Reimagining Streets: A Guide for Walkability in Downtown Los Angeles

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Abstract

This report examines methods that cities can utilize to improve their walking environment. Specifically, this report assesses the best policies and infrastructure enhancements for increasing walkability within Downtown Los Angeles based on the 'Ten Steps of Walkability' created by renowned city planner Jeff Speck. Using information gathered from surveys, interviews, literary analysis, and personal experience I will highlight different approaches and strategies for creating walkable environments, and propose my own adaptation of Speck's ten steps. I have created a street redesign for a portion of West 8th Street in Downtown following the guidelines of this adapted twelve-step formula. This redesign can serve as a blueprint to create additional walkable street designs throughout the city. Furthermore, I will analyze and discuss the effects that improvements in walkability have on the community. The goal of this project is to make the case that walking is a fundamentally important function of the street.

"Cars are happiest when there are no other cars around. People are happiest when there are other people around." – Dan Burden

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Introduction: What is walkability and why is it important?

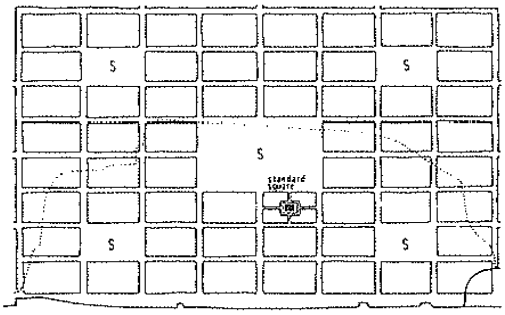
Walking is a basic human activity and the simplest form of transportation. It is something that almost anyone can do and something that most people wish they did more often. However, it seems that many cities in the U.S. have designed and built their environments to make walking as difficult as possible. Walkability is a term used to describe a multitude of factors that make a street, neighborhood, or city appealing and viable for use by pedestrians. The process of making a city more walkable includes elements of policy and design. Features that contribute to walkability are sidewalks, streets, buildings, safety, and public spaces, among many others, that bring people out of their private spaces and into the public realm. My research focuses on enhancing policy and design specifically for pedestrians in Downtown Los Angeles. For this project I define walkability criteria using 'The General Theory of Walkability' created by notable author and city planner Jeff Speck, introduced in his book *Walkable City: How Downtown Can Save America, One Step At A Time.*[1] In his book Speck argues that to make walking appealing, four conditions must be met: the walk must be useful, safe, comfortable, and interesting.[2] He expands upon this theory with his 'Ten Steps of Walkability', which serve as guide for transforming downtowns into pedestrian friendly destinations. I will explain these ten steps and create an adapted twelve-step guide highlighting the 'best strategies', for making the streets of Downtown Los Angeles more walkable. Furthermore, I will examine how my recommendations will affect the communities where changes would be implemented.

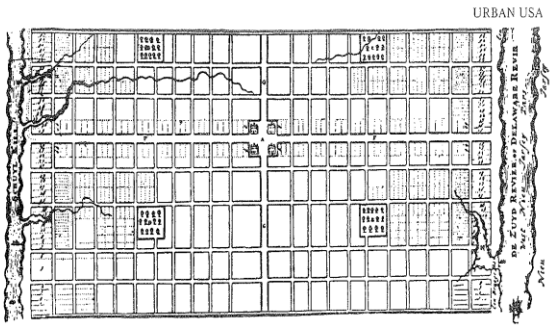
Increasing walkability should be a main focus of urban design and policy because it is the solution to many problems that plague cities across the United States. In addition to the health

benefits associated with increased walking it also serves as a catalyst for commerce, social interaction, and environmental sustainability. For example, when a person living near a local market decides to walk, rather than drive, they are exercising, reducing carbon emissions, and saving gas money. They are also supporting local businesses rather than spending money at stores and gas stations outside of their neighborhood. Despite these apparent benefits, the streets and overall built environment of many American cities have been designed with little attention to the needs of pedestrians. This marginalization is particularly evident in Los Angeles where the automobile has taken priority over walking and other forms of transportation. This has raised a host of problems ranging from increased pollution to injuries and deaths due to car accidents. Fortunately, Downtown Los Angeles is going through a renaissance; in recent decades an influx of investment and efforts to reanimate the public sphere has made it an area ripe for change. There has been shift in focusing on the pedestrian in Downtown, which is the key to developing lively, safe, sustainable and healthy neighborhoods.[3] However, much work needs to be done because there are still many neighborhoods that lack a vibrant and active walking culture. This report serves as a guide to change the car dependent culture of Downtown Los Angeles while enhancing the appeal of walking.

Literature Review: History of Planning and Urban Design

City planning is the practice of building with preconceived intention.[4] From the dawn of permanent, non-nomadic communities, there has been a desire to organize the structure of the built environment. Ancient Greeks and Romans used specific plans and layouts when designing classic cities like Athens and Rome.[5] The influences of these early civilizations can be found in the urban form today. Many of the first American settlements were modeled after European cities. For example, the pictures below depict the similarities between the redesign of London after the Great Fire of 1666 (left)[6], and the plan for Philadelphia in 1683 (right).[7] Both of these





layouts are a demonstration of the dominant urban design in the pre-industrial era. In this compact arrangement cities were densely built with a mix of uses in a concentrated area. These traditional models grew on the basis of everyday activities on foot, and as a result the cities were built to the scale and potential of human beings.[8] Many European cities as well as early American cities are very pedestrian accessible because of this style of planning.

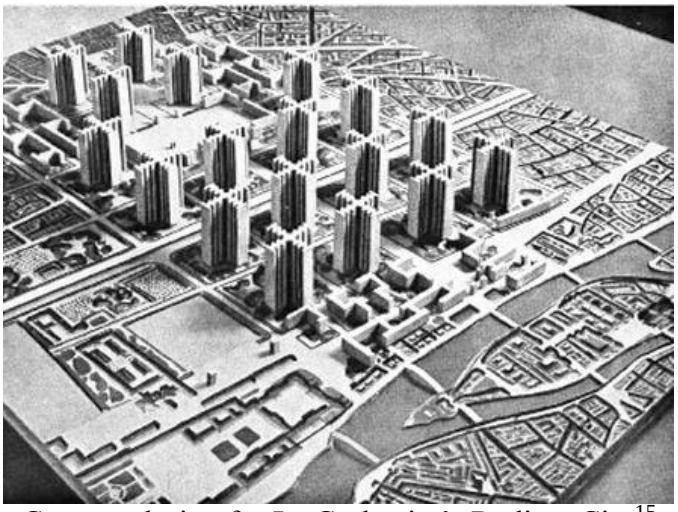
In the post-industrial world new forms of transportation changed the leading thought of urban planning. The advent of urban railways and personal automobiles transformed the way people could navigate the city. New demands from car owners as well lobbying from industries dependent on the car put pressure on urban planners and city officials to make changes to traditional urban form. This new wave of urban planning ideology was built on the ideals of

modernism.

One of the most prominent modern theorists was Ebenezer Howard. He was best known for his book *Garden Cities of To-morrow* published in 1898. Motivated to change the typical overly crowded and polluted industrial city, he envisioned future "*Garden Cities*" where nature and urbanity existed in harmony. City circles, with density limits, would be formed within a belt separating all uses, containing them in single-use zoning sectors (ex. Separating residences from industry).[9] This utopian plan was created with a focus on productivity and efficiency, but without the pedestrian experience in mind. In the *Garden City* model there was a heavy dependence upon the automobile to get from one zoning area to another, consequently walking would not be a viable form of transportation. His ideals would later have a large influence in planning of suburbs that developed rapidly in the post war period. His work was also heavily influential to planners like the Olmstead brothers and Lewis Mumford. These designers elaborated further on Howard's designs emphasizing the need for green spaces without dependence on the automobile. Mumford went on to be one of the strongest critics of auto-centered urban design, known for the famous quote "Forget the damned motor car and build the cities for lovers and friends."[10]

Le Corbusier, another modernist pioneer, envisioned a city of high density skyscrapers spaced out between green space and highways. Although his vision of high-density urban dwellings differed from Howard's low density Garden city, he also supported separating land uses by designing a contrived and regimented built environment.[11] Corbusier's goal was to open up cities and make them more efficient. He championed the car as the dominant form of transportation for the future. The picture below is a plan Corbusier created for the Rue Corridor in Paris. As he soon learned, his utopian ideals did not fit well with the existing urban fabric that had taken centuries to develop.[12] His vision of large spaced out skyscrapers, wide streets, and

mechanistic zoning would have destroyed the complexity of mixed uses and mixed incomes that made the urban fabric of Paris so successful.[13] Fortunately, Corbusier's plan for Paris never came to fruition; however he continued to play a major role in the world of urban planning. The influences of Corbusier on modern city planning and architecture can be seen in the many modern downtowns filled with "generic high-rises surrounded by wildernesses of parking lots."[14] When examining his models it is clear that the city was designed from a birds-eye-view, not taking into account how people experience cities from the ground. Consequently the most viable way to navigate the city would be by car. Traveling by foot from one skyscraper to the next would not be efficient or appealing.



Concept design for Le Corbusier's Radiant City[15]

The ideals of modernism laid the foundation for the rise of the automobile and redevelopment of many downtowns. During the late 1940's the Bureau of Public Roads promoted urban freeways as the only solution to alleviating congestion affecting major urban areas.[16] Planners began developing complex and expansive highway systems to increase the car capacity of cities. They were built rapidly, often without considering how they would affect the surrounding area. Furthermore, the Federal Urban Renewal Program, initiated in 1949, poured billions of dollars of federal subsidies into slum clearance and redevelopment in downtowns.

Many Contractors envisioned Corbusier style "tower in the park" developments free of urban blight.[17] The program which aimed to draw people back into downtowns managed to "evict at least a million persons from old city neighborhoods, tear down more homes than it built, uproot more small businesses from redeveloped areas than were drawn back in, and decrease the flow of tax revenues to city treasuries."[18] The Urban Renewal Program along with the Federal Aid Highway Act of 1956 resulted in many cities altering and destroying their existing urban fabric. Downtowns that were once home to existing communities were transformed into dull and stale urban graveyards. Influential Danish architect Jan Gehl adds, "If a team of planners was asked to radically reduce the life between buildings, they could not find a more effective method than using modernists' planning principles."[19]

The construction of highways also drew people away from cities and into communities far from the urban core. Through the Highway Trust Fund the Federal Government directly subsidized the expansion of urban sprawl across the country. Car companies promoted the suburbanization of the country out of self-interest, as they saw the opportunity of increased profits in car dependent communities. In many cases the government imposed sprawl through zoning codes that only allowed for low-density developments of single-family homes. These communities were completely reliant upon automobiles and were rarely designed to accommodate pedestrians. The great migration of Americans from cities into suburbs also drained downtown areas of revenue and tax dollars. Consequently street life suffered, as many cities were unable to maintain their infrastructure and fund public agencies.

In response to this alarming trend in urban planning social activist and influential author Jane Jacobs released her book *The Death and Life of Great American Cities.* In her seminal text she attacks the principles and aims that shape modern, orthodox city planning made popular by

advocates like Howard and Corbusier. She also voices her disdain for development around the car, analyzing the role it has played in the disembowelment of downtowns and other neighborhoods. Jan Gehl notes that Jacobs was the first strong voice challenging the shift in urban ideology. He adds, "for the first time in the history of man as a settler, cities were no longer being built as conglomerations of city space and buildings, but as individual buildings."[20] Jacobs believed that this philosophy was contrary to a vibrant city life resulting in the lifeless cities devoid of people. To Jacobs, modernist philosophy had a legitimate goal, to make cities more efficient, but failed to capture the needs of the people living of the city.

In her text Jacobs introduces factors that she believes are crucial in making successful neighborhoods. She denounces ideas like the separation of uses popularized by Howard and Corbusier, rather focusing on the advantages that a mix of uses brings to a city. In her book she writes "the district, and indeed as many of its internal parts as possible, must serve more than one primary function".[21] By doing so, she believes there would be a continual use of the area by people throughout the day. By offering a range of activities in a dense urban area you will draw people, who in turn will attract more people, adding "eyes on the street" making spaces more safe and lively. She emphasizes that a large presence of pedestrians is beneficial to the social, economic, and environmental well-being of the city. Most importantly Jacobs highlights the significance of the small intricacies that make neighborhoods successful in a time when planners were focused on creating grand schemes from the top down.

Planning in Los Angeles

Los Angeles stands as an example of a city that has suffered from poor urban planning practices implemented in the post war period. Christopher Hawthorne, the current architecture critic for the Los Angeles Times, believes that Los Angeles is moving away from this post war identity and has been reinventing itself in the twenty-first century. In his lecture series titled "The Third Los Angeles Project" Hawthorne introduces the idea that Los Angeles' history has gone through two distinct phases, and is now entering its third. With this project he is providing a timeline for Los Angeles and hopes to "spark conversations and get citizens behind a vision for a city that he argues is moving into a dramatically new phase."[22] To understand this new period he emphasizes the importance of revisiting the past challenges and successes that played a role in shaping modern Los Angeles.

According to Hawthorne the first phase in Los Angeles history spanned from the first population boom in the 1880's until the dawn of World War II. In the early years of the twentieth century, Los Angeles was similar to any typical city, concentrated around its downtown area. Hawthorne adds, "The city grew at an exponential pace, but it had a dense, compact and walkable downtown".[23] Within Downtown, residents were able to complete all tasks necessary for everyday life, by foot or public transit. The region offered an array of transportation options, and was most well known for its world-class rail system that serviced the almost 600,000 inhabitants of the city.[24] The urban core boasted a thriving street culture characterized by bustling sidewalks of people walking along the boulevards. The picture below depicts the large presence of pedestrian activity at the intersection Broadway and 6th Street. At the time Los Angeles appeared to be on path to become a large metropolis much like its counterparts on the East Coast.

Broadway & 6th Street 1920s[25]

The early making of Hawthorne's proclaimed second phase in Los Angeles history began as early as the 1919. During this time major problems arose with the proliferation of the personal automobile. The rail systems, the leading form of transportation for Angelenos, were experiencing serious delays up forty-five minutes due to congestion primarily caused by cars.[26] A coinciding decision by rail companies to invest more into freight rather than passenger transportation further compounded the problem. As a result Downtown businesses faced a steady decline in commerce. To address this issue a planning commission was formed with the support of commercial and retail interests. The solution decided upon was a parking ban on automobiles in Downtown during business hours. The effects of this ban were instantaneous as trains began arriving on time the very next day for the first time in years. Unfortunately, only two days later a massive protest against the parking ban was successful in rescinding the order. In the coming years most businesses relocated to areas less affected by congestion, leading to a decentralization

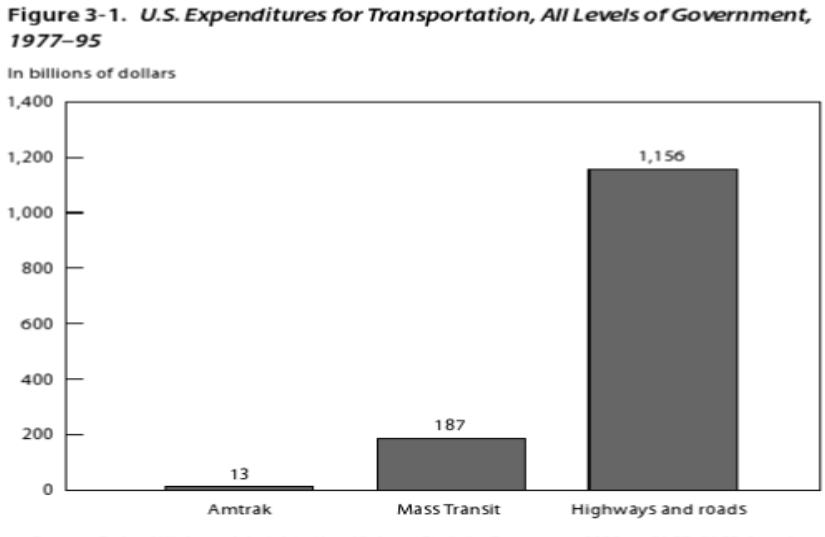
of Downtown. The passenger rail systems, unable to overcome problems associated with the delays, went into major decline.

Final efforts to revive the rail lines came with the proposal of elevated railways. In 1926 the city's three largest steam rail companies (the Southern Pacific, the Santa Fe, and the Union Pacific) proposed to combine their stations and link them by a system elevated railways that would remove their locomotives from the street level. To making the deal even more attractive the three companies also offered to open up the new infrastructure for the Pacific Electric railway, giving the city a modern and world-class rail system with no expense to the public.[27] The rail companies believed this plan would relieve congestion while ensuring that trains arrived on time. The proposal was brought to a public vote but met with intense opposition. The city's Planning Commission desired to keep Los Angeles as a low-density suburban style metropolis, pointing out the ills of overly dense cities in the East that were victim to "traffic, blight, disease, crime, and poverty."[28] They believed that if the city expanded its rail system it would artificially inflate population density. The Los Angeles Times echoed this resentment towards increased density and ran a powerful campaign aimed at swaying public opinion. Below is one of the hundreds of images published by The Times attacking elevated railways in Downtown.[29] When the polls closed the proposal fell short in a polarizing vote (38.7% in favor to 61.1% opposed).[30] The outcome of this decision set Los Angeles on course to become a car-dominated metropolis in which transit and walking was an afterthought.

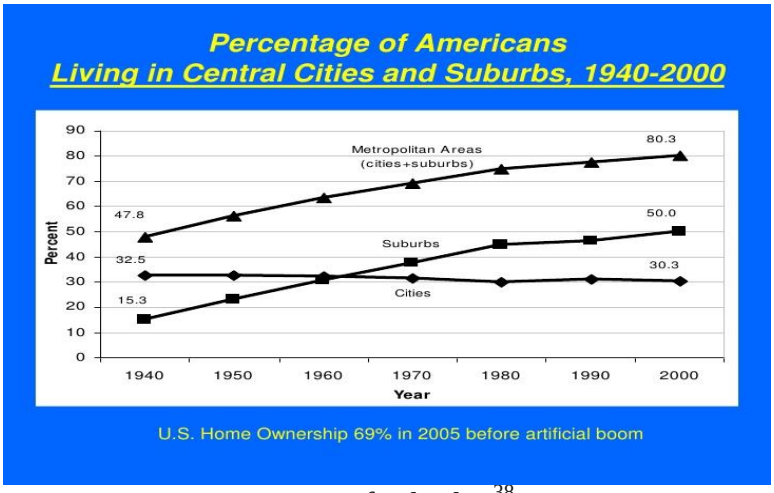
Los Angeles Times propaganda attacking elevated transit[31]

"The second Los Angeles" primarily spanned from 1940 to the turn of the millennium. This period is characterized by the large-scale effort of Los Angeles planners to build upon decisions made in the 1920's and 1930's that favored the automobile over mass transit. Hawthorne adds, "We pursued a hugely ambitious experiment in building suburbia –- a privatized, car-dominated landscape –- at a metropolitan scale."[32] Los Angeles was following, to a much greater extent, the national movement to expand our country's highway infrastructure. Subsidies from the Federal Highway Act of 1956 funded extensive projects that contributed to the seemingly endless sprawl of the city. Below is a graph of government spending on transportation infrastructure between 1977 and 1995. The chart shows that funding for highways and roads received more than six times the amount of money that was spent on public transit during this period. Public ideology followed the trend in suburban expansion, as "Living in suburbs was seen as a step up over city living, playing into the American dream of owning a house and car."[33] The second graph below depicts the growing migration of Americans from cities into the suburbs from 1940 to 2000. These goals represented the desire of having private

spaces along with the freedom that cars promised. In reference to this shift Hawthorne adds, "our public realm shriveled as we built freeways and tore out streetcar lines."[34] The automobile was now the dominant force influencing the way planners shaped the city. Hawthorne highlights the mismanagement of urban planning in the city, noting that we have allowed "traffic engineers to reshape our boulevards to make them as much like freeways as possible: adding lanes, raising speed limits and otherwise giving motorists priority over everyone else."[35] Calvin Hamilton, Director of Urban Planning in Los Angeles 1964-1985, even considered removing pedestrians from the streets of Downtown. He heavily supported the construction of pedways, which are elevated walkways between buildings that removed pedestrians from the street level. He explained, "This nearly complete separation of vehicles, transit, and pedestrians, will enhance the convenience, safety, and pleasantness of the core."[36] Although his plans for building an expansive network of pedways never came to fruition (some were constructed), the implication was significant; it represented the belief of the City's planning leadership that streets were for cars and not for people.



Disparity in spending[37]



Rise of suburbia[38]

Over the course of the "second Los Angeles" planning leaders of the city made it their goal to deviate from the traditional city model found in the east. However, a single vision for Los Angeles was never reached. In his book *Inventing Autotopia* Urban Historian Jeremiah Axelrod notes "many groups attempted to implement so many divergent visions and dreams in Los Angeles [testifying] to the practical impossibility of any single group being able to monopolize the right to comprehend and plan the metropolis".[39] The resulting urban form is confusing, impractical, and detrimental to city life. As one congressman in the 1950's commented, Los Angeles was "not a city at all, but a highway parking lot, bordered by a few buildings.[40] Elements from modernist theorists like Corbusier and Howard can be found in the decentralized and segregated city landscape. The inescapable jungle of highways stretched throughout the city allowed vehicles to effectively travel from the suburbs into Downtown removing the necessity for a centralized and dense urban core. Axelrod notes the difference from the first phase as he adds, "Los Angeles had been transformed from a small, if ambitiously spread out, city physically structured by and built around an electric rail system [and downtown] as was the norm, to an increasingly decentralized metropolis committed unequivocally to the automobile."[41] Now that

walking and mass transit were no longer a necessity it seemed that the majority of the public as well as those responsible for shaping the city had forgotten their importance.

It was at the tail end of the second phase, in 1990, that Mike Davis released his book *City of Quartz,* a harsh criticism of Los Angeles likening the city to a failed utopia. The book is widely regarded as one of the most important literature pieces written about Los Angeles in the twentieth century. It provides a sharp contrast to the boosterism attitude of Reyner Banham's 1971 book *Los Angeles: The Architecture of Four Ecologies.* Throughout his text Banham, a well-known English architectural critic, praises the freedom he experiences from Los Angeles car culture, remarking that driving was the best way to read the city. Davis takes on a more sinister view of Los Angeles equating it to a "fortress city" that was built to keep people out. He comments on the growing privatization of the city adding, "The universal and ineluctable consequence of this crusade to secure the city is the destruction of accessible public space."[42]. Many have criticized Davis's work for being overly critical, but most agree that there is truth to most of his arguments. In the post war period planners and developers succeeded in damaging the public realm and consequently, the walking culture. The most successful pedestrian enclaves in the city, like malls and outdoor shopping centers, are in fact not public, but privately owned non-organic developments. Hawthorne adds "People drive their cars to these places to find protected places to walk."[43]

While the movement to reinvent Los Angeles is arguably underway, the city still retains many characteristics of its "second phase". The perception of Los Angeles as a massive, sprawling urban metropolis serviced by an overabundance of freeways and overly wide streets is still an accurate depiction. The city has garnered a reputation for gridlock traffic, poor air quality, and lack of pedestrian culture. It is not uncommon to come across streets that lack the presence

of a single pedestrian, while cars can be found in abundance. Public transit, while improving is vastly underdeveloped for a city of Los Angeles' magnitude. The desire of Angelenos to support the automobile and the city's history of incentivizing driving has in many ways made it the only viable source of transportation for a large number of people in the city. The dominance of the automobile and its amenities (streets, parking lots, highways) has put a low priority on public space, and the role public space plays in the pedestrian experience.[44] The criticisms of poor design decisions made by Jane Jacobs in the 1960's hold true today, especially in Los Angeles. It is imperative, in our city with its high levels of obesity, pollution, and congestion, that we encourage more walking.

Fortunately, the landscape in Los Angeles is rapidly changing. Hawthorne argues that the city is moving away from ideals of the 'second phase', "trying, and often struggling, to define a post-suburban identity".[45] Large-scale efforts to make the city more accessible and inviting to people, not only cars, have changed the way we can interact with the built environment. Los Angeles walking advocate and journalist, Alissa Walker adds "Today, the city is moving to reanimate its public sphere, returning to the 'First Los Angeles' concepts of rapid transit, denser development, and shared space", while also dealing with the friction that occurs with "the transition of Los Angeles from a private place to public place."[46]

The passage of Measure R, a half-cent sales tax for Los Angeles County projected to raise $40 billion over 30 years to finance new transportation projects and programs, is testament to the commitment of the public in supporting progressive urban planning practices. In 2008, sitting Governor of California Arnold Schwarzenegger signed a bill mandating the incorporation of Complete Street policies into city's general plans. Complete Street policies ensure that roads are accessible for all users (drivers, transit users, pedestrians, and bicyclists). The Department of

Transportation in cooperation with the Department of City Planning is in the process of updating the current transportation plan. Their future plan, called Mobility plan for 2035, has a cohesive and comprehensive strategy for implementing complete street policies in Los Angeles. For the first time the city has added two full time pedestrian coordinators who have worked to make the city more walkable. They have supported and helped organize events such as CicLavia, which have allowed residents to reimagine the way they can use streets. In Downtown Los Angeles, City officials collaborated with private interests to launch a 10-year plan to revitalize the Broadway Corridor. The effort aptly named 'Bringing Back Broadway' focuses on walkability improvements to make the area attractive to pedestrian activity. Efforts like these taking place across the city demonstrate that Los Angeles is working to make its environment more accessible and appealing to people.

The ideas of Jacobs and intellectuals who share in her beliefs have sparked a new wave of planning ideology called 'new urbanism', focused on building cities for people. More recently, city planner and new urbanist Jeff Speck wrote the book *Walkable: City How Downtown Can Save America One Step At a Time*, advocating for the need to create a balance between different forms of transportation. In his work Speck discusses the mistakes most American cities have made, highlighting our obsession with the automobile, resulting in "a public realm that is unsafe, uncomfortable, and just plain boring."[47] He believes that a focus on walking is the answer to fixing many of the problems that plague urban centers across the United States. He notes that downtowns are the most important areas of cities serving as the core region for social, economic, and political activity. For this reason he believes that downtowns are the primary area that should be focused upon when making change to the culture of a city.

Speck's solution comes in the form of a set of rules he calls the 'Ten Steps of Walkability' that I will list and explain later. The focus of these steps is to make streets useful, safe, comfortable, and interesting. If these guidelines are implemented, using the correct context and budget, he believes cities can have a "positive impact on everything from public health (and not just obesity), quality of life, sustainability, and even inward investment".[48] Speck's ten steps were chosen because he offers a comprehensive, and more importantly realistic plan for making any downtown more walkable. His criteria for making cities more walkable incorporates an array of factors including design, policy, culture, safety, among others that distinguishes it from other measures.

Methodology

The methods for this paper include interviews, surveys, primary and secondary source analysis, and direct observation. My research focuses on getting a better understanding of the walking culture in Downtown Los Angeles and how it can be improved by applying Jeff Speck's ten steps of walkability.

I conducted formal and informal interviews with many different categories of people for my research including community residents, business owners, writers, walking advocates, architects, and city planners. Input from a wide range of community members gave me a diversity of information on what areas need to be addressed to create more walkable streets.

I have distributed surveys to residents, workers, and visitors of Downtown. The survey assesses if the individuals' walking experience is safe, useful, comfortable, and interesting. The data from these surveys helped me identify which changes will be most beneficial to the pedestrian environment.

I also analyzed primary source documents such as The Mobility Plan for 2035 and Los Angeles Department of Transportation's Strategic Plan. These policy documents gave me valuable information on future plans for improving pedestrian infrastructure in Los Angeles. In addition, I evaluated secondary sources such as Jeff Speck's *Walkable City: How Downtown Can Save America, One Step At A Time.* This book served as the basis of my research and the foundation for making recommendations to improve Downtown's walkability.

Furthermore, I experienced the pedestrian culture firsthand by walking the streets of Downtown. On many occasions I took the Gold Line Metro from Highland Park to Downtown. I strolled the streets and documented my experiences by taking pictures and writing down my impressions. When walking Downtown I focused on what could be improved in neighborhoods to encourage more pedestrian activity. I tried to imagine my self in different roles such a resident, employee, or visitor to visualize which changes would most benefit these different lifestyles. Additionally, I participated in two walking tours that provided me with an abundance of knowledge on the history and future of the Downtown area.

All of these different approaches gave me a comprehensive understanding of the pedestrian culture in Downtown. The information and insight from my methods contributed to my twelve steps of walkability for Downtown and street redesign guide that can be applied to streets throughout the Central City.

Defining a Criteria for Walkability

Assessing walkability is a subjective process that will vary on an individual basis, as each person may have a different idea of what constitutes a walkable space. For the purpose of my project I have selected Jeff Speck's 'Ten Steps of Walkability' to guide my research. I believe Speck's criteria is the most comprehensive measure, encompassing a wide range of factors, that appeals to a majority of people's assessments of walkability. Below I will describe Walk Score, another measure of walkability, and outline why I have chosen to use Speck's criteria over this popular website.

Walk Score is one of the most popular indexes for ranking the walkability of streets, neighborhoods, and cities. According to the Walk Score website the methodology for their rankings is based on a program that analyzes hundreds of walking routes to nearby amenities. Walk Score also measures pedestrian friendliness by analyzing population density and road metrics such as block length and intersection density. Data sources include Google, Education.com, Open Street Map, the U.S. Census, Localeze, and places added by the Walk Score user community.[49] An algorithm has been created to award points based on the distance to amenities in each category. Amenities within a 5-minute walk (.25 miles) are given maximum points. Amenities that are located at further distances are awarded fewer points, with zero points given after a 30-minute walk.[50] Chart A equates their numerical rankings to a description of the pedestrian environment.

CHART A[51]

Walk Score®	Description
90–100	**Walker's Paradise** Daily errands do not require a car.
70–89	**Very Walkable** Most errands can be accomplished on foot.
50–69	**Somewhat Walkable** Some errands can be accomplished on foot.
25–49	**Car-Dependent** Most errands require a car.
0–24	**Car-Dependent** Almost all errands require a car.

While Walk Score can be a useful tool, it has limitations. It is based solely on quantitative criterion that has yet to capture factors such as city design, topography, weather, and safety. Tony Garcia writer for the Transit Miami blog, elaborates on the limitations of Walk Score; "Walk Score researchers use a computer algorithm to correlate population density to 'neighborhood amenities'. Unfortunately, this metric has nothing to do with the factors that actually make a city walkable, such as street design, pedestrian safety, transit, etc."[52] Furthermore, the computer does not measure accessibility to the amenities that it tracks. It must be noted that Walk Score recognizes problems with the application and plans to improve the system over time. At this point Walk Score is helpful for providing a general idea of the walking environment of a city but not effective in relaying the actual walking experience.

Speck's ten steps are more effective for my research because they serve as a criteria as well as a strategy for changing cities to meet these standards. Speck's conditions for walkability come in the form of ten steps. His parameters are more in depth and encompassing than Walk Score. He uses data from studies, original research, as well as his own experiences from his role

as a well-established city designer and planner. Elements of the tens steps are listed below and the most effective from each step, based on my analysis, are highlighted.

Ten Steps of Walkability

Put Cars in Their Place

"The car has reshaped our landscape and lifestyle around its needs."[53] As a result, the needs of other forms of transportation, specifically walking, have been overlooked. In his first step Speck introduces a number of effective solutions to reduce the disproportionately large role that cars play in the urban setting. First is eliminating the induced demand of cars. Induced demand is a term he uses to describe what happens when "increasing the supply of roadways lowers the time cost of driving, causing more people to drive…"[54] When traffic engineers suggest adding lanes as a way of reducing congestion they are in fact adding to the problem. A 1998 study by the Surface Transportation Policy Project found that metro areas that invested heavily in road capacity expansion fared no better in easing congestion than metro areas that did not, and in fact ended up with higher rates of congestion.[55] Speck explains that traffic engineers, a majority of whom do not understand induced demand, have been designing streets with one goal in mind -- which is increasing traffic flow by widening streets and erecting new roadways. In many cities traffic engineers are destroying streets, widening lanes, removing trees, and reaming out downtowns to increase level of service. Speck's most effective solution is two-fold, strong political leadership and reeducating traffic engineers. Strong political leadership that is willing to stand up to DOT and not allow traffic engineers to design cities is crucial. Without strong mayoral leadership most street design occurs "below the mayor's radar. In the absence of

any design leadership from above, the city engineer, simply by doing his job, [is] redesigning the city—badly."[56] Likewise, a paradigm shift is needed for traffic engineers, who are taught to design streets with inadequate information. One "enlightened" traffic engineer Charles Marohn has written "taking highway standards and applying them to urban and suburban streets, and even country roads, costs us thousands of lives every year … yet we do it continually. Why? … because that is the standard."[57] For safety reasons alone, it is imperative that we change the standards with which traffic engineers design streets. By requiring road engineers to incorporate Complete Street policies into their design standards we can ensure that streets accommodate all users.

Another suggestion I found interesting was in regards to pedestrian-only zones. Speck recommends against the costly construction of pedestrian only zones for most downtowns, unless the city has a high population density. The feasibility of a permanent pedestrian-only zone can be tested by using temporary low cost materials such as bollards and cones. Speck writes "try it on a weekend and, if it works, expand the days."

One last strategy that Specks introduces to reduce car usage is congestion pricing. The idea of charging a fee to motorists for entering areas, like downtowns, that are affected most by congestion has been employed successfully in many cities around the world. By forcing drivers to pay something closer to the real price of driving, as the U.S. heavily subsidizes our consumption of gas, many people choose to use other forms of transportation and congestion drops. As an added bonus revenues generated from congestion pricing can be used towards developing infrastructure for other forms of transportation.

Mix the Uses

Just as Jane Jacobs suggested half a century earlier, Speck stresses the importance of having a mix of uses. Most downtowns offer a range of activities but share the common problem of having a shortage of housing. Data from the Census Bureau confirmed that in 2011, for the first time since the 1920's, populations in U.S. cities grew faster than suburbs.[58] To address the housing shortage Speck borrows a strategy from Adam Baacke, the assistant city planner in Lowell, Massachusetts. According to Baacke developing more housing downtown is a three-step process simplified as politics, permitting, and pathfinding.[59] Politics refers to changing the views of a City Council to encourage the approval of housing development and permitting changes to the zoning code to allow for mixed-use development. Permitting refers to acquiring special permits to build residential units in areas that have strict zoning codes that have discouraged or prohibited housing development. For example, developers in Lowell were able to bypass minimum parking requirements by obtaining special permits, avoiding the additional costs to development caused by parking construction or leasing. Parking requirements also result in increased purchasing or renting costs as developers try to recoup investments put into parking. Pathfinding refers to establishing a working relationship between city staff and developers to ensure that developments receive every possible federal and state subsidy.

Housing should also appeal to a normal distribution of incomes attracting a diversity of people who use the street at different times of the day. To mitigate gentrification in emerging or reemerging downtown areas, inclusionary zoning ordinances (requiring a set percentage of all new housing developments to meet affordability criteria) should be set in place. Speck concludes by reiterating the importance of having a mix of activities available to the public. By promoting

"parks, playgrounds, supermarkets and farmers markets, cafes and restaurants and eventually good schools" a city can attract more people to live downtown.

Get the Parking Right

"Parking covers more acres of urban America than any other one thing."[60] The U.S. has an overabundance of parking partly because the government heavily subsidizes parking, which is very costly to create and maintain. Another reason is because in many cases providing parking is a matter of law; most cities in the U.S. have zoning codes that require on-site parking minimums regardless of location context. For example, developments may require a high minimum of parking per square foot regardless of the building's proximity to housing density or transit stations. In 2010 a nationwide count determined that there are half a billion empty parking spaces in America at any given time.[61] In addition to wasting valuable urban space, parking prevents redevelopment from taking place. Developers and business owners that want to renovate or expand a building have to create more parking, which in many cases is not possible on limited lot sizes. The construction of off-site surface parking or parking structures can also add up to millions of dollars in expenses. The result, according to Speck "is that nothing gets done and old buildings stay empty."[62] Parking lots and empty buildings create dead spots that deter pedestrian activity. Jane Jacobs adds, "The more a downtown gets broken up and interspersed with parking lots, the duller and deader it becomes."[63] Furthermore, parking increases the price of housing by forcing developers to relay the cost to potential buyers or renters. A study in Oakland found that requiring one parking space per home "increased housing costs by 18 percent and reduced density by 30 percent."[64]

To address this problem Speck introduces a range of ideas that have been implemented in cities across the world. One strategy is a concept called "parking cash-out", a law in California that requires certain businesses that offer free employee parking to give their workers the option of trading that parking space for its cash equivalent. This approach allows demand to determine how much parking a business is required to provide, and in many cases has proven to be effective in reducing the amount of parking a business has to offer.

Speck also cites Donald Shoup, arguably the leading parking analyst in the country, referencing a few solutions that he has proposed. In his text *The High Cost of Free Parking,* Shoup advocates for the elimination of off street parking requirements entirely. Shoup believes that "removing off street parking requirements will not eliminate off street parking, but will instead stimulate an active commercial market for it."[65] Speck also stresses the importance of appropriately priced on-street parking that is comparable to off-street parking. By offering cheap on-street parking, as most cities do, we increase congestion and pollution because people will spend enormous amounts of time looking for cheaper parking. Speck cites a study "of six different urban sites [which] found that roughly a third of all traffic congestion was made up of people trying to find a parking spot."[66] To further compound this problem, drivers searching for parking spaces are often distracted and pose a higher risk to pedestrians attempting to cross the street. When on-street parking is priced correctly there is a higher turnover of cars resulting in higher availability of parking as well as increased revenue for the city. Shoup also suggests that cities create "parking benefit districts" particularly in commercial areas where there is a high demand for parking. Parking benefit districts are created when meters are installed on a street and a portion of the revenues collected are reinvested back into the neighborhood. Shoup notes that if the area contains housing residents should be provided with discounted parking permits

while non-residents would be paying the market rate for parking. Revenues collected from this policy can work towards improvements that promote walking "… such as sidewalk and street repair, street tree planting and trimming, street cleaning, street lighting, graffiti removal, historic preservation, or putting overhead utility wires underground."[67]

Let Transit Work

In this step Speck discusses the mutually beneficial relationship between walkability and good transit. He comments, "With rare exceptions, every transit trip begins and ends with a walk. As a result, while walkability benefits from good transit, good transit relies absolutely on walkability."[68] Unsurprisingly, in most American cities, walking infrastructure has received far less funding than automobile amenities, resulting in poor transit ridership. In a national poll administered by Transportation for America the average respondent said that they would allocate 41 percent of transportation funding for public transit versus 37 percent for roads.[69] Despite public opinion that indicates a desire for increased funding of public transit, Speck points out that in reality we fund roads four times as much as public transit. The disparity between public opinion and actual policy is the reason why all cities should give voters the opportunity to decide if they want to tax themselves to improve public transit.

Location is one of the most important factors in determining whether a public transit stop will be successful. According to Speck public transit is entirely dependent on local density and neighborhood structure (neighborhoods defined as being compact, diverse, and walkable). Transit needs good walkability on either end of the line to attract a sufficient number of users. Cities need to make public transit an attractive option by increasing the cost of driving (i.e. congestion pricing, increased parking fees, etc). Speck also talks about the importance of a

smaller system of transportation that can make cities more walkable. These systems consist of trolleys, streetcars, or trams that can make walking a more attractive and efficient option by linking areas that are walkable. It is crucial that they connect to a larger transportation network which will make them much more useful. To be considered as a superior experience to driving, Speck lists four criteria that need to be met: urbanity, clarity, frequency, and pleasure. Urbanity means locating significant transit stops in areas with heavy pedestrian activity. Clarity refers to creating transit routes that are easy to understand and efficient. Frequency implies service at 10-minute intervals at most. Pleasure means creating a pleasant experience while taking public transit (cleanliness, big windows, comfortable seating, air-conditioning, wifi, etc).

Protect the Pedestrian

In this step Speck introduces various methods that cities can implement to make roadways safer for pedestrians. The first issue he addresses is the unsafe environments created by multilane systems. These systems, often four lanes or more across, are difficult to cross for pedestrians and make it easier for cars to move quickly. The solution, which has been implemented in many cities, is a method called a road diet. Speck explains in a typical road diet "a standard four-lane street is replaced by a three-lane street: one lane in each direction and a center lane reserved for left turns."[70] Road diet conversions have many benefits including lowering traffic speeds, reducing congestion, and freeing up space for other street improvements, including bicycle lanes, wider sidewalks, trees, etc. Another design issue found in most American downtowns are "unnecessary and overlong left hand turn lanes that eliminate parking, broaden streets, speed up traffic, and otherwise detract from the pedestrian experience."[71] The key to solving this issue is shortening left hand turns lanes, ideally with the capacity to hold three