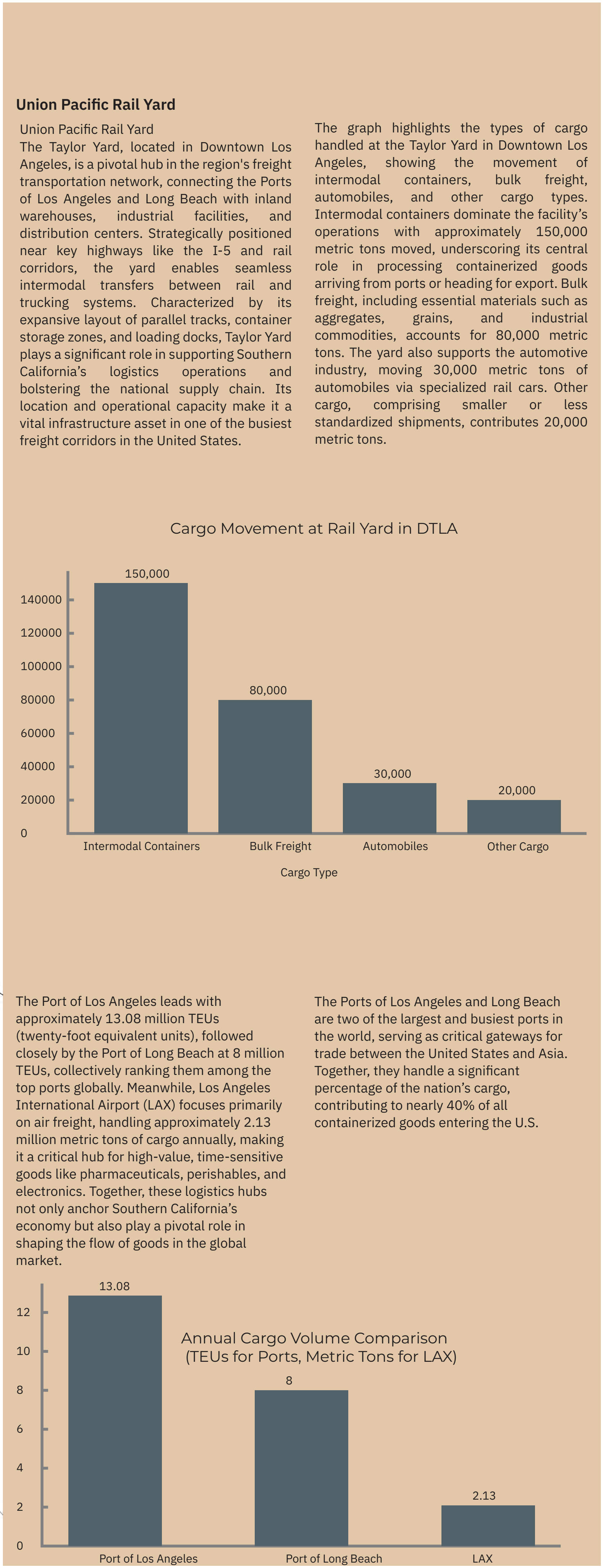
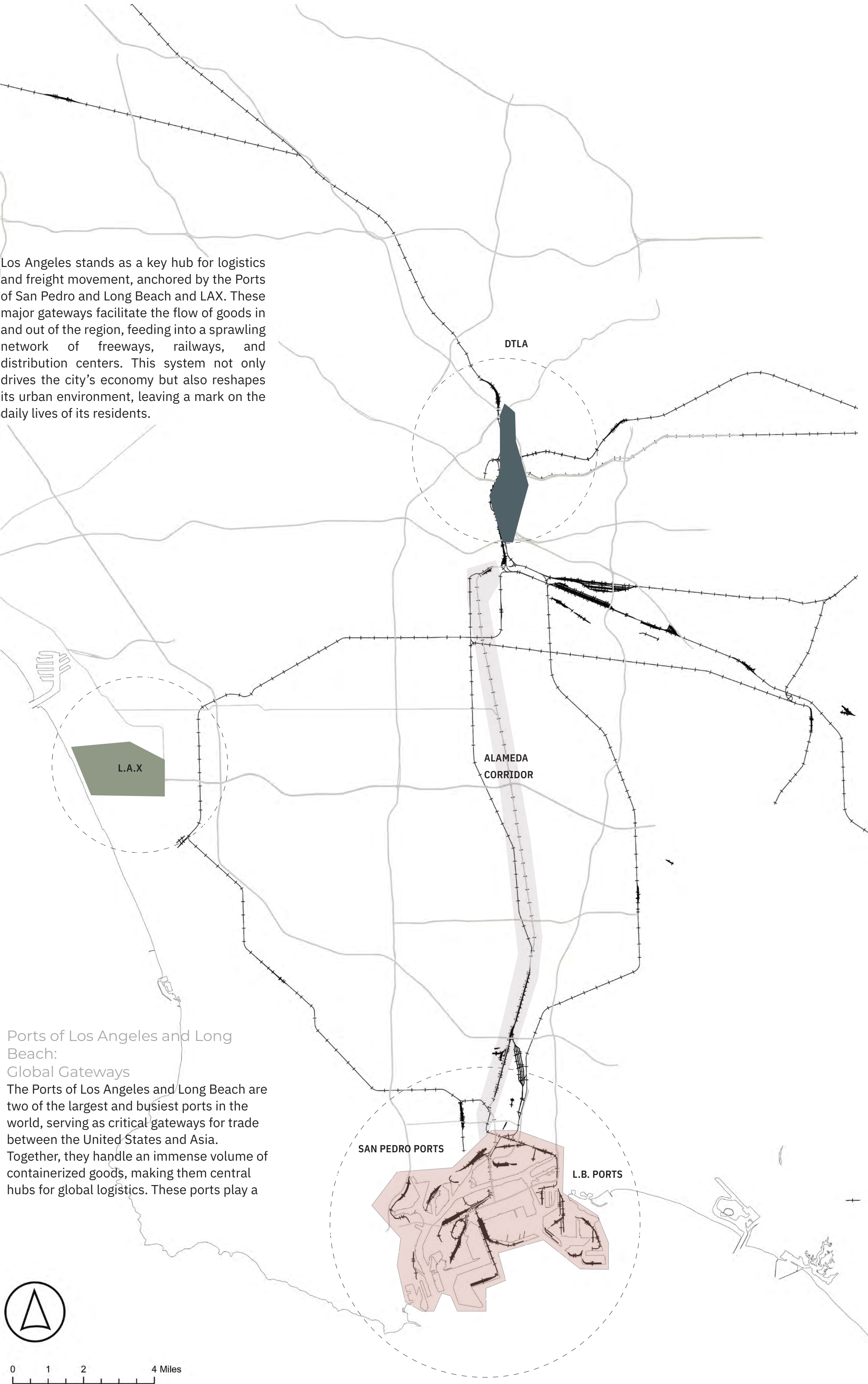
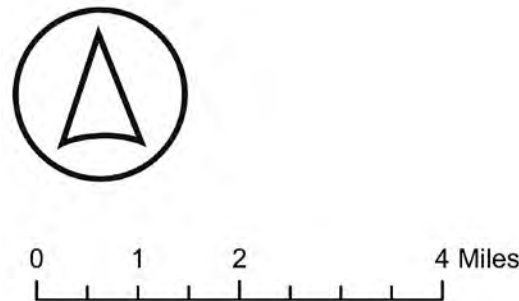


PORTS & FREIGHT LOGISTICS

Los Angeles stands as a key hub for logistics and freight movement, anchored by the Ports of San Pedro and Long Beach and LAX. These major gateways facilitate the flow of goods in and out of the region, feeding into a sprawling network of freeways, railways, and distribution centers. This system not only drives the city's economy but also reshapes its urban environment, leaving a mark on the daily lives of its residents.

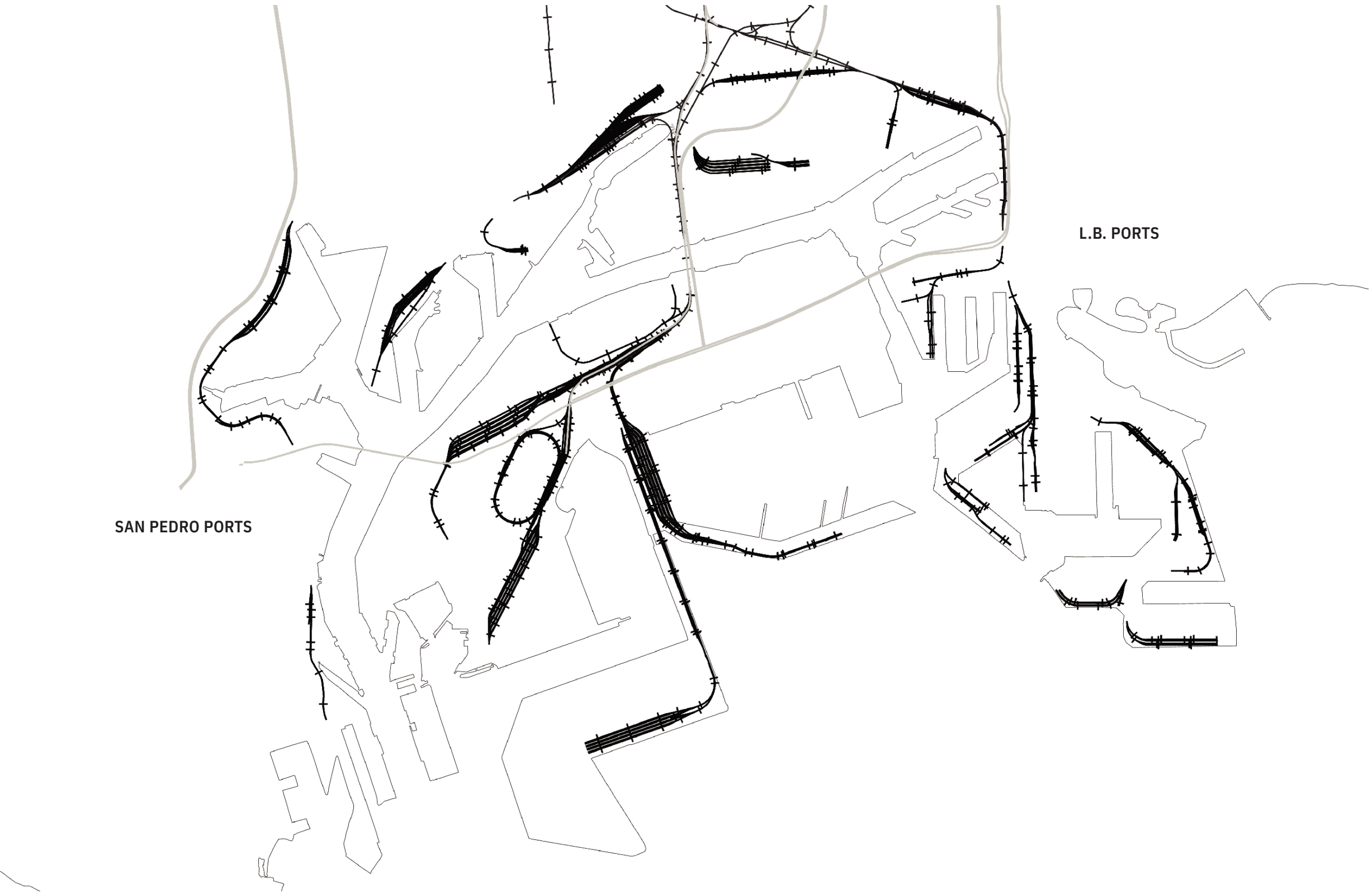
Ports of Los Angeles and Long Beach:
Global Gateways
The Ports of Los Angeles and Long Beach are two of the largest and busiest ports in the world, serving as critical gateways for trade between the United States and Asia. Together, they handle an immense volume of containerized goods, making them central hubs for global logistics. These ports play a



Assinged Site: **DTLA**



Ports: **San Pedro & Long Beach**



PORTS & FREIGHT LOGISTICS: Impacts on LA population

Impact of Freight Transportation on Air Quality in Los Angeles

Freight transportation in Los Angeles significantly contributes to air pollution, posing serious challenges to air quality and public health. Diesel-powered trucks and trains are major sources of harmful emissions, releasing approximately 14.5 tons of nitrogen oxides (NOx) and 0.27 tons of particulate matter (PM) daily. These pollutants exacerbate respiratory issues, cardiovascular diseases, and other health concerns, particularly for communities residing near freight corridors such as the I-710 freeway, rail yards, and port areas.

To address these environmental challenges, initiatives like the Clean Truck Program aim to phase out older, polluting diesel trucks and

Observations from findings:
DTLA Raiyard (65%) – The highest concentration of tire waste, likely due to constant heavy truck and rail freight movement, sharp turns, braking, and wear from industrial activity.

Ports (25%) – A significant amount of tire debris, which makes sense given the volume of container trucks moving in and out of the ports, along with long-haul freight vehicles.

West LA Streets (10%) – The lowest percentage, but still relevant, indicating that even urban streets experience tire wear pollution, though at a lesser intensity than freight-dense areas.

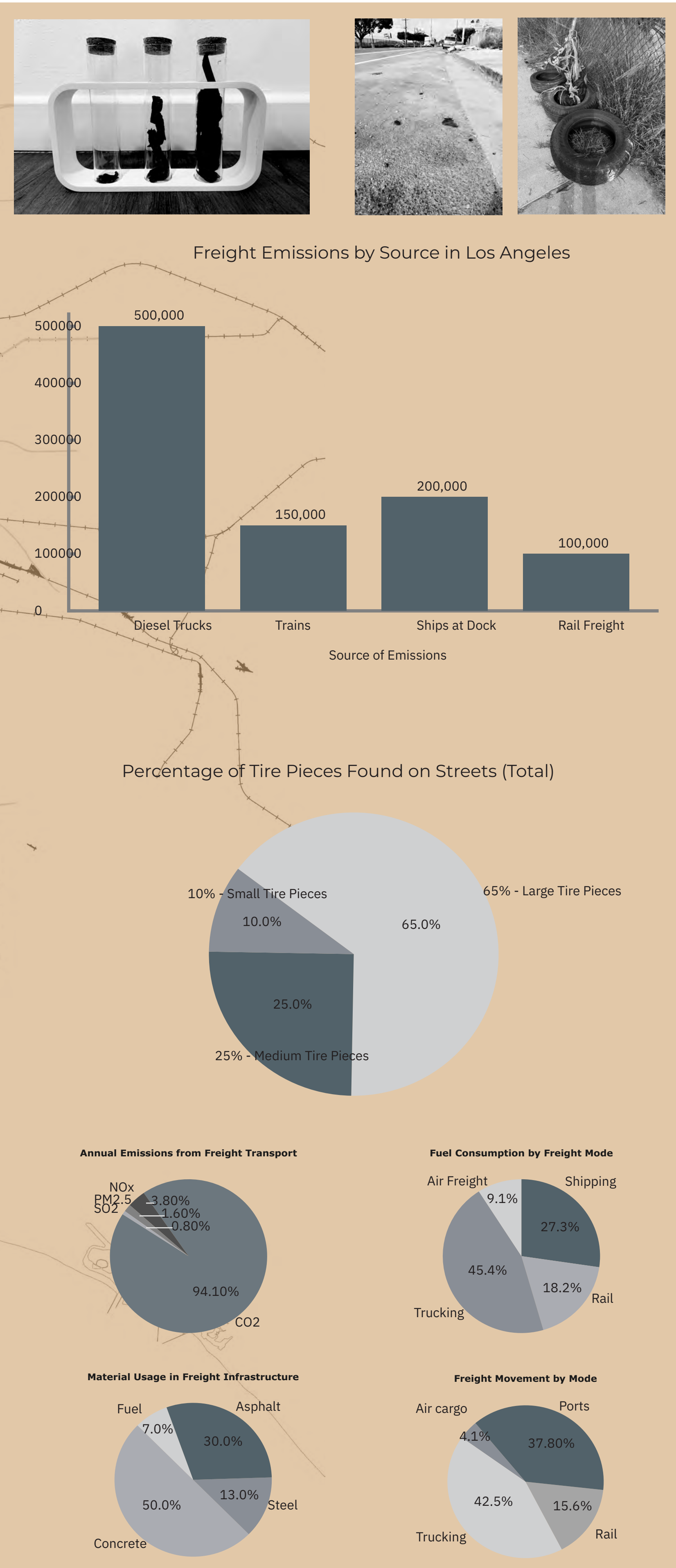
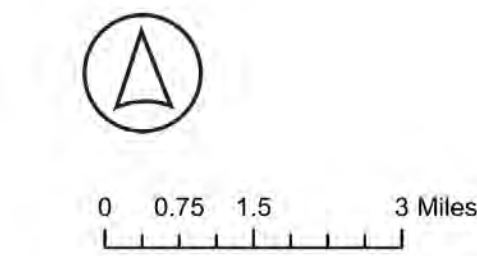
Environmental Impact: The higher percentage of tire waste in DTLA railyards and ports suggests that freight infrastructure contributes disproportionately to microplastic pollution from tire wear. This aligns with studies showing

LEGEND

Areas

Tires Ditritus

Pollution



Union Pacific Rail Yard

Overview

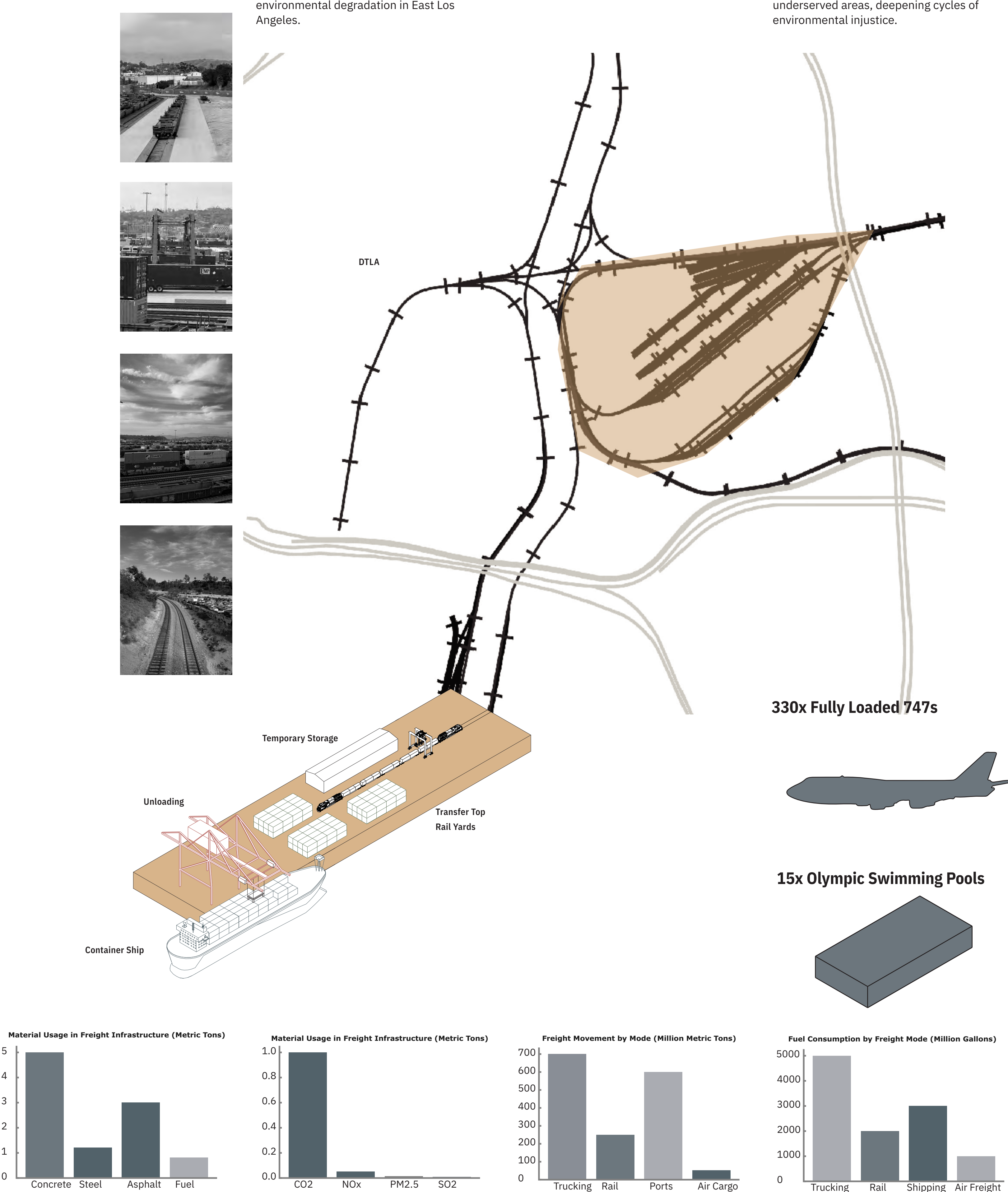
Union Pacific's Hobart Yard covers about 250 acres, making it one of the largest intermodal rail yards in the U.S. The site contains over 1.5 million cubic feet of concrete and 50,000 tons of steel, creating a massive industrial landscape. While it drives freight movement across the country, it physically divides neighborhoods and contributes heavily to pollution and environmental degradation in East Los Angeles.

Comparisons

- 50,000 tons of steel ≈ weight of 330 fully loaded Boeing 747 airplanes.
- 1.5 million cubic feet of concrete ≈ enough to fill 15 Olympic swimming pools.

Local Impact on Communities

Union Pacific's rail yards cut through neighborhoods, creating physical and social barriers that limit community connectivity. Constant diesel emissions and industrial noise expose nearby residents to higher rates of asthma, heart disease, and other health issues. Despite modernization efforts, the environmental and health burdens remain concentrated in historically underserved areas, deepening cycles of environmental injustice.



COMPRESSED LOGISTICS HUB: Land Reclaimed

Overview:

This project reimagines the Union Pacific Railyard in Downtown Los Angeles by radically compressing its spatial footprint through the vertical stacking of freight infrastructure. By reducing the railyard’s surface area by 80%, the design frees up vast tracts of land that were once inaccessible to the public. Multi-level container warehouses replace traditional horizontal train-to-truck operations, allowing goods to be unloaded directly from trains, lifted, stored, and distributed across stacked platforms. This verticalization of freight operations maintains logistical efficiency while releasing the ground plane for new uses.

The reclaimed land is divided into two major civic components. The southern edge transforms into a linear park that reconnects Boyle Heights with the city center—an effort to repair the environmental and social rift caused by decades of industrial isolation. On the northern side, a retail corridor lines the street edge, activating the site and providing opportunities for local business. Together, these interventions stitch the site back into the urban fabric and address the long-standing imbalance between industrial necessity and public access.

Parkland:

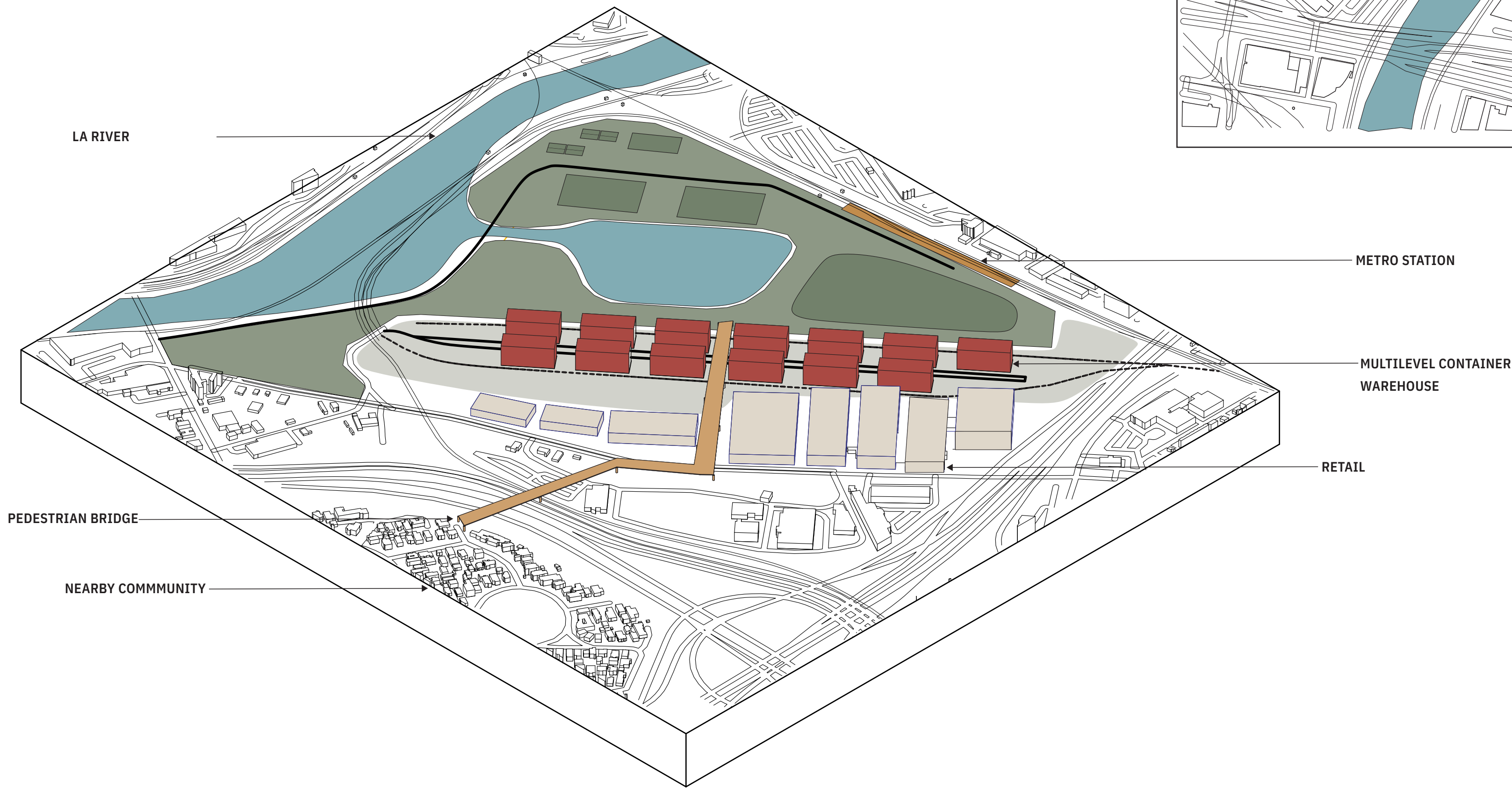
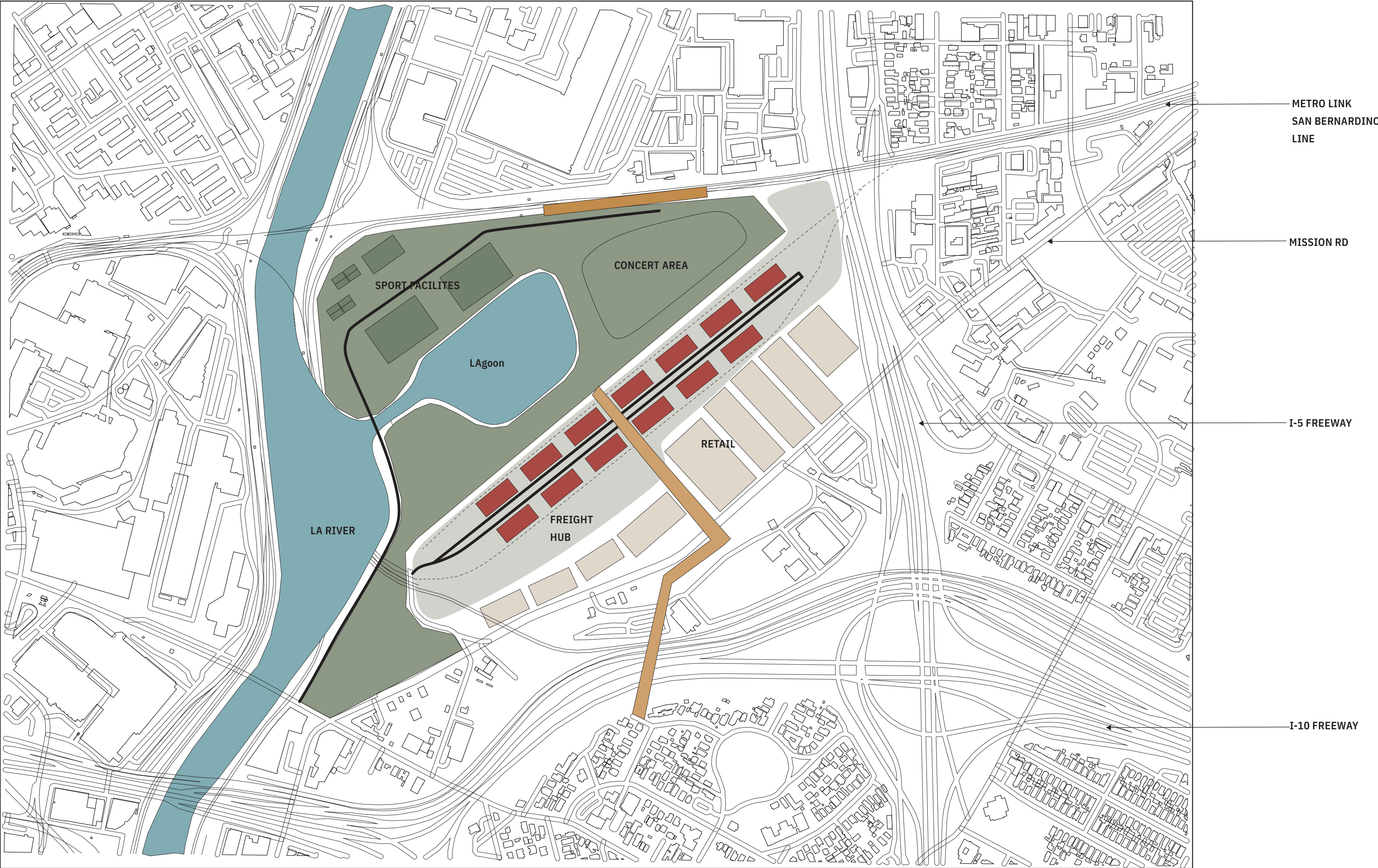
The new green space takes over the ground once used by the railyard. A lagoon connected to the LA River works as a stormwater catch and public gathering spot. A trail wraps around the entire site and connects to nearby streets for walking and biking. The park includes a soccer field, tennis courts, and an open lawn used for concerts, pop-ups, and casual hangouts. Trees and simple paths make the space easy to move through. What used to be a barrier is now an active public park that’s open and

Retail

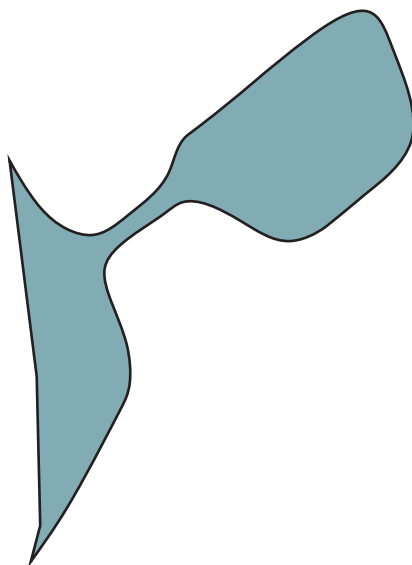
Retail spaces activate the street edge with shops, food, and services. A pedestrian bridge connects them to the park and crosses through the vertical freight hub, offering views into the container operations while linking both sides of the site.

Retail

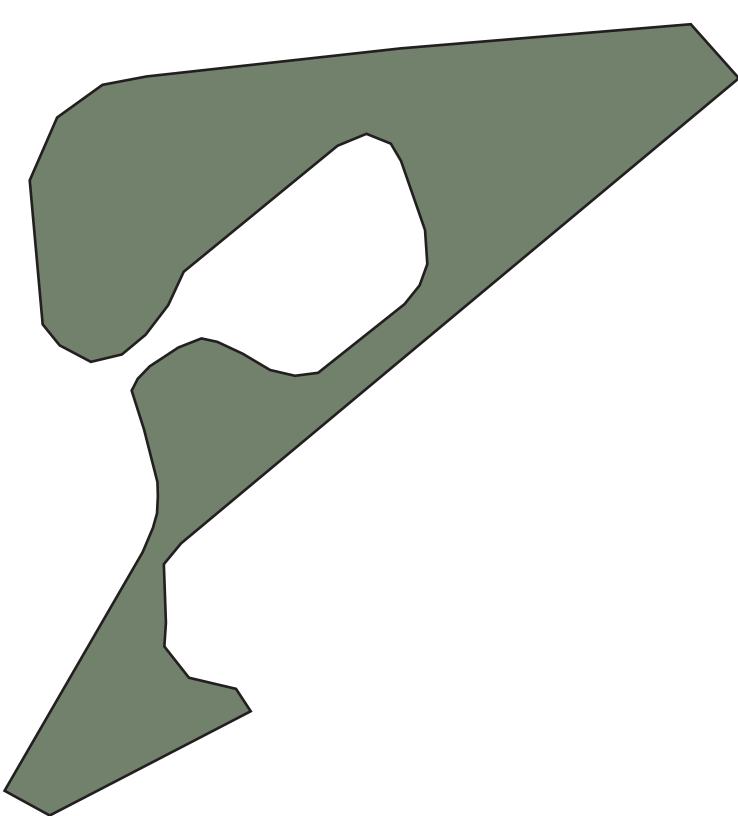
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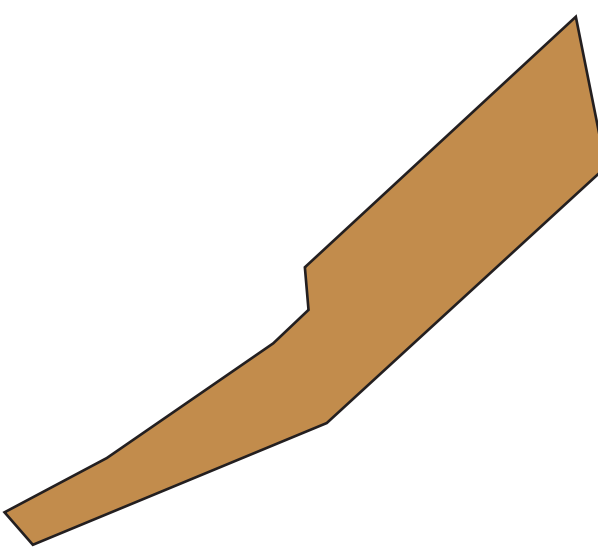
Water Surface:
10,000 sq yd



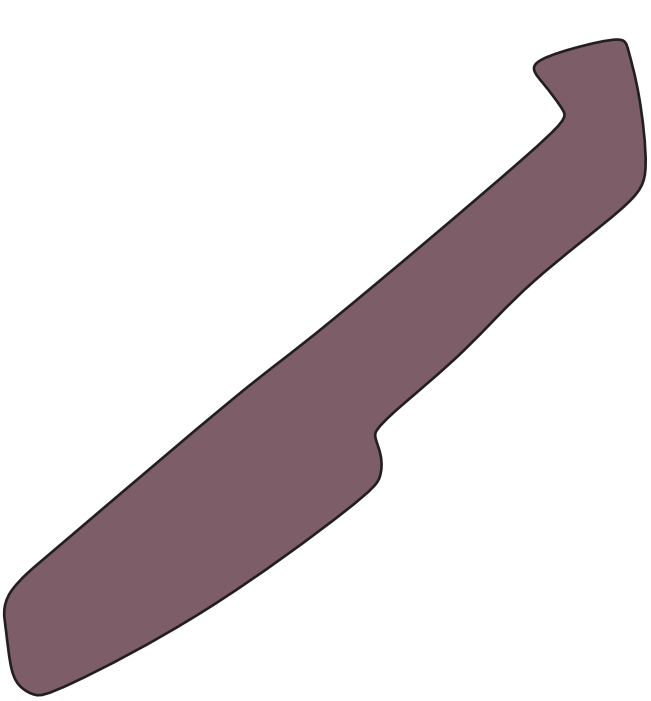
Green Spaces:
300,000 sq yd



Retail:
120,000 sq yd



Logistics Hub
180,000 sq yd



Total:
120,000 sq yd

MULTILEVEL CONTAINER WAREHOUSES

Overview

The multilevel container warehouse compresses the railyard's operations into a vertical structure. Trains enter at ground level, where containers are unloaded on one side and lifted by automated cranes to upper levels for short-term storage. On the other side, trucks access the building to load containers directly from storage. Each level is organized by destination, reducing wait times and improving flow. The building is designed with open frames and stacked bays, making the movement of freight visible from the outside. This vertical system maintains capacity while freeing up land below for public use. It turns what was once a closed, sprawling yard into a more compact, legible, and efficient infrastructure.

Retail

The towers use a modular steel frame sized for standard containers. The open grid allows efficient crane access and clear stacking. The system is flexible, easy to expand, and minimizes material use. Its exposed structure makes freight movement visible and direct.

Layout

The warehouse is split by function. One side unloads containers from trains into storage. The other side is for trucks. Each truck is sent to a specific spot to pick up the container it needs. This keeps everything moving fast and avoids backups. Rail and truck traffic stay separate and organized.

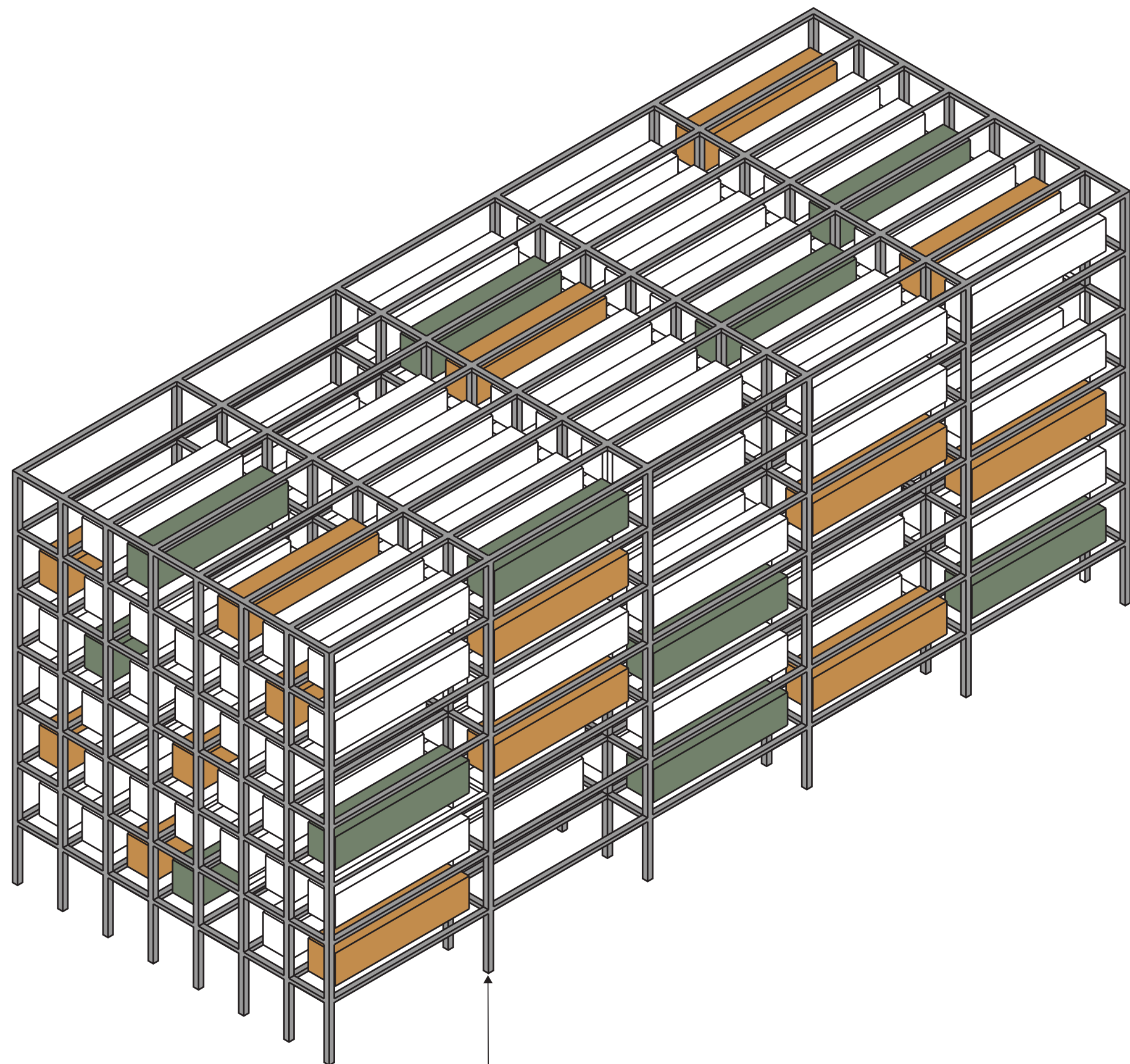
Global Precedents

Other countries like China, Germany, and the Netherlands have already implemented multilevel logistics hubs to handle dense freight movement in tight urban areas. These systems prove that vertical freight infrastructure can be fast, efficient, and scalable.

Capacity

245 Containers

13 Warehouse x 245 =
3,185



STEEL STRUCTURE

Existing Capacity

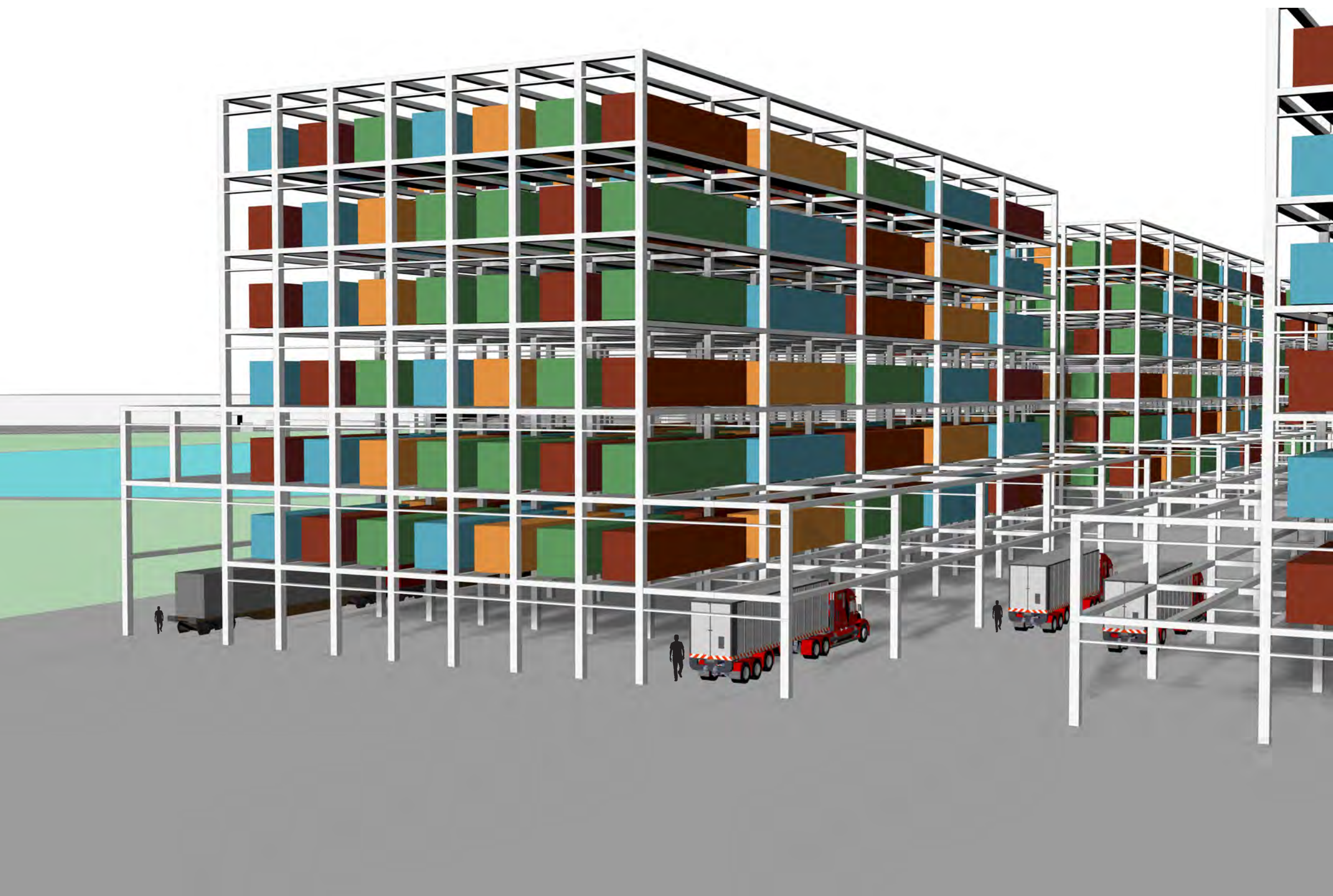
The existing yard holds up to 2,000 containers. The new vertical system doubles that with a 3,185-container capacity using just 20% of the land. Freight flow improves while freeing space for public use.



245
CONTAINERS



The bridge connects the neighborhood south of the I-10 to the park and retail, cutting through the towers with views into freight operations.



Pedestrian bridge cuts through the container towers, linking park to retail with views into freight operations.