URBAN RESEARCH
Mapping|Strategy|Site Selection

A new transportation system and a city will have a delicate and inti-
mate relationship influencing each other from inception through public
use. The last mile of the Hyperloop and how it maneuvers in and out
of a city is the studio’s primary concern. Mapping multiple criteria of
the city, evaluating these criteria and overlapping them are the main
concerns to locate the stations in an urban area. This studio gener-
aled two strategies for the new system planning in the city through
aiming at the existing problems of the city and the characteristics of
the Hyperloop. A central station or multiple decentralized stations has
both advantages.
Also translated as "the royal road" or "the king's highway" El Camino Real was linked among the stable's first long-distance, paved highways. Dating back to 1540 the Caminal Real was the Spanish military road which went through military bases, missions, and pueblos (civilian towns) throughout northern and southern California. The road's actual pathways present Los Angeles (1838) was not fixed and changed over time as weather, type of travel and even the tides dictated.

By the late sixteenth century, although local segments of El Camino Real were still heavily used, the primitive highway was eclipsed in importance by a water route between Southern California and Northern California. But when the so-called royal road was no longer used as a form of high-speed, regular goods and passengers over long

In early twentieth century due to the rise of the automobile and people's passion for tourism, the old Camino Real revived. By the mid-1920s, the highway construction was complete and in 1926 the state legislature designated much of it as U.S. Highway 101. Today, mission bells continue to guide motorists along the route.
ELECTRIC RAILWAYS: EARLY AGE

The first railway was built between Los Angeles and San Pedro for shipping. Then it expanded to other towns along the coast, as well as the main residential neighborhood in Pasadena. It formed the basic skeleton of Pacific Electric Railway network.

1905

ELECTRIC RAILWAYS: SPRAWLING

It soon expanded its range along the booming growth of the Los Angeles area, starting to spread to cities outside the County of Los Angeles. More networks were built by the previous owners, especially in the coastal area, where all the shipping and labour work located.

1911

Railway Network 1905

Railway Network 1911

High Power of Pacific Electric Railway
The golden age of electric railways came with the rise of Great Los Angeles. In its prime time, Red Car streetcars were all over the streets. It could be called a golden age. Then as the discovery of oil, individual automobiles started to encroach the market. As the 'red car' caused serious traffic congestion on the streets, they were finally abandoned. Then came the age of freeways.
The First Freeways

History Research | Freeways

Arroyo Seco Parkway - 1905 - 1958

1927 Freeway Plan Proposal

While the Arroyo Seco Parkway was under construction, proposals for a vast system of non-stop arterials of new freeways was underway. Connections between existing streets were shown and a future high-speed connecting pathways were born.

The very first stretch of freeway to be constructed in Los Angeles is the Arroyo Seco Parkway connection between downtown and Pasadena. Two lanes on either side were conceived - each with one "free" lane and one "fast" lane for passing vehicles. These two sides were originally different colors.

Although rendered in a utopian vision, new highway projects laid waste to historic neighborhoods and cut communities into separate pieces. Ideas of going underground existing structures were never realized, and the repercussions of new freeway projects were never fully thought through.

Arroyo Seco bridges connected existing nodes over the parkway. These bridges allowed many workers to have a job during the great depression - one main reason why this freeway project was built at this time early in Los Angeles Freeway History.

Map of proposed Los Angeles freeways and existing highways 1940

Fig 10: View of the Arroyo Parkway

Fig 14: Detail of proposed route through buildings

Fig 15: View of the Arroyo Parkway

Fig 17: Conceptual concept of highway "on-ramp"

Fig 18: Arroyo Parkway, grand opening

Fig 19: Arroyo Parkway with overhead bridge

Fig 16: Overview of proposed area for a new parkway

Fig 11: New Arroyo Freeway
Downtown Los Angeles spread in a ‘Y’ formation radially to three major destinations for the people of the city. The coastal valley suburbs, beach suburbs, and the San Pedro shipping town were the major areas of interest in the early days of the city. Santa Monica Pier, as we know it today, was completed in 1916.

Fig. 11: ‘Y’ formation of Los Angeles
Fig. 12: Historic Los Angeles
Fig. 13: Santa Monica Pier
Fig. 14: San Pedro shipping yard
Fig. 15: Route ‘Y’
Fig. 16: Santa Monica beach 1910
On September 26, 1927, the city signed a ten-year lease for 640 acres in Mines Field (known as today's Los Angeles International Airport), and L.A.'s first municipal airport was born. Before long, other airports rose in Los Angeles in 1930s and 1960s.

With an improved runway and dedicated facilities, a city airport would encourage air travel and passenger traffic between Los Angeles and other aviation-friendly cities; while permanent presence would allow airlines, mainstream companies, and other private enterprises to cluster around the site.

The Long Beach to Santa Monica opened in 1928 called the Port Los Angeles. The shelf was the largest in the world at the time of 4,600 feet served by Southern Pacific trains and ended in 1913.

Before 1937 the Port of Los Angeles opened, San Pedro Bay has been a port for receiving ships. In 1911, affiliated with the Port of Los Angeles, the Port of Long Beach opened. Both of them have helped transform the City of Angeles into the largest business investment in America. The opening of the Panama Canal in 1914 saw integral to the growth of the harbor. Los Angeles' strategic position on America's West Coast meant that its harbor would quickly become the main ports of call for Pacific and Atlantic trade.

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Network Typology

- Mesh
- Ring
- Hub-and-Spoke
- Bus
- Satellite
- Decentralized
- Hybrid
- Distributed

One center has privileged accessibility and thus represents the dominant element of the network and the spatial structure it supports.

Although the center is still the point of highest accessibility, the network is structured so that sub-centers have also significant levels of accessibility.

No center has a level of accessibility significantly different from the others.

Clearly defined
- Strictly reserved space for transport infrastructure.
- Ownership can also be clearly established.

Vaguely defined
- Space may be shared with other studies.
- Not the object of any particular ownership, only rights of passage.

Without definition
- Space has no tangible meaning, except for the distance it impairs.
- Little control and ownership are possible.
- Agreements must be reached for common usage.

Martitime corridor
Air corridor
Road
Rail
Cellular coverage
"No Service"
O'Hare is an airport 21 miles away from the downtown Chicago. It was an aircraft assembly plant before the land turned into the main airport not only serves the whole United States but also worldwide. A Blue Line Metro and Kennedy Express are built to connect the airport and the downtown area. Each takes you about 50 min and 30 min to the heart of the city. The airport is surrounded by logistics centers, green parks, and family houses. There are also two rails connected to the Chicago Union Station and the airport, the NCS and HRAU. Urban commercial areas gathered around the east outside the airport, where the expressway and rails enter the airport and rails pass through.
Midway is the only airport for Chicago below 3000'. By 1931 the airport claimed to be the "World's Busiest". The airport is located in a residential area where few commercial galleries gathered around the airport. They gathered along the Stevenson Expressway in the north and S. Cicero Ave, facing the airport from the east side. A Orange Line, which has linked the airport to the downtown Chicago for 30 years, has a terminal here. The largest logistics center lies in the south two blocks away from the airport and there is a car-park link the two. The other two logistics centers are each 5 miles in the north and 3 miles in the west. These centers are functional and communicate by complex rail systems.
Grand Central Terminal (GCT) is a commuter (and former intercity) railway terminal at 42nd Street and Park Avenue in Midtown Manhattan in New York City, United States. It is one of the largest transit centers in the world. Built by and named for the New York Central Railroad, it is the oldest and largest such facility in the world by number of platforms with 44 serving 77 tracks along them.

Influenced by the high-density Manhattan district, the surrounding area of GCT is mostly commercial use high-rise buildings and high-end retail. Within 30 minutes walking distance, there are plenty of restaurant, stores, offices and other public commercial use spaces.
Los Angeles Union Station (LUAS) is the main railway station in Los Angeles, California and the largest intercity passenger terminal in the Western United States. The site of LUAS is said to be a part of old Chinatown. It opened in May 1939 as the Los Angeles Union Passenger Terminal, replacing the Granada Station and Central Station.

Today, the station is a major transportation hub for Southern California, providing 60,000 passengers a day across to Amtrak (the National Railroad Passenger Corporation) long-distance trains, Amtrak California regional trains, Metrolink commuter trains, and several Metro Rail subway and light rail lines.

LUAS is located in a historic downtown neighborhood, within a 10-minute walking distance, passengers may 113 reach various of restaurants, shopping center and a cluster of theaters and civic buildings. The land use of the surrounding is mixed by commercial, public facility and residential use. There are three metro lines connect in this station.

Station Fact: Neighbored Type: CBD/Special District Neighborhood Condition: Neighborhood Center and Mid-Strength Neighborhood Change Status: Low Income Development Opportunity: High

Public Station compared to regional average

113

1.
The Wheaton Metro Station site is located at Georgia Avenue, Silver Spring, Maryland. It is at the intersection of Rowley Drive, Viers Mill Road, and Georgia Avenue, in the Wheaton Central Business District.

The station serves the suburb of Wheaton. The trip to this station takes approximately 20 minutes from the Metro Center, the Metro terminal in downtown. Also, it is quite close to the Metro Bus Plaza which covers 11 panels comprising approximately 132,089 square feet.

Located at the end of both city light rail and metro bus system, the station quickly became an important part for suburban residents. Growing demand on shopping and other commercial properties are spurred by the accumulation of commuting and transiting. The Metro property on the 117 west side of Georgia Avenue is approximately 210,082 square feet. Homes, a Metro Parking Garage that takes up approximately 83,168 square feet was built recently.
PortMiami is a seaport located in Biscayne Bay in Miami, Florida, United States. It is connected to Downtown Miami by Port Boulevard—a causeway over the Intracoastal Waterway—and to the neighboring Watson Island via the Port of Miami Tunnel. The port is located on Dodge Island, which is the combination of three historic islands (Biscayne, Lummus, and San José), that have since been combined into one. It is named in honor of 19 firm Florida Congressman Dante Fascell.

PortMiami is recognized, and has been for many years, as the "Cruise Capital of the World" and "Cargo Gateway of the Americas". It has retained its status as the number one cruise/passenger port in the world for well over two decades accommodating the largest cruise ships in the world and the operation of such major cruise lines as Carnival, Royal Caribbean and Norwegian Cruise Line, until the late 2000s.

Miami Port is also the largest recreational port in the Eastern US. The tourists as well as cargo can get access to the port by railroad, the MacArthur Causeway and major highways, the port develops quite a large number of ocean-going cruise ships that serve the increasing sightseeing population.
Los Angeles is spreading out through history.

Vision of Hyperloop:
With supersonic Hyperloop, the 30min journey can expand to San Francisco, Las Vegas and Phoenix from Los Angeles. So the challenge is how could we get people to their destination (home or office) consuming less time once they get off Hyperloop. Once the long distance travel and daily travel are connected together and the city’s transportation is much more efficient.
Smooth Transit focuses on using high-speed rail (Hyperloop) and bus hubs. Passengers from all 3 regions will travel to the main station. However, Hyperloop has to work as a network to integrate into the city. The strategy is to build stations in a dense area, combined with existing transit hubs, so as to solve the first and last mile problem. A more dense urban context will be adopted in the urban environment. It still uses the same technology as Hyperloop, but it will be driven. Filling with existing infrastructure, the network will be implemented into the city transit hotspot, so as to shrink the city by time.
Potential Sites: Location

Two potential sites are selected near Union station in downtown Los Angeles. Connected with the big transit hub of rail and metro in Union station, both of the two sites have high accessibility. They are discarded land close to LA River in downtown Los Angeles and facing a challenge to revitalize. Hyperloop station are opening and give them a second life.

Union Station

LAX Terminals

Potential Sites: Accessibility

High Accessibility with multiple transit method
Potential Sites: Current Situation

SITE A: Union Pacific Piggyback Yards

SITE B: Old Metro Station + LA River + Old Factories
Grasping the Sprawl City
Strategy C6: Inner Urban Loop

CITY 1

Walking/Biking/Biking / Personal Autonomous Car
< 15 min

Urban/IKE < 20 min

Loop Stations
Average Speed: 120 mph

Hyperloop Stations
Peak Speed: 700 mph

Nearby Cities

0 Walking Transfer

CITY 2

CITY 3

Moving to Tube A
Moving to Tube B
Moving to Tube C

CITY 9

CITY 1

CITY 2

TUBE A
TUBE B
TUBE C

Rotation Platform

Capsule Going to City 1
Capsule Going to City 2
Capsule Going to City 3
Inner-loop Stations
Hyperloop Stations

Multiple Capsules for Different Destinations

Circulation System
Strategy B1: Inner Urban Loop

CITY 1

CITY 2

CITY 3

LOOP TUBE
Potential Sites | Zoning

Strategy 1C: Yerba Buena Loop

SITE A: Piggyback Yards & Vacant land

SITE B: Ramps & River

SITE C: Vacant between Fwy 405

Fig 50: Brightlines of site A – Piggyback Yards filled with rails and vacant land.

Fig 51: The transit yard can be used as a way to load the passengers.

Fig 52: Elevated sections on both sides of the Fwy 405 create possibilities.

Fig 53: Views of site C positioned on the site under the limita.

Fig 54: The land and ramps create a view between current rail lines.

Fig 55: Land use at Fig 54 showing the site on the north.