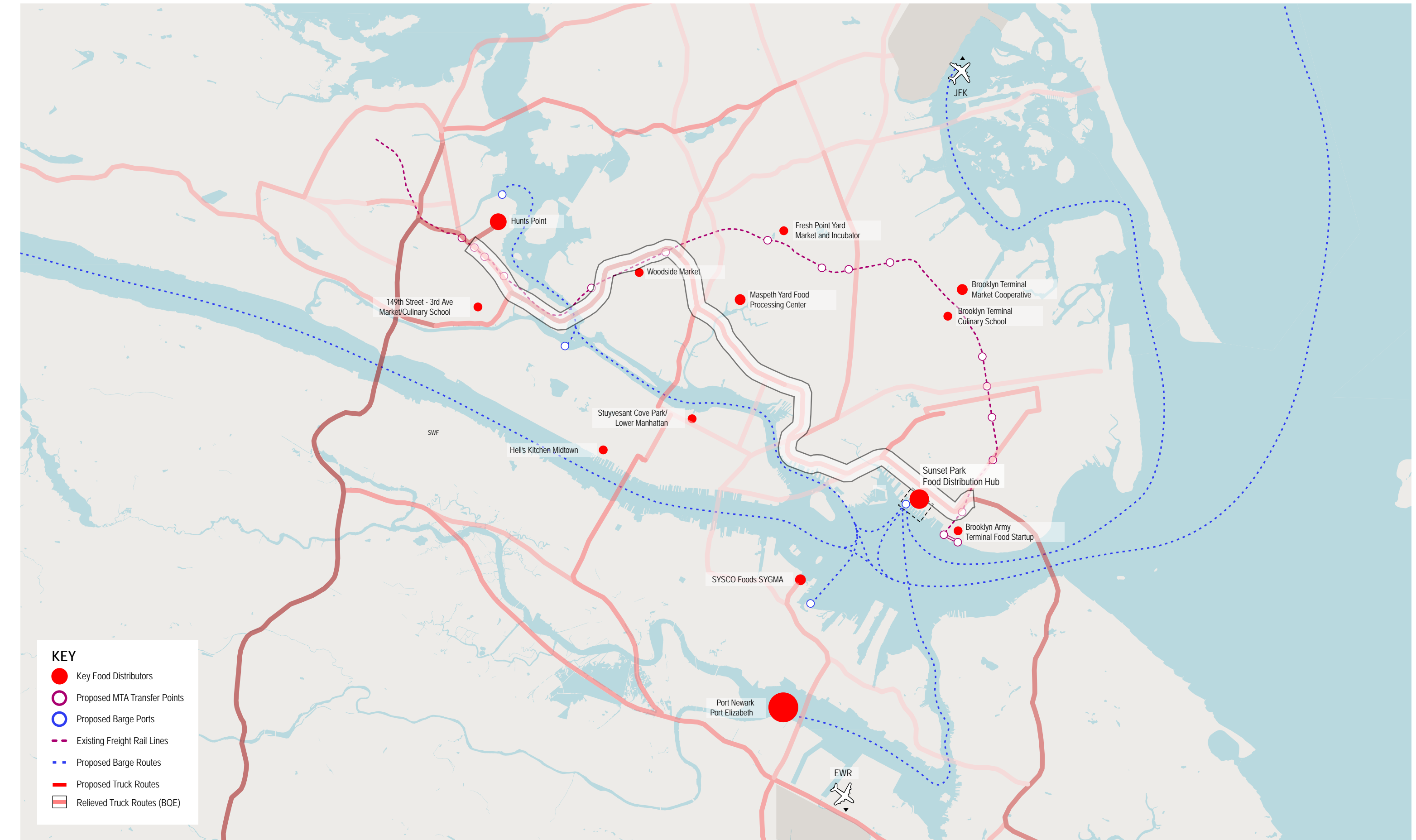
In addition to protecting critical infrastructure, the berm serves as a direct connection to existing buildings, providing an opportunity for pedestrian connections and consumer-level offerings that work in tandem with wholesalers as part of a three tiered system.

Below the berm lies critical resilient infrastructure that ties directly to our flexible closed-loop energy system and services the entire site. Within the berm, on grade, runs First Avenue and the existing railway, serving as a main artery to deliver goods to the food businesses and warehouses on the site. An additional lane is programmed for quick deliveries and newly proposed bus stops alongside the warehouses. Lastly, the space atop the berm is programmed for pedestrians and direct to consumer food servicing, including a promenade and a series of proposed market halls directly above the warehouse spaces. By connecting the complete streets, businesses, and the waterfront, the berm supports a vibrant community overlaid on the industrial programs of the site.



A New System

By de-centralizing the city's food delivery system, starting with our proposal for an intermodal closed-loop food distribution hub in Sunset Park, city-wide food-related truck traffic is reduced by up to 45%. Our proposal alleviates essential and aging infrastructure, strengthens the resiliency of the city's food system as a whole, and improves the overall quality of air and life for people in the surrounding communities.



1:100,000
CITY

Intermodal Transport Map
← N

