

REWEAVING CLEVELAND'S ERIE LAKEFRONT

Design Thesis Report

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Chapter-1: INTRODUCTION

Historically, a train station has been at the heart of cities and villages across the country signifying its important contributions to the communities. There have been efforts globally to recreate that synergy within the neighborhood context of each station by making them integral parts of their respective communities. Transportation Junctions and Systems can be designed to maximize linkages with their neighborhoods in concert with the residents and stakeholders of these communities. They reflect best practices in urban design, be sustainable, incorporate appropriate green technology, and successfully integrate all modes of transportation. Stations will be visible, secure, attractive, and relate to the context of the surroundings. A high-quality design results in an environment that fosters ridership and elevates the entire station area vicinity.

Transportation Hub can be defined as a location which handles several transport modes. Transport modes can be of various types like tramway, bus, automobile, ship, pedestrian, railway, metro or rapid transit, coach, truck, airplane and ferry. Thus, the term, *Transportation Hub*, can be used for both the freight transfers and passenger transfers. One can expect numerous advantages from transportation hubs. The transportation hubs offer high frequency of services in respect to other locations. The next advantage is the impressive development of an efficient distribution system simply because the transportation hubs can handle more traffic. Most of the transportation hubs make use of the shared transshipment facilities and so, the people can avail higher quality infrastructures at lower costs. Transportation hubs can be discussed in international, national and regional levels.

The nature of public transport makes it necessary for people to change transport modes throughout the journey. The first hub a passenger often will come across is a bus stop where one changes from pedestrian to bus. But often public transport is built around a network of different transportation methods, each serving different functions with varying frequencies, distances, speeds and stopping patterns, so-called INTER-MODAL PASSENGER TRANSPORT. Typical transport hubs in public transport include bus stations, Railway Stations and Metro Stations, while a major transport hub, often multimodal (bus and rail), may be referred to in American English as a Transport Center or Transit Center. Sections of city streets that are devoted to functioning as transit hubs are referred to as *transit malls*.

Transportation hubs can also be airports. And, the top airline hubs of the world are; Atlanta- Hartsfield, Chicago- O' Hare, London- Heathrow, Tokyo- Haneda, Los Angeles, Dallas, Charles de Gaulle- Paris, Frankfurt Main, Amsterdam, Las Vegas, Denver, Madrid, New York, Phoenix, Beijing, Hong Kong, Houston, Bangkok, Minneapolis, Detroit, Orlando, Newark, San Francisco, London- Gatwick, Singapore, Philadelphia, Tokyo- Narita, Miami, Toronto and Seattle.



And, when it comes to discuss about the busiest railway stations of the world or the railway hubs, we cannot really ignore the immense significance of Kharagpur station, India. This station is known for the world's longest platform and it handles incredible number of trains every day. Shinjuku Station is considered to be the busiest train station in the entire world. It is also the commercial hub of Shinjuku ward, Tokyo, Japan. It can be easily labeled a transportation hub with so many lines operating over there. Some of the significant lines are Yamanote Line, Narita Express, Odakyu Line, Keio Electric Railway Keio Line and so on.

Harbors which are handling several ships and cargo would also be coming under the category of transportation hubs. Harbors can be of two types, natural and artificial. Natural harbors are usually large and can accommodate a huge number of ships. San Francisco Bay in California is a natural harbor. Artificial harbors are made with jetties and piers to make space for the larger ships. The port of Trondheim in Norway is also another transportation hub as far as the busy harbors of the world are concerned. The harbors which allow the ships to load and unload cargo are usually combined with ports. Harbors are the most economically significant form of transportation hubs as any nation can carry out international trade through ports and harbors which have got the adequate infrastructure to accommodate large number of ships. It is quite evident from this brief discussion that transportation hubs can facilitate trade and promote tourism all over the world. It is about managing more traffic in an impressive manner.

Modern electronic *Passenger information systems* and journey planners require a detailed digital representation of the stops and Transportation hubs including their Topology Public transport data information standards such as *Trans-modal* and IFOPT have been developed to provide a common terminology, conceptual models and data exchange formats to allow the economic, large scale collection and distribution of stop and interchange data.



1.1 Understanding the Design Problem

The aim of the project is to create a **TRANSPORTATION HUB** that accommodates needs for all users and constituents associated with a transportation facility. A transportation hub that brings many forms of public transportation together and allows commuters to utilize various means of transportation to reach their destination.

The program requirements for Project 2009: Lakefront Station should be used as a guideline to help define what the facility needs to accomplish. The intension of the projects is to encourage the exploration of innovative planning strategies that further the discussion around transportation, public space, and the role each will play within the transit facility.

A new multi-modal transportation center would provide the traffic to activate the vast space and stimulate re-development of the mall's long (east and west) edges. The clarity and strength of the Group Plan has been preserved, even though the key element, a train station, was never implemented. This important public space will play a critical role in how Downtown Cleveland connects to Lakefront Station - Cleveland's Multi-Modal Transportation Center.

In 2002, the City of Cleveland adopted a planning document titled "*Connecting Cleveland: The Lakefront Plan*" as part of the *City's Master Plan*".

This plan, largely an effort to provide a development framework for the Lakefront, reaffirmed the competition site as the desired location for a future *Multi-Modal Transit Center*. While technology and transportation has evolved dramatically over the past 100 years, the future location for this Lakefront Station has remained consistent with Burnham's 1903 plan. Unlike the Group Plan's proposal, any future northern terminus to the mall would not turn its back on the waterfront. Just as the Group Plan was a "big plan" for the monumental core of one of America's capitals, proposals for a new station must look beyond the current condition of transportation, connectivity, and civic identity to the next 100 years of influence transportation will have on Downtown Cleveland.



1.2 Scope and Limitations of the Project

Designs for the new Multi-Modal Transportation Center should cater to the following attributes:

- Balance the requirements of each mode of transportation and resolve the complex infrastructure program with innovative facility planning strategies.
- Establish a significant pedestrian connection from The Mall to North Coast Harbor. This connection must provide 24-hour, public access from Downtown to the Lakefront.
- Illustrate an understanding of the existing facilities on the site and justify their use, removal, and/or adaptation.
- Illustrate an understanding of the existing road and highway alignments on the site and justify their use, removal and/or adaptation.
- Evaluate adjacent planning initiatives, and, where appropriate, incorporate influential planning concepts into the planning strategy for the multi-modal transportation center.
- Provide a cohesive plan that incorporates all existing rail programming with provisions for future High Speed Rail service.
- Ensure maximum accessibility for users with a variety of disabilities. All station program functions and platforms must be handicap accessible and provide access from both North Coast Harbor and Downtown Cleveland.

1.3 Feasibility of the Project

Recently, rising fuel costs and considerable interest in sustainable transportation has led to substantial federal commitment to upgrading America's rail system for the twenty-first century. This investment by the federal government has spurred a number of proposals for passenger rail service across the country. The details in these proposals vary in scope and timeline, but all must appropriately consider their role in contributing to a complete national network of sustainable communities. In the State of Ohio, the Ohio Hub plan re-establishes Cleveland as an important rail hub in Ohio, for travel throughout the Midwest and to cities on the East Coast. By utilizing rail to strengthen connectivity, these new multi-modal transportation networks - and the facilities that serve them - will help reinforce the social and economic sustainability of the American City.



Chapter-2: CLEVELAND, OHIO.....*the historic transportation hub*

Cleveland is a city in the U.S. state of Ohio and the county seat of Cuyahoga County, the most populous county in the state. The municipality is located in northeastern Ohio on the southern shore of Lake Erie, approximately 60 miles (100 km) west of the Pennsylvania border. It was founded in 1796 near the mouth of the Cuyahoga River, and became a manufacturing center owing to its location at the head of numerous canals and railroad lines. With the decline of heavy manufacturing, Cleveland's businesses have diversified into the service economy, including the financial services, insurance, legal, and healthcare sectors, though the city's population has continued to decline. Cleveland is also home to the Rock and Roll Hall of Fame.

Greater Cleveland is the center of Ohio, the largest metropolitan area in Ohio. The Cleveland-Elyria-Mentor Metropolitan Statistical Area which in 2000 ranked as the 23rd largest in the United States with 2,250,871 people. Cleveland is also part of the larger Cleveland- Akron-Elyria Combined Statistical Area, which in 2000 had a population of 2,945,831, and ranked as the country's 14th largest. Like many former urban manufacturing centers of the U.S. Rust Belt, Cleveland as a city has declined from a population of 914,000 in 1950 to less than half that today.

Suburbanization and white flight plagued the city in the late 1960s and 1970s, when financial difficulties and a notorious 1969 fire on the Cuyahoga River challenged the city. The city has worked to improve its infrastructure, diversify its economy, and invest in the arts ever since, and now Cleveland is considered an exemplar for public-private partnerships, downtown revitalization, and urban renaissance. Ohio was ranked as one of the most livable cities in the United States, and the city was ranked as the best city for business meetings in the continental U.S. The city faces continuing challenges, in particular from concentrated poverty in some neighborhoods and difficulties in the funding and delivery of high-quality public education.



City-Scape of Downtown Cleveland , Ohio

2.1 History and Evolution of Cleveland

Cleveland is located on the southern shore of Lake Erie, one of the country's largest fresh water resources. Founded in 1796 near the mouth of the Cuyahoga River, Cleveland became a manufacturing center owing to its location at the head of numerous canals and railroad lines. The city has a total area of 82.4 square miles (213.5 km²), of which, 77.6 square miles (201.0 km²) is land and 4.8 square miles (12.5 km²) is water. As of the 2000 Census (prepared by the United States Census Bureau), the city proper had a total population of 478,403. There were 478,403 people, 190,638 households, and 111,904 families residing in the city. The Cleveland- Elyria-Mentor Metropolitan Statistical Area which in 2000 ranked as the 23rd largest in the United States with 2,250,871 people.



Strategic Location of Cleveland in Ohio



Location of Downtown Cleveland

After the incorporation of Cleveland's first urban transportation rail service in 1834, the city established itself as an important Midwest rail hub. By the end of 1851, over 64,000 passengers had ridden the CC & C railroad and by 1853 Cleveland was connected to Pittsburgh, New York City, Chicago, and St. Louis.¹ In 1866, Union Depot - a 600' long rail depot with a 96' tower on its south façade - was built to replace previous depot that had burnt to the ground. By the 1890's, Cleveland had become a major national rail center.

Cleveland falls in the state of *Ohio*. From 1976 to present day, Ohio has been in transition. Several fundamental changes in the political, economic, and social lives of Ohioans characterizes this era. Generally, Ohioans have become much more conservative in their politics, enabling the Republican Party to dominate the state. Economically, Ohio, once one of the leading manufacturers in the United States of America, has experienced a decline in industrial jobs. As factories have relocated to other states or countries, Ohio businesses have shifted to more service-oriented positions. Cities, which declined as factories closed, are now being revitalized as new businesses arrive. Race, gender, and class issues continue to exist, as Ohioans struggle to provide equality for all people.

In 1834, Cleveland's first urban railway provided rail service from the east side of Cleveland to Downtown's Public Square. By the mid-1800's, interurban commuter rail service and intercity industrial and passenger rail increased in the City establishing rail shipping and travel as the primary mode of transportation within and throughout Northeast Ohio. Cleveland remained an important rail hub until after World War II when transportation for most industrial shipping and personal travel shifted from the nation's rail lines to the growing interstate highway system. Today, many of the same industrial rail lines still carry goods through the City, Amtrak operates two intercity passenger lines, and the Greater Cleveland Regional Transit Authority provides an extensive network of buses and limited commuter rail service throughout Cuyahoga County.

Topography

According to the United States Census Bureau,[1] the city has a total area of 82.4 square miles (213.5 km²), of which, 77.6 square miles

(201.0 km²) is land and 4.8 square miles (12.4 km²) is water. The total area is 5.87% water. The shore of Lake Erie is 569 feet (173 m) above sea level; however, the city lies on a series of irregular bluffs lying roughly parallel to the lake. In Cleveland these bluffs are cut principally by the Cuyahoga River, Big Creek, and Euclid Creek. The land rises quickly from the lakeshore, sits at an elevation of 650 feet (198 m), and Hopkins Airport, only 5 miles (8 km) inland from the lake, is at an elevation of 791 feet (241 m).

Climate

Cleveland possesses a humid continental climate (Koppen climate classification *Dfa*), typical of much of the central United States, with very warm, humid summers and cold, snowy winters. The Lake Erie shoreline is very close to due east-west from the mouth of the Cuyahoga west to Sandusky, but at the mouth of the Cuyahoga it turns sharply northeast. This feature is the principal contributor to the lake effect snow that is typical in Cleveland (especially east side) weather from mid-November until the surface of Lake Erie freezes, usually in late January or early February. The lake effect causes snowfall totals to range greatly across the city: while Hopkins Airport has only reached 100 inches (254 cm) of snowfall in a given season three times since 1968, seasonal totals approaching or exceeding 100 inches (254 cm) are not uncommon in an area known as the "Snow Belt", extending from the east side of Cleveland proper through the eastern suburbs and up the Lake Erie shore as far as Buffalo. Despite its reputation as a cold, snowy place in winter, mild spells often break winter's grip with temperatures sometimes soaring above 50 °F (10 °C). The all-time record high in Cleveland of 104 °F (40 °C) was established on June 25, 1988, and the all-time record low of -20 °F (-29 °C) was set on January 19, 1994. On average, July is the warmest month with a mean temperature of 71.9 °F (22.2 °C), and January, with a mean temperature of 25.7 °F (-3.5 °C), is the coldest. Normal yearly precipitation based on the 30-year average from 1971 to 2000 is 38.7 inches (983 mm). Yearly precipitation rates vary considerably in different areas of the Cleveland metropolitan area, partly due to thunderstorm development interacting with the Lake Breeze front. The least precipitation occurs on the western side and directly along the lake, and the most occurs in the eastern suburbs. Parts of Geauga county receive over 44 inches of liquid precipitation annually.

2.2 Downtown Cleveland

Downtown Cleveland is the central business district of the City of Cleveland and Northeast Ohio. Reinvestment in the area in the mid-1990s spurred a rebirth that continues to this day, with over \$2 billion in residential and commercial developments slated for the area over the next few years. While much of the city's population decamped to surrounding suburbs in the second half of the 20th century, downtown Cleveland gained population in the first decade of the 21st century, growing from 7,261 in 1990 to 9,599 as of the 2000 Census. In 2005, the Brookings Institution called it one of America's "*Emerging Downtowns*" because of its 32.2% growth over the period.

Over \$2 billion in capital projects are slated for the downtown Cleveland area alone over the next few years. Currently, downtown Cleveland is one of a few city neighborhoods gaining population. Between 1990 and 2000 downtown's population grew, by 28%, for the first time in forty years to nearly 6,000 residents. By 2005, population downtown had grown by an additional 30% with a projected population by 2010 of 20,000. In recent years, downtown development has followed this population trend. A variety of residential, office, infrastructure, and mixed-use projects have been planned and developed over the past few years. Two major projects are currently being planned for sites immediately adjacent to the Cleveland Design Competition site; both of which will have a significant impact on how a Multi-Modal Transit Facility would be utilized.

Immediately north Downtown region, the Port Authority has begun a planning exercise for their *ERIE LAKEFRONT property*. Initial conceptual plans for this property suggest three distinct Lakefront Districts phased over many years. The first phase, including over 850,000 feet of mixed-use development around North Coast Harbor, is conceived as a new, year round, urban, maritime district. While still in the early planning stages at the launch of the 2009 Cleveland Design Competition, the planning for Lakefront Districts will evolve quickly over the course of the competition. Conceptual plans have already begun hinting at a Multi-Modal Transit Center located on the competition site. Immediately south, towards the City's Civic Center, MMPI and Cuyahoga County are planning a new Convention Center and Medical Mart. The current plans calls for the renovation of the Public Auditorium, which sits east of Mall B, the renovation and expansion of the existing convention center, and the addition of a four story Medical Mart building immediately adjacent the Convention Center. The developers of this \$425 million dollar construction project hope to have the first phase open by 2010, with the complete facility in operation by 2013.



Architecture in Downtown Cleveland

Cleveland's downtown architecture is diverse. Many of the city's government and civic buildings, including City Hall, the Cuyahoga County Courthouse, the Cleveland Public Library, and Public Auditorium, are clustered around an open mall and share a common neoclassical architecture. Built in the early 20th century, they are the result of the 1903 Group Plan, and constitute one of the most complete examples of City Beautiful design in the United States.

The Terminal Tower, dedicated in 1930, was the tallest building in North America outside New York City until 1967 and the tallest in the city until 1991. It is a prototypical Beaux-Arts skyscraper. The two newer skyscrapers on Public Square, Key Tower (currently the tallest building in Ohio) and the BP Building, combine elements of Art Deco architecture with postmodern designs. Another of Cleveland's architectural treasures is The Arcade (sometimes called the Old Arcade), a five-story arcade built in 1890 and renovated in 2001 as a Hyatt Regency Hotel. Cleveland's landmark ecclesiastical architecture includes the historic Old Stone Church in downtown Cleveland and the onion domed St. Theodosius Russian Orthodox Cathedral in Tremont.

Running east from Public Square through University Circle is Euclid Avenue, which was known for its prestige and elegance. In the late 1880s, writer Bayard Taylor described it as "*the most beautiful street in the world*". Known as "Millionaire's Row", Euclid Avenue was world-renowned as the home of such internationally known names as Rockefeller, Hanna, and Hay. Cleveland is home to four parks in the countywide Cleveland Metroparks system, the "*Emerald Necklace*" of Olmsted-inspired parks that encircles the region. In the Big Creek valley sits the Cleveland Metroparks Zoo, which contains one of the largest collection of primates in North America. The other three parks are Brookside Park and parts of the Rocky River and Washington Reservations. Apart from the Metroparks is Cleveland Lakefront State Park, which provides public access to **Lake Erie**. Among its six parks are Edgewater Park, located between the Shore way and Lake Cleveland. The City of Cleveland's Rockefeller Park, with its many Cultural Gardens honoring the city's ethnic groups, follows Doan Brook across the city's east side.



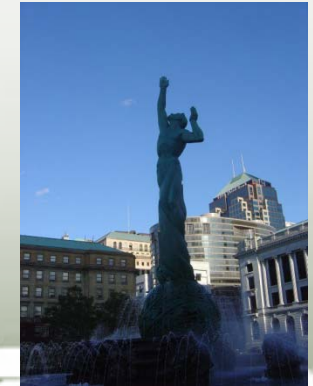
Terminal Tower



Superior Avenue near Public Square



Public Buildings and Sculptures near Lake Front



Public Squares: *Symbol of Socio-Cultural Life of Cleveland*

The heart of downtown and the city's first settled area, Public Square was laid out by city founder Moses Cleveland in 1796 and has remained largely unchanged. It consists of a large open space, cut into quadrants by Ontario Street and Superior Avenue. Public Square is the symbolic heart of the city, and has hosted presidents, vast congregations of people, and a free annual 4th of July concert by the Cleveland Orchestra. At one time, Public Square was fenced off and inaccessible to vehicles. In 1860, the Perry Monument, a memorial to Commodore Oliver Hazard Perry's victory in the Battle of Lake Erie in the War of 1812, was dedicated in the center of Public Square.

In 1892, it was moved out of the square, which by then had the fences removed after lobbying by commercial interests. Public Square is also home to the Soldiers' and Sailors' Monument, which commemorates residents of Cuyahoga County who served in the Civil War. Public Square also features a statue of Cleveland; a statue of Tom L. Johnson, the city's most famous mayor; a large amount of shrubbery and other landscaping; and a large public fountain. The Consulate-General of Slovenia in Cleveland is in the 55 Public Square building. Notable buildings on Public Square include the Terminal Tower, as well as **Key Tower**, the tallest building in Ohio and one of the tallest in the United States. Public Square is also home to the historic Old Stone Church, completed in 1855. The west side of Public Square was to become the headquarters of the Cleveland Trust Company, then called Ameritrust, but the project was cancelled, leaving that side of the square open to this day, with only a surface parking lot on the site. The region is currently debating the best use of Public Square. Plans floated for a square redesign include an ice skating rink, amphitheater, all of which are designed to draw people to the square.



View of Public Square in early 1900's



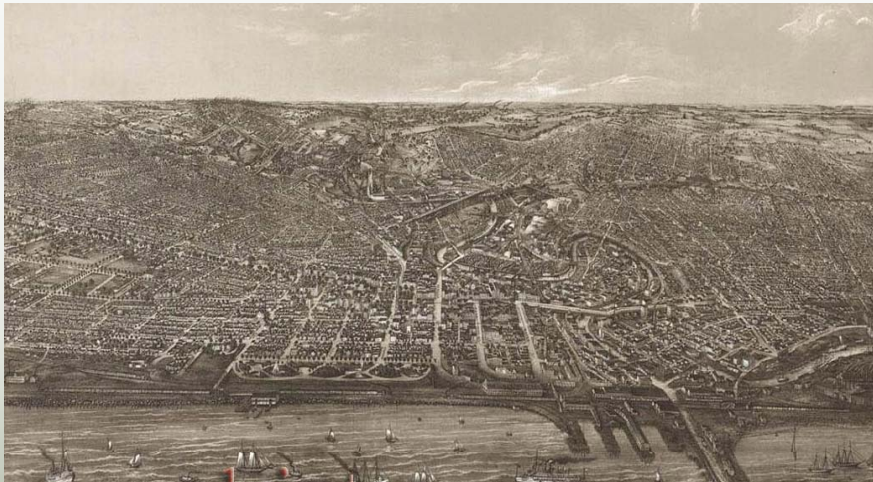
View of the Public Square today

2.3 Transportation Systems in U.S.A.

Transportation History.....1800-1900

Between 1800 and 1900, the way Americans moved around their world changed drastically. In 1800, the only practical way to travel and trade across long distances was along the nation's natural waterways. As a result, settlement clung to the nation's coasts and rivers. A few roads connected major cities, but travel on them was difficult and time consuming. One hundred years later, railroads sped along thousands of miles of track. Large ships moved passengers and freight across the oceans and smaller boats plied the nation's rivers, lakes and canals. Bicycles, carriages and wagons rolled over thousands of miles of roads. Seventy-five million people lived coast to coast, many in towns and cities that had sprouted up along the new routes.

One of the fastest growing of these young cities was Chicago. In 1800 the state of Illinois didn't exist; by 1900, its largest city was an economic powerhouse with over 1.6 million residents. Located at the intersection of river, lake and railroad routes, Chicago's industrial, manufacturing and commercial life depended on the boats and trains traveling into and out of the city. Lake steamers carried coal and iron ore to Chicago's steel mills. Railroads brought livestock to the city's stockyards and shipped sides of beef, pork, and lamb to the rest of the country. By 1900, the average American had come to depend on far-flung places for the basic staples of life. Fruit from California, furniture from Chicago and clothes from New York now criss-crossed the country with a speed and ease unheard of a century earlier.



Map, "Williams' New Trans-Continental Map of the Pacific R.R. and Routes of Overland Travel..."
July 23, 1923



The *Leviathan* steaming up the Hudson River,
1877, Library of Congress, Geography -Map Division

Transportation History, 1900-1950

By the dawn of the 20th century, America was in the midst of great change. Although most of the population lived in rural areas, people were moving to cities in record numbers. Electric trolley lines meant people were less dependent on horse and foot to get around. They could travel farther faster and, because it was relatively cheap, they did. For 5 cents, commuters could hop on a streetcar in downtown New Haven or Memphis and ride to their homes in the new streetcar suburbs, far from the crowds and chaos of the cities.

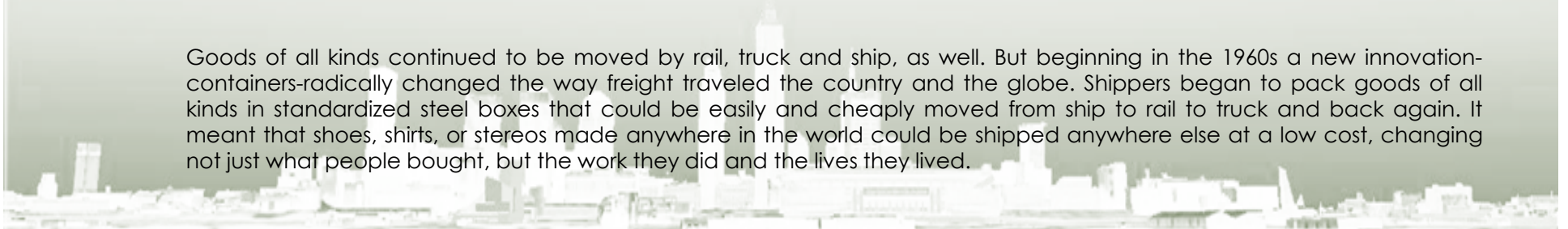
In the early part of the century, a new vehicle entered the fray. In 1900, Americans owned 8 thousand cars, in 1920, 8 million. Cities and suburbs both spread out. Outside of American cities, however, travel by road was still difficult. It was rails and waterways that made it possible to move people and goods across long distances. Railroads were one of the nation's largest businesses. During World War II, Trains carried over 90 percent of wartime passengers and nearly all of the nation's long distance freight. After the war, however, as Americans slid behind the wheel in record numbers, railroads lost riders and concentrated on hauling freight. The nation's rivers, lakes, and the oceans remained a critical part of the U.S. transportation story. Millions of immigrants came to this country by ocean liner from Europe or Asia. Others crossed the oceans for business and pleasure.

And an entirely new mode of transportation was introduced in the early years of the 20th century. Regional airlines began offering regularly scheduled passenger flights in the late 1920s. But it would be another 40 years before air travel would truly take off as a popular and affordable way to travel.

Transportation History, 1950-2000

By 1950's, nearly 50 million cars were on the roads. In the year 2000, there was more than 220 million—more than one car for every person over the age of 18. More people shopped and worked miles from home—often in sprawling edge cities or far-flung suburbs. Although cars polluted the atmosphere and commuting times rose, for most Americans a car was no longer a luxury, it was a necessity they would be loathes living without. A great increase in air travel also changed how we lived. Beginning in the 1960s, airports expanded to serve the millions of new passengers and the flourishing air cargo business.

Goods of all kinds continued to be moved by rail, truck and ship, as well. But beginning in the 1960s a new innovation—containers—radically changed the way freight traveled the country and the globe. Shippers began to pack goods of all kinds in standardized steel boxes that could be easily and cheaply moved from ship to rail to truck and back again. It meant that shoes, shirts, or stereos made anywhere in the world could be shipped anywhere else at a low cost, changing not just what people bought, but the work they did and the lives they lived.



2.4 Position of Cleveland on U.S. Transportation Map

"Make no little plans; they have no magic to stir men's blood" (Daniel Burnham, 1903)

After the incorporation of Cleveland's first urban transportation rail service in 1834, the city established itself as an important Midwest rail hub. By the end of 1851, over 64,000 passengers had ridden the CC & C railroad and by 1853 Cleveland was connected to Pittsburgh, New York City, Chicago, and St. Louis.¹ In 1866, Union Depot - a 600' long rail depot with a 96' tower on its south façade - was built to replace previous depot that had burnt to the ground. By the 1890's, Cleveland had become a major national rail center, and Union Depot was too small for the number of people coming into Cleveland daily.

The first formal plan placing a Lakefront Station on the competition site, the 1903 Group Plan, was proposed by Daniel Burnham, leading a team of designers including John Carrere and Arnold Brunner. The group plan proposed a new union station at the north end of a large mall, bringing visitors to Cleveland into a Civic Center anchored at its corners by four grand institutional palazzi. Ultimately, a competing plan for a union station on Public Square was completed in 1928 as part of the Union Terminal Tower Complex, leaving the proposed train station at the north end of the Mall unrealized. In 1976, Amtrak built a station north of the Mall and south of the Shoreway (Route 2). The station currently serves the Lake Shore Limited and Capitol Limited routes between Chicago and New York/Boston and Washington D.C.³ In conjunction with the City's bicentennial celebration in 1996, Greater Cleveland RTA completed a light rail Waterfront line parallel to the Amtrak service with stations at West Third and East Ninth Streets.

Geographically speaking, at the start of the nineteenth century, Ohio was isolated. The Appalachian Mountains on the east, Lake Erie to the north, and the Ohio River to the south, isolated the state from its neighbors. During the nineteenth century, new transportation systems formed, granting Ohioans easier access to all parts of the United States of America. In the first decades of the 1800s, turnpikes originated. Water travel became easier with the advent of steamboats. Beginning in the 1820s, canals provided Ohioans with a cheaper and faster form of travel. In the 1840s and 1850s, railroads emerged, allowing Ohio residents to ship their products to market much more easily and quickly. With the start of the twentieth century, several new transportation systems, including automobiles, trucks, and airplanes, emerged. From Zane's Trace, to the Ohio and Erie Canal, to the Wright brothers, Ohioans were at the forefront of all of these transportation innovations.

In 1834, Cleveland's first urban railway provided rail service from the east side of Cleveland to Downtown's Public Square. By the mid-1800's, interurban commuter rail service and intercity industrial and passenger rail increased in the City establishing rail shipping and travel as the primary mode of transportation within and throughout Northeast Ohio. Cleveland remained an important rail hub until after World War II when transportation for most industrial shipping and personal travel shifted from the nation's rail lines to the growing interstate highway system. Today, many of the same industrial rail lines still carry goods through the City, Amtrak operates two intercity passenger lines, and the Greater Cleveland Regional Transit Authority provides an extensive network of buses and limited commuter rail service throughout Cuyahoga County.

Chapter-3 : CURRENT SCENARIO AND EXISTING ISSUES

Cleveland's location on the Cuyahoga River and Lake Erie has been key to its growth. The Ohio and Erie Canal coupled with rail links helped establish the city as a major American manufacturing center. Steel and many other manufactured goods emerged as its industries. The city has sought to diversify its economy to become less dependent on its struggling manufacturing sector. Although it is a commonly known fact that the Ohio region had come under great economic depression during the 1970's. Recent local government policies have been focused on bringing the city out of this economic situation and restoring the long lost glory .

3.1 Economy of Cleveland

Cleveland is the corporate headquarters of many large companies such as Eaton Corporation, Forest City Enterprises, Sherwin-Williams Company and KeyCorp. NASA maintains a facility in Cleveland, the Glenn Research Center. Jones Day, one of the largest law firms in the world, traces its origins to Cleveland, and its Cleveland office remains the firm's largest. However, in recent years, Cleveland has lost other corporate headquarters, including BP, National City Corporation and Oglebay Norton, mostly through acquisitions or mergers. In 2005, Duke Realty Corp., one of the area's largest landlords, announced it was selling all of its property in the Cleveland area because of the stagnation of the market; however, the company continues to maintain a large office building portfolio in the southern suburbs. The commercial real estate market rebounded in 2007 as office properties were purchased at a record pace. From the beginning of July to the end of September, 2007, there was one residential foreclosure for every fifty-seven homes in the metropolitan area, and ten percent of the city's homes are now vacant, due in part to the rise in foreclosure filings. Many of the foreclosed homes are vacant and have been vandalized.

Cleveland's largest employer, *the Cleveland Clinic*, ranks among America's best hospitals as tabulated by *U.S. News & World Report*. Cleveland's healthcare industry includes University Hospitals of Cleveland, a noted competitor which ranked twenty-fifth in cancer care, and Metro Health medical center. Cleveland is an emerging area for biotechnology and fuel cell research, led by Case Western Reserve University, the Cleveland Clinic, and University Hospitals of Cleveland. Cleveland is among the top recipients of investment for biotech start-ups and research. Case Western Reserve, the Clinic, and University Hospitals have recently announced plans to build a large biotechnology research center and incubator on the site of the former Mt. Sinai Medical Center, creating a research campus to stimulate biotech startup companies that can be spun off from research conducted in the city.



City leaders stepped up efforts to cultivate a technology sector in its economy in the early 2000s. Former Mayor Jane L. Campbell appointed a "tech czar" whose job is to actively recruit tech companies to the downtown office market, offering connections to the high-speed fiber networks that run underneath downtown streets in several "high-tech offices" focused on the Euclid Avenue area. Cleveland State University hired a Technology Transfer Officer to work full time on cultivating technology transfers from CSU research to marketable ideas and companies in the Cleveland area, and appointed a Vice President for Economic Development to leverage the university's assets in expanding the city's economy. Case Western Reserve University participates in technology initiatives such as the One Community project, a high-speed fiber optic network linking the area's major research centers intended to stimulate growth.

Cleveland was named an Intel "Worldwide Digital Community" along with Corpus Christi, Texas, Philadelphia, Pennsylvania, and Taipei, Taiwan. This distinction added about \$12 million for marketing to expand regional technology partnerships, create a city-wide WiFi network, and develop a tech economy. In addition to this Intel initiative, in January 2006 a New York-based think tank, the Intelligent Community Forum, selected Cleveland as the sole American city among its seven finalists for the "Intelligent Community of the Year" award. The group announced that it nominated the city for its One Community network with potential broadband applications. The One Community Network is collaborating with Cisco Systems to deploy a cutting-edge wireless network that could provide widespread access to the region. Cisco is testing new technologies in wireless "mesh" networking. One Community and Cisco officially launched the first phase in September 2006, blanketing several square miles of University Circle with wireless.

3.2 Recent Developments in Downtown Cleveland

Development in downtown Cleveland is a little bit of the chicken or the egg," said retail consultant Robert Antall. "You need conveniences to attract people, but it's hard to get retailers to come in unless you have the people. But the goal is the same: Bringing shoppers and diners back to downtown streets, where the shells of once-glorious department stores sit empty and existing retail hubs including **Tower City Center** and the **Galleria at Erievue** struggle to hang on or reinvent themselves. With gas prices topping \$4, a nationwide push for more pedestrian-friendly communities and an aging baby-boomer population eyeing downtown living, center cities including Cleveland might have a better shot at retail growth. Meanwhile, downtown's residential population has grown to roughly 10,000, more than twice what it was eight years ago.

