

Making Pedestrian Malls Work

Key Elements of Successful Pedestrian Malls in the US and Europe

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ABSTRACT

Pedestrian malls are car-free zones within cities where street space is reserved for pedestrian use. These areas generally include a range of retail, residential, and office activity and a mix of land use patterns. Pedestrian malls are common in European cities, but they are rarely found in the United States. While many US cities installed approximately 200 pedestrian malls at the end of the 20th century, only about 15 remain in use today.

Successful pedestrian malls are characterized by significant pedestrian activity. Since one of the primary objectives of urban design and the current movement toward sustainable urbanism is to reduce auto dependence and increase pedestrian activity, pedestrian malls deserve renewed attention. With proper design and implementation, new pedestrian zones can enhance the quality of life, livability, and sustainability of cities.

For pedestrian malls to be successful, many elements relating to economic development, planning, marketing, and design need to come together. To get a full understanding of elements contributing to thriving pedestrian malls, this project evaluates factors that lead to successful pedestrian malls in the US and Europe. This evaluation consists of a review of existing literature, in-depth case studies of four pedestrian malls, and the qualitative and quantitative analyses of data gathered through site visits, interviews, and field observations.

Findings from this study were used to create a framework that categorizes the most important elements of pedestrian mall success into four key areas: accessibility, use, design, and comfort. These areas were selected based on observations and responses of pedestrian mall patrons as well as city planners and business association members responsible for managing pedestrian malls. A review of responses revealed a number of significant differences in priorities between these two groups regarding what is needed to draw people to a pedestrian area and to ultimately make it successful. To help address these differences, this study concludes with a number of recommendations for urban designers, urban planners, policymakers, and others involved with creating and maintaining pedestrian areas. Specific suggestions are provided regarding how to design, develop, and maintain pedestrian areas built on these elements of success.

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INTRODUCTION

As automobile ownership rapidly increased in the US and Europe after WWII and as city streets became increasingly clogged with automobile traffic, a movement to reclaim public space for people started to take hold. This movement advocated closing streets to automobiles and creating streets for pedestrians. In 1953, the first purpose-built pedestrian-only street was developed in the Netherlands. As pedestrian-only streets quickly spread through Europe, cities in the US struggling with depopulation and disinvestment caused by suburbanization started to take note. The first pedestrian-only street in the US was built in Kalamazoo, Michigan, in 1959. During the 1960s and 1970s, pedestrian-only streets were developed across the US, culminating in about 200 pedestrian-only streets by the end of the 1970s. These streets were primarily designed as shopping areas, especially in the US where they are commonly referred to as pedestrian “malls.”¹ In the following decades, however, many of these streets began to lose popularity, particularly across the US.

By the turn of the 21st century, pedestrian malls were enormously successful through Europe, but the overwhelming majority of pedestrian malls in the US had been reopened to automobiles. The pedestrian mall idea was largely seen as a failed experiment that simply could not work in America’s automobile-dominated culture. Nevertheless, the small fraction of pedestrian malls that remained operational in the US made significant adjustments – adding a mix of uses including restaurants, residential properties, and entertainment venues – that appealed to people and helped ensure long-term success.²

Today, pedestrian malls should be reconsidered in the US for a number of reasons. Perhaps, most importantly, people born between 1977 and 1994 – the so-called “millennials” – want to live in compact, walkable communities that offer easy access to services and are thus moving back into cities (Doherty & Leinberger, 2010). City planners have also started to notice these demographic trends and those that have created highly walkable, mixed-use downtowns complete with amenities that millennials desire have been attracting more young people and are benefitting greatly as a result (Florida, 2012; Benfield, 2013). However, city planners have also realized they need to provide amenities that will remain attractive as people age and have children. If cities don’t become more family-friendly, they will lose people to the suburbs (Williams, 2013).

Demographic shifts in conjunction with economic and technological changes in the US have also resulted in a significant decline in driving, particularly among young people. A 2012 study by the Frontier Group and the U.S. PIRG Education Fund found that young people are driving 23% less than they did in 2001 (Baxandall, Davis, & Dutzik, 2012). Further, as more people have been moving into the city, walking more and driving less, a number of associated benefits have been noticed, including an uptick in the growth of inner-city retail (Loeb, 2012).

As cities become more walkable and pedestrian-friendly, they experience increased inner-city retail activity due to larger numbers of pedestrians and bicyclists replacing automobile drivers (NYCDOT, 2012). Additionally, when people live in cities with more access to parks, public transport, shops, and services, they tend to walk more and receive direct health benefits as a result (University of Melbourne, 2013). Finally, with decreasing auto dependence the detrimental effects of cars in cities becomes more apparent. For example, a recent study conducted by the University of Connecticut found increased auto access and accommodation in cities leads to decreased residential density and vibrancy (Garrick & McCahill, 2013).

Despite demographic changes and evidence showing the benefits of pedestrianizing urban space, as more evidence is gathered from successful pedestrian malls many concerns have been addressed, including worries about worsening traffic problems in other parts of the city (Madruga, 2013). Some city planners have also seen the successes of the existing pedestrian malls in the US and wondered about how and why they are doing so well (Baker, 2010).

Another reason pedestrian malls are being reconsidered relates to growing concerns among scientists, government officials, and the public over climate change and environmental pollution and how cars contribute to emissions of CO₂ and other harmful pollutants (Federal Advisory Committee, 2013).

For all of these reasons, there have been some recent and significant movements to return streets to pedestrians around the world. In the US, the City of New York pedestrianized five blocks of Broadway in Times Square in 2009. The pilot project was so successful that the change became permanent and the design was upgraded (**FIGURE 1**) (Times Square Alliance, n.d.).



FIGURE 1: Times Square pedestrian area, New York City, New York
(Source: <http://historiasdenuevayork.files.wordpress.com>)

Due to the success of the initial Broadway pedestrianization, renowned urbanist Jeff Speck recently called for pedestrianizing a large section of Broadway from 17th Street to 108th Street (Speck, 2013). There are several other recent efforts in other places around the world. For example, in 2010, Mexico City pedestrianized large portions of its historic downtown and there are plans to continue pedestrianization efforts there (Kazis, 2012). Another major pedestrianization effort began in Ljubljana, Slovenia, in 2007, when they closed their historic downtown to cars and have continued to create pedestrian areas ever since (City of Ljubljana, n.d.). Finally, the City of Vancouver, British Columbia,

temporarily closed a one-block section of Robsen Street in its downtown during the 2010 Winter Olympic Games and has since been working on permanently pedestrianizing the space (City of Vancouver, 2013).

The present study seeks to provide further insight into what makes pedestrian malls successful as more cities consider adding these amenities to their downtowns. To do so, it looks at four prominent case study sites – Copenhagen, Denmark; Munich, Germany; Charlottesville, Virginia; and Boulder, Colorado – to help determine what factors are responsible for their success. These cities’ pedestrian malls were chosen because of their extensive history and experience with pedestrian zones, their proven track record of success (consistently high commercial rental rates, high pedestrian counts, and low vacancy rates), their frequent mentions in classic and contemporary literature, and their reputations for a strong commitment to livability (as demonstrated through consistently high livability rankings by organizations such as Mercer and *Monocle*).

This study relies on a combination of qualitative and quantitative methods and includes an extensive literature review, interviews, observations, site visits, mapping, and visual and data analysis, to evaluate the various physical, social, and economic factors of success. It begins with an overview of pedestrian malls; it includes their definition, history, and a look at their failures. It then provides an in-depth look at elements of successful public spaces described in classic and contemporary literature. Next, this study presents findings from interviews, observations, and site visits conducted in each city. A discussion of implications follows. Finally, this study concludes with a series of specific recommendations for designers and policy makers.

BACKGROUND

OVERVIEW OF PEDESTRIAN MALLS

Definition

Pedestrian malls, or pedestrianized streets or zones as they are known in Europe, are streets that are almost exclusively closed to vehicular traffic and are primarily reserved for pedestrian use. The only automotive vehicles generally permitted to enter pedestrian mall areas are for delivery, waste removal, and emergencies (Zegeer, 1997). In some cases, other automotive vehicular traffic is permitted to enter pedestrian mall areas at specific times. In addition, there are some pedestrian malls, particularly in Europe and some larger cities in the US, that include mass transit, such as buses or street cars. These types of pedestrian malls are often referred to as transit malls (Robertson, 1993).

There are four primary types of pedestrian malls: 1) **Modified Street** – One block of a conventional street is closed to vehicular traffic and reserved for exclusive pedestrian use; 2) **Plaza or Interrupted Mall** – Several blocks of a retail street are exclusively reserved for pedestrian use and cross streets remain open to vehicular traffic; 3) **Continuous or Exclusive Mall** – A multi-block area, including cross streets - is exclusively reserved for pedestrians, with the exception of emergency, maintenance, and delivery vehicles; and 4) **Displaced Sidewalk Grid** – A pedestrian walkway is developed through alleys and laneways, arcades, and/or lobbies within buildings (Zegeer, 1997). The pedestrian mall types of primary focus in this study are plaza or interrupted malls and continuous or exclusive malls.

History

The movement to develop pedestrian malls began in the early 20th century in Western Europe as automobile ownership rates started to rapidly increase. In 1926, the first reported instance of a street being turned into a car-free zone occurred in Essen, Germany (Cheyne, 2010). In 1953, the first intentional car-free shopping street in the world, known as the Lijnbaan (**FIGURE 2**), was built in Rotterdam, the Netherlands (Rotterdam Tourism & Convention Board, n.d.). After some initial successes, pedestrianization spread throughout Europe in the 1970s, including countries like West Germany, Sweden, the Netherlands, the United Kingdom, Switzerland, France, and Denmark (Pojani, 2005). Pedestrian malls were created in Europe to improve mobility in city centers, control traffic and pollution, preserve historic architecture, beautify city centers, create more social public spaces, attract shoppers from surrounding areas, and decrease the shift of business from downtowns to suburban areas and competing cities (Pojani, 2005).



FIGURE 2: Lijnbaan, Rotterdam, Netherlands, 1959
(Source: joostdevree.nl)

Not long after pedestrian malls were developed in Europe, they also began to appear in the US. In 1956, the first blueprint for a pedestrian mall in the US was created for Fort Worth, Texas, by the architectural firm Victor Gruen Associates, who ironically were also well-known designers of many suburban shopping malls. While the plans were ultimately rejected by the City of Fort Worth, they were picked up by Kalamazoo, Michigan in 1957, resulting in the opening of Kalamazoo Mall (**FIGURE 3**), the first pedestrian mall in the US two years later (Cheyne, 2010).

After the development of Kalamazoo Mall, pedestrian malls were soon seen as a way for cities across the US to revitalize downtowns that had been decimated by suburban shopping malls. As a result, pedestrian malls began to appear in dozens of cities across the US in the 1960s and 1970s (Cialone, 2008). Notable examples of pedestrian malls that were developed in the US include Church Street Marketplace in Burlington, Vermont; Third Street Promenade in Santa Monica, California; Lincoln Road in Miami Beach, Florida; Fulton Mall in Fresno, California; State Street in Madison, Wisconsin; and the two case study sites examined in this study: Downtown Mall in Charlottesville, Virginia, and Pearl Street Mall in Boulder, Colorado.

By the end of the 1970s, about 200 pedestrian malls had been built in the US (Baker, 2010). However, from the beginning, pedestrian malls were created in a different way in the US than they were in Europe. Whereas existing streets were closed to traffic in Europe, pedestrian malls in the US were often built new. The model for the design of the first downtown pedestrian malls in the US was the suburban shopping center. While they were initially focused primarily on retail shopping, they evolved in the 1960s and 1970s to be considered more as social and communal centers that included transportation, housing, and open space (Poiani, 2005).

Pedestrian Mall Failures in the US

Perhaps due to mistakes made in the design and development phases, many pedestrian malls in the US started to lose popularity in the 1980s. It seemed that many cities failed to consider how pedestrian malls fit into the overall planning and economic context of the city. There was an emphasis on simplistic and cosmetic design concepts, and after the design and planning phases were complete, there was no plan to properly manage pedestrian mall areas (Poiani, 2005).

Then, in the 1990s, many cities with struggling pedestrian malls decided to reopen them to cars. Even cities with previously successful pedestrian malls started to experience problems as retail patterns shifted. Chain stores and restaurants were gradually replacing independent, locally owned businesses and there was a lull in evening activity and entertainment, resulting in an increase in business and retail vacancies (Poiani, 2005).



FIGURE 3: Kalamazoo Mall, 1960
(Source: Kalamazoo Public Library)

As a result, in the 1990s and 2000s, pedestrian malls in the US vanished at a rapid rate. In 2009, the City of Buffalo, which was struggling with its own pedestrian mall (**FIGURE 4**), conducted a survey which found 78 percent of 72 surveyed communities had completely or partially reopened their pedestrian mall to vehicular traffic and that an additional 10 percent were considering doing the same (City of Buffalo, 2009). Today, only about 15 of the original pedestrian malls that were developed remain (Baker, 2010). The ones that remain today tend to be in downtowns with large amounts of workers, residents, and/or visitors that provide enough pedestrian traffic to support retail stores, services businesses, and professional offices within the district (Goldfield, 2007).

After the majority of pedestrian zones in the US failed and were reopened to automobile traffic by the end of the 20th century, a number of urban theorists looked for ways to explain their failure. The demise of American pedestrian zones has been attributed to the movement of people into suburban areas and the development of suburban shopping malls. As suburbanization increased, downtown pedestrian zones were increasingly reliant on lunchtime office workers and low-income city residents, making it harder for them to maintain sufficient business activity (Rubenstein, 1992). Another view is that most pedestrian zones in the US failed because of poor public transportation (Goldfield, 2007). Some also think many pedestrian areas were designed as transit malls and were divided by transit lanes for busses that were loud and created a lot of pollution that made the areas very uncomfortable for pedestrians (Crawford, 2002).

Additional explanations for pedestrian mall failure in the US are that zoning regulations, lending policies, and building codes all make it more difficult to create mixed-use environments in downtowns, especially when they are competing with cheaper and larger homes in the suburbs. In addition, many products and services once available in city centers (as they still are throughout Europe) have been displaced by shopping malls and discount superstores (Goldfield, 2007).

Recently a variety of other factors have been offered to explain pedestrian mall failure, including the development of ring roads around downtowns, lack of authenticity, excessive design, and lack of automobile access and parking facilities. Some even claim pedestrian zones quickened the demise of downtowns in the US. (Gibbs, 2012). Others have argued that commercial areas need cars to survive and that banning cars caused pedestrian zones to fail (Speck, 2012). These authors feel pedestrian zones can only be successful if they are located in college or resort towns or if there is a strong public-private partnership in place, which they claim are the only reasons that the few remaining pedestrian zones in the US have survived (Gibbs, 2012; Speck, 2012).

Despite past failures of many pedestrian malls in the US, they may still be seen as viable options for creating pedestrian-friendly public space within cities. Since an in-depth explanation of the failures of



FIGURE 4: Buffalo, New York's failed Main Street Mall
(Source: metrobuffalo.com)

specific pedestrian malls is beyond the scope of this study, it is necessary now to turn our focus to what classic and contemporary urban theorists think are essential elements of successful public spaces.

ELEMENTS OF SUCCESS: THE FOUR PILLARS OF THRIVING PUBLIC SPACES

The writing and research on urban design reviewed for this study addresses factors of thriving public spaces and can be organized into four pillars: accessibility, use, design, and comfort (FIGURE 5). Accessibility includes pedestrian, bicycle, transit, and parking access to public space. Use pertains to land use (density, mixed-use, active uses, and attractions) and how it can be used to attract people to public spaces. Design relates to how urban form (location, enclosure, and visual interest) and amenities (places to sit, trees, water features, signage, lighting, and pavement treatments) work to create places people want to be. Finally, comfort relates to feelings associated with how public space and how it can be made more appealing for people by addressing weather and maintenance issues.

Accessibility

Based on the literature reviewed and discussed in more detail below, it is vital that people can easily reach and access public spaces either by walking, taking public transportation, riding a bicycle, or parking a car nearby. While the preferred methods of access are walking, bicycling, and transit, accommodation also needs to be made for those arriving by car (FIGURE 6).

Walking and Transit – The keys to good accessibility for pedestrians and transit users are frequency, connectivity, and pleasure. In terms of frequency, there should be numerous entrances into and pedestrian pathways across a public space and there should be many nearby transit stops. A city that has short blocks will have more intersections which translate to more choices and options for pedestrians (Jacobs, 1993; Speck, 2012). In addition, a public space should have frequent entrances – about one every 300 ft. – so that it is easy to get to (Jacobs, 1993). For a carfree area like a pedestrian zone to be successful, excellent public transportation is very important. Therefore, it is crucial that transit stops be no more than a 5-minute walk away from pedestrian zones (Crawford, 2002; Speck, 2012).

When it comes to connectivity, the goal should be to use numerous pedestrian pathways to bring people together and allow pedestrian access to key areas and attractions nearby (Gehl, 2011). There should also be pedestrian pathways that cut through long blocks (Alexander et al., 1977). These frequent and connected pathways also need to be pleasurable to use, meaning they need to be safe, easy to use, and quiet (Jacobs, 1993; Gehl, 2011). These elements all come together to help improve walkability. It is important to note that walkability and transit form a symbiotic relationship. Jeff Speck shows how more

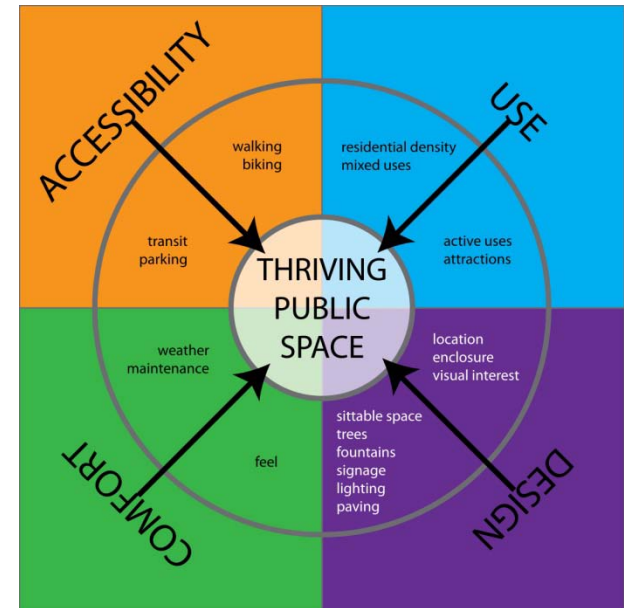


FIGURE 5: The four pillars of thriving public spaces

transit in a city leads to more pedestrians. However, he emphasizes that good transit relies on a compact, diverse, and walkable neighborhood structure. In addition, he says that successful transit requires a place that is urban, design that is clear and easy to understand, good frequency of service, and a pleasurable user experience (Speck, 2012).

Biking – In the past decade or so, urban theorists in the US have started paying more attention to the role of biking in cities. While classic American urban writers such as Christopher Alexander, William Whyte, and Allan Jacobs have focused primarily on pedestrians, transit, and automobiles, recent writers such as Speck have noted that bikes need to be accommodated and welcomed into cities, recognizing that they play a crucial role in improving walkability. Further, there need to be good, safe biking routes that lead to key public spaces (Speck, 2012). From the European perspective, where cities typically have more experience with bicycling, authors such as J.H. Crawford note the importance of keeping bikes out of pedestrian zones and providing bicycle parking at the edges of those areas (Crawford, 2002).

Parking – Though authors such as Jan Gehl and Crawford feel a carfree downtown is optimal, most of the authors surveyed think that automobiles will need to be accommodated for many years to come. These urban theorists feel the most important way to accommodate cars is to provide an appropriate amount of parking near public spaces so people can easily park nearby and walk to them. Some classic authors feel there needs to be a sufficient amount of parking near a public space, but that it is not essential (Jacobs, 1993). On the other hand, more recent authors think parking is extremely important and that it is crucial to have a good parking strategy (Gibbs, 2012; Speck, 2012). Speck, in particular, places strong emphasis on the approaches of Donald Shoup, the author of “The High Cost of Free Parking”, for providing an excellent way to confront the challenges of parking while maintaining a pedestrian-friendly downtown (Speck, 2012). In addition, New Urbanist authors have emphasized that structured parking and larger surface lots should be hidden behind buildings that are oriented along the street edge (Alexander et al., 1977; Speck, 2012).

“Pedestrians . . . are the major component of center-city transportation. They should be given a larger share of the spaces and the city, and the city’s merchants will be better off if they are”

- William Whyte

ACCESSIBILITY: pedestrian, bicycle, transit, and automobile

Public transit with stops close to the pedestrian zone gives access to the rest of the city

Wide sidewalks on pedestrian-priority shared streets leading to the pedestrian zone provide easy and comfortable access to pedestrians

On-street parking outside of the pedestrian zone with parking garages on adjacent streets provides access for automobiles

Bike parking at entrance to the pedestrian zone gives access to bicyclists



FIGURE 6: Connecting street off the Sodra Forstadsgatan pedestrian zone in Malmo, Sweden

Use

If the accessibility requirements of a public space have been met, how that space and adjacent areas are being used also need to be examined. Gehl illustrates the importance of thinking about how a space is used by describing how people need to be brought together instead of being dispersed. Along with Alexander, Gehl also shows how public spaces satisfy people's need for contact, knowledge, and stimulation and how people need to meet and interact with others. Gehl points out that a variety of activities is needed to support outdoor spaces and that if people can see street activity, they will want to participate in it (Alexander et al., 1977; Gehl, 2011). These foundational human needs for interaction can be satisfied in a downtown public space if there is sufficient residential density, a mix of uses, a good supply of active uses, and a variety of attractions (**FIGURE 7**).

Residential Density – For pedestrian zones and the downtowns that surround them to thrive it is vital that a large number of people live within downtown areas and near pedestrian zones (Whyte, 1988; Jacobs, 1993; Crawford, 2002; Speck, 2012). Of all of the authors surveyed that discussed density, only Jacobs felt residential density near a public space contributed to its success but was not essential to it (Jacobs, 1993).

Mixed Uses – In addition to residential density in downtowns, buildings need to have a mix of uses, meaning that buildings, particularly along main-street corridors and around public spaces, should not have segregated or singular uses such as being purely residential, purely office, or purely retail. Instead, buildings need to have a variety of uses to help create physical and economic diversity that fosters active street life (Rubenstein, 1992; Jacobs, 1993; Crawford, 2002; Gehl, 2011; Gibbs, 2012; Speck, 2012). In particular, universities that are located in or near downtowns have been shown to be excellent generators of street activity and a key element of successful public spaces such as pedestrian zones (Gehl, 2011; Gibbs, 2012; Speck, 2012).

Active Uses – A downtown with a combination of residential, commercial, civic, and other uses also needs to include so-called active uses, which are uses that encourage a lot of activity, such as restaurants, coffee shops, markets, and recreational facilities. Public spaces that include opportunities for walking, sitting, and participating in activities encourage social contact and create an active street life (Gehl, 2011; Gibbs, 2012). Public spaces need to be designed so that people can move, linger, and participate in social and recreational activities (Alexander et al., 1977; Gehl, 2011). Whyte placed particular emphasis on the importance of food carts and other food establishments that serve food to people in public spaces as a great way to encourage people to stay and participate socially (Whyte, 1988).

“Food . . . draws people, who draw more people”

- William Whyte

Attractions – People that live outside of downtowns need to be given reasons to go downtown and people that live within downtowns need to be given reasons to participate in city life. The best way to accomplish this is to have a series of attractions throughout a downtown that are situated in relation to public spaces (Alexander et al., 1977; Whyte, 1988). These attractions can include things such as parks, marketplaces, museums, and theaters (Alexander et al., 1977; Rubenstein, 1992; Crawford, 2002). It is also important to note that various attractions should not be located too far apart from each other and that main attractions should be located at the ends of public spaces to make it easy for people to access them and to keep people moving (Alexander et al., 1977). Differing somewhat from other authors, Jacobs felt that parks, plazas, and open spaces were good but not essential to making public spaces successful (Jacobs, 1993).

USE: residential density, mixed and active uses, and attractions

Buildings with residences and offices on the upper floors provide a constant customer base to the pedestrian zone

Active uses such as sidewalk cafes and restaurants create constant activity along the pedestrian zone

Attractions such as churches that are visible from within the pedestrian zone act as landmarks and attract people

First-floor retail draws people and activates the pedestrian zone



FIGURE 7: Pedestrian zone in Flensburg, Germany
(Photo: Niels Elgaard Larsen)

Design

In addition to the requirements of accessibility and use, there are a number of design considerations that must be taken into account when trying to create pedestrianized public spaces. First, the physical form of the space itself and the surrounding areas need to be addressed. Form includes where the public space is located within the city and everything located within and around the space. The width of the space and the heights of buildings create enclosure and the layout and design of the space and its contents create visual interest. Second, it is important to look at the types of amenities located within a public space and how they are designed. Amenities include sittable space, trees, fountains, signage, lighting, and paving (**FIGURE 8**). As will be discussed, there is some disagreement among the authors surveyed about the importance of these amenities and to what degree these design details matter.

Form

The form of a public space is crucial to its success and helps determine whether or not it will be a place people will want to be. The key aspects of form are location, enclosure, and visual interest.

Location – The first major consideration related to form is where public spaces like pedestrian zones should be located within the city and the relationship of physical structures within those public spaces. Both Alexander and Whyte argue that public spaces, particularly pedestrian areas, need to be located within the heart of a community or in a downtown where the highest level of pedestrian traffic exists (Alexander et al., 1977; Whyte, 1988). In addition, buildings should be located along and facing public spaces and these buildings should also be close to each other to define the space and orient the uses towards the public space (Alexander et al., 1977; Jacobs, 1993; Crawford, 2002; Gehl, 2011). Public spaces also need to have clearly defined centers and edges (Alexander et al., 1977; Speck, 2012). Alexander discusses the importance of including a focal design element (like a fountain, a clock, or a sculpture) located roughly in the middle of a public space between the natural pedestrian pathways (Alexander et al., 1977). Additionally, it has been observed that people tend to stay along the edges of public spaces (Whyte, 1988; Gehl, 2011). Therefore, it is important that the edges of public spaces are lively and active (Alexander et al., 1977; Speck, 2012). Alexander and Gehl both argue that arcades should be used in the buildings around the edges of public spaces to help concentrate activity and to provide additional shelter for pedestrians (Alexander et al., 1977; Gehl, 2011).

Enclosure – The next consideration related to form is how to design a public space so that it will create a sense of enclosure. Gehl says the relationship between physical and experienced distances matters, and argues that public spaces should have a small scale so people can experience them with all of their senses. It is particularly important for people to be able to comfortably talk to and see each other (Gehl, 2011). A small or human scale enclosure can be achieved through use of a proportional relationship

“Get the design right and
people will walk in almost
any climate”

- Jeff Speck

between the width of public space or street area and the heights of the buildings surrounding it. Public spaces should have good horizontal and vertical definition and buildings should serve as boundaries defining the space (Jacobs, 1993). Further, narrow spaces are better than wide spaces. It becomes especially problematic if a public space is so wide that it's uncomfortable for people to walk across (Whyte, 1988). As for building heights, many urban theorists argue buildings should remain low (about 4-10 stories) around public spaces (Alexander et al., 1977; Jacobs, 1993; Crawford, 2002; Gehl, 2011). Alexander adds that height variance between adjacent buildings should only be one story (Alexander et al., 1977). However, others think building height is less important (Whyte, 1988; Speck, 2012). Either way, it is important that buildings complement each other in terms of height and appearance (Jacobs, 1993). Finally, it is best to avoid public spaces that are sunken or elevated as observations have shown that people generally do not like to use them (Whyte, 1988; Gehl, 2011).

Visual Interest – The final consideration that relates to form is how visual interest can be used to encourage people to use public space. Jacobs describes the elements of visual interest as being the mystery and the magic of urban design (Jacobs, 1993). Visual interest can be created by the layout of streets and public spaces, the treatment of building facades, and the establishment of views and landmarks. Streets and public spaces should meander and wind so they entice pedestrians to walk along them. They should also be wide, narrow in places, and have wide, funnel-like openings to help draw people in (Alexander et al., 1977; Jacobs, 1993; Gehl, 2011). Also, buildings around public spaces should be narrow with frequent entrances, have varied and irregular facades, and have windows that you can see in and out of (Alexander et al., 1977; Jacobs, 1993; Gehl, 2011; Speck, 2012). Finally, dramatic views created by topography or slope are useful, and landmarks can be used to help attract people to public spaces and through downtown areas (Jacobs, 1993).

Amenities

While creating the proper form for public spaces is essential, the design of the amenities within those spaces also needs to be considered. Amenities include benches, landscaping, water features, sculpture, and lights. However, there is considerable disagreement among the authors regarding the importance of these design details. Some feel that detailed design at the small scale is crucial to creating a strong design foundation and that this makes it possible for other activities to develop (Rubenstein, 1992; Gehl, 2011). Others feel that design details are good to pay attention to, but they are not essential to success (Jacobs, 1993). Finally, there are some who think design and aesthetics are not very important, and if overused that they can even distract people from other elements like retail storefronts (Whyte, 1988; Gibbs, 2012; Speck, 2012). In any case, the amenities that are placed within public spaces and how they are designed do require some attention. The amenities mentioned by the authors surveyed and included within this study are sittable space, trees, fountains, signage, lighting, and paving.

Sittable Space – Perhaps the most important amenity to include in public space is sittable space, meaning places where people can sit, including benches and chairs. Whyte, in particular, felt the amount of sittable space was crucial to success. He found that the availability and layout of ledges, benches, and movable chairs are essential (Whyte, 1988). Gehl agrees that sittable spaces, especially benches placed around the edges of public spaces, are extremely important and that they can also be used to help protect people from the elements (Gehl, 2011). Jacobs, by comparison, places much less emphasis on the importance of sittable space (Jacobs, 1993).

Trees – Another important amenity for public spaces is the inclusion of trees. A public space with a significant number of trees will yield a number of benefits: they can channel walkways and moderate the scale of space; they also enhance pedestrian comfort and urban livability since they increase property values and retail viability, produce energy saving shade, absorb carbon, reduce runoff, and provide shelter (Whyte, 1988; Speck, 2012). However, as with the other amenities, there are those who feel trees are not essential and that urban designers should be careful not to plant trees that block storefronts (Jacobs, 1993; Gibbs, 2012).

Fountains, Signage, Lighting, and Paving – While most authors surveyed did not mention water features, Whyte did emphasize the use of fountains in public spaces with particular attention to the importance of making water accessible (Whyte, 1988). Of all of the authors, Robert Gibbs made the most mention of the importance of wayfinding signage and good lighting (Gibbs, 2012). Finally, Gehl noted that a public space should have paving that is comfortable to walk on (Gehl, 2011). However, Jacobs noted that pavement treatments are often expensive and do not dictate whether or not a space is used (Jacobs, 1993).

DESIGN: urban form and amenities



FIGURE 8: Sodergatan pedestrian zone in Malmo, Sweden

Comfort

Not only do public spaces like pedestrian zones need to be appropriately located, have effective uses, and be properly designed, but they also need to be comfortable for people. Comfort includes how well people are protected from weather and how well a space is maintained. However, comfort is also derived from how a public space makes people feel (**FIGURE 9**).

Weather – Physical comfort (access to sun, shade, and protection from wind) are requirements for a successful public space (Whyte, 1988; Jacobs, 1993; Gehl, 2011). It is important to note that if a public space is designed to provide physical comfort, people will walk in almost any weather conditions (Speck, 2012). A number of elements previously mentioned play a role in how well people are protected from weather. Streets and public spaces that meander and have both narrow and wide sections help disperse wind. In addition, low-rise buildings are less susceptible to downdrafts (Gehl, 2011). If seating, sidewalks, trees, and arcades are implemented properly, they can provide additional protection for pedestrians from weather (Gehl, 2011; Gibbs, 2012).

Maintenance – It is important to consider how a public space is going to be maintained. For example, trash containers need to be designed properly so people will use them. If trash containers are frequent and have a useful design and the public space is well maintained, people will respond by keeping the space clean (Whyte, 1988). Therefore, it is critical that streets, public spaces, and all amenities provided within them are well maintained and kept clean (Jacobs, 1993; Gibbs, 2012).

Feel – Finally, if all of the elements discussed earlier are properly implemented, they will come together to create a space that makes people feel comfortable and welcome. This feeling of comfort is essential to making public spaces safe and quiet so that they are pleasurable places to be. It is important people feel safe from crime and vehicular traffic (Gehl, 2011). However, it is also vital that a public space is lively and inviting so people are attracted to the space. If done properly, a symbiotic relationship develops in which public space evokes a feeling attracting people whose presence attracts more people (Gehl, 2010). On the other hand, it should also be noted that efforts to make public spaces safe and even comfortable often lead to the removal of so-called “undesirables” and designs and policies that ultimately discourage people from staying in a place or lingering. These approaches have a negative impact on thriving public spaces and should be avoided (Whyte, 1988).

“Comfort is a key ingredient in any successful public space. Once people feel at ease in a place, they can loosen up and enjoy themselves.”

- Jay Walljasper

COMFORT: weather, maintenance, and feel

Buildings with awnings and arcades create refuges from adverse weather conditions

An overall attractive, comfortable, clean, and safe environment that is also visually appealing will make people feel comfortable and want to be there

Mid-rise buildings that frame a street provide protection from wind and create shade

Clean sidewalks and well-maintained buildings make people feel safe and comfortable



FIGURE 9: Sodra Forstadsgatan pedestrian zone in Malmo, Sweden

Thriving public spaces, including pedestrian zones, represent a culmination of many elements coming together in a way that attracts people and encourages them to stay. The four pillars of successful public spaces derived from this literature review reveal several important requirements for success. Public spaces need to be accessible to pedestrians, bicyclists, transit users, and automobile drivers; they need to have a high degree of residential density nearby and they need to have mixed and active uses including a number of attractions; they need to be centrally located and create an enclosed space that is human scale; they need to be visually interesting, and should include a number of amenities, such as sittable space, trees, fountains, signage, lighting, and unique pavement treatments; and, finally, they need to protect people from the weather, be well maintained, and make people feel comfortable. If all of these elements are addressed in the design of public space, it is much more likely to experience success. Therefore, it is the purpose of the current study to test the physical elements and conditions set forth through this theoretical framework.

RESEARCH DESIGN

Research Objectives – The overarching objective of this research is to discover what factors make existing pedestrian malls successful, when so many others have failed, particularly in the US. To accomplish this, this study sets out to: 1) determine to what degree “successful” pedestrianized areas possess the key elements identified in the literature review (a.k.a. - the four pillars of thriving public spaces) and, 2) gauge the relative importance of each of these pillars based on perceptions of key stakeholders. Based on these findings, a specific set of recommendations for urban designers and planners interested in maintaining and creating successful pedestrianized spaces will be presented.

Hypotheses – Based on the long-term success of numerous pedestrianized zones throughout Europe (as well as those remaining in the US) it is expected that new pedestrian areas can be successfully implemented, if properly planned and designed. Further, information presented in the literature review seems to suggest that the following hypothesis will receive empirical support:

H1. All pillars in the theoretical framework will be present to a greater or lesser degree for each case. It follows that the four pillars must all be considered to create and maintain a successful pedestrian space.

On the other hand, the authors surveyed in the literature review did not say anything directly concerning the relative importance of each element included in the four pillars. Just one author, Allen Jacobs (1993), mentioned that some elements were essential while others were not. No further detail was provided, however, it is the author’s opinion that the following hypothesis will also receive support:

H2. Some pillars will matter more to respondents than others. Of all pillars, it is expected that **use** will be perceived as most important, followed by **design**, then **accessibility**, and finally, **comfort** will be perceived as the least important element for success.

METHODS

Case Study Selection – Research for this study depends on a combination of case study city site visits, on-site observations, and interviews. The case study cities and corresponding pedestrian areas selected were Copenhagen, Denmark (Strøget); Munich, Germany (Neuhauser Straße/Kaufingerstraße); Charlottesville, Virginia (Downtown Mall); and Boulder, Colorado (Pearl Street Mall) (**FIGURES 10-18**). These cities were selected due to the success of their pedestrian areas, as defined by their frequent mentions in the literature on pedestrian areas, their length of history and experience with pedestrian malls, their high commercial rental rates, their high pedestrian counts, and their low vacancy rates. Pedestrian malls in each city fall into one of two categories of interest – plazas or interrupted malls and continuous or exclusive malls (**for descriptions see Background section**) – and they are all made up exclusively of public space. Each case study site was visited during the summer of 2012.

Data Collection – In each city, pedestrian zones were studied through site visits that included detailed written and visual observations of site conditions, including an inventory of amenities, an evaluation of site maintenance levels, and a look at conditions of adjacent streets (**for observation guides see Appendix A**). Observations were made for the entire area included within each pedestrian zone and the blocks immediately adjacent (**for case study maps see Findings section**). The observation period for each case study site spanned an average of 2 days.

In addition, interviews of pedestrian zone patrons, city planners, and downtown business association members were conducted in each city (**for patron interview location maps see Appendix C**). Questions posed were open-ended and covered a range of topics, including the pedestrian experience; changes over time; maintenance, management, and marketing; public and private support; city policy; and factors of success (**for interview questions see Appendix B**). Interview respondents were selected differently depending on respondent category. City planners and business association members were part of a non-random purposive sample and were contacted in advance to schedule formal interviews. In this case, appropriate subjects were selected through official city websites. Pedestrian zone patrons were part of a non-random convenience sample and were interviewed over a 5-6 hour period at each case study site. These subjects were selected based on their availability and willingness. A total of twenty-five patrons and eight planners and business association members were interviewed.³ It is

important to note that the numbers of interviews in each location were constrained by time, finances, weather, language, and local conditions, including the amount of public seating available.

(In the sections to follow, pedestrian mall patrons will be referred to as “users” and city planners and business association members will be referred to as “creators” to differentiate their primary roles and relationships to pedestrian malls. These two groups were targeted since they are the key stakeholders – the people who implement policy and design to create the space; and the people who ultimately occupy and use this space.)

Data Analysis – The utility of the four pillars theoretical framework was tested through a series of statistical analyses. First, a statistical analysis of observational data was conducted to determine how well each pedestrian area corresponds to the physical elements included within the framework. To measure the degree of perceived importance for each pillar category, user and creator responses were coded and assigned to categories. Next, categories were ranked by overall importance and compared by respondent group. Finally, data collected through site observations was used to inform case study descriptions and to reference specific physical features on maps.

Additional Data Sources – Each case study also required a thorough examination of relevant sources to provide historical and cultural context to observations and to avoid potential misunderstandings associated with the creation and presentation of interview questions and responses. Case study sources include classic and current literature, newspaper and magazine articles, websites, academic journal articles, and government reports.

Relevance – The present study relies on a relatively uncommon mix of methods to assess pedestrian areas in the US and Europe. William Whyte’s studies of public space in the US in the 1970s and 1980s also included some pedestrian-only areas, documented in his books “City: Rediscovering the Center” and “The Social Life of Small Urban Spaces”, but these are based primarily on observations. Jan Gehl’s extensive studies in Copenhagen in the mid-1990s are laid out in detail in his book “Public Spaces Public Life” and include both observations and user interviews. However, the closest work that shares the most similar methodology to the present study is Kent Robertson’s work on pedestrian malls that focused on six US cities and six cities in Sweden in the 1980s. His case studies included observations, user and creator interviews, and economic analysis, and were published in the *Journal of the American Planning*

Association in 1993. Another recent work with similar methodology was Dorina Pojani's Master's Thesis for the University of Cincinnati Community Planning Program entitled "Downtown Pedestrian Malls: Including a Case Study of Santa Monica's Third Street Promenade" completed in 2005. Pojani's study included observations and creator interviews, but did not include user interviews. Each of these works was consulted during the course of this study.

While these studies share similar methodologies, none have focused on the views of users and creators or attempted to discover key factors of pedestrian mall success. Therefore, the primary objective of this study will be to reveal possible factors of success and examine differing views of users and creators about pedestrian areas. It is hoped that this information will be used to help revitalize existing pedestrian areas and to create new pedestrian zones in the future.



FIGURE 10: Case study site locations

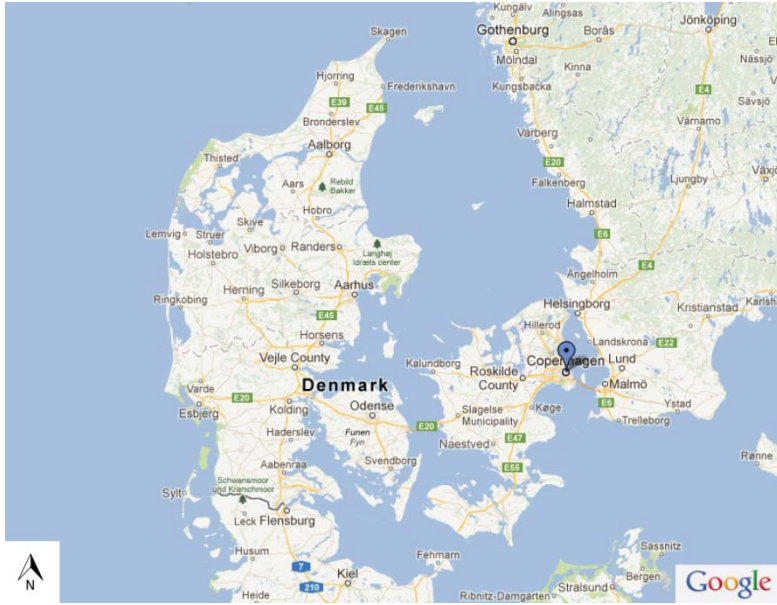


FIGURE 11: Case study location in Denmark



FIGURE 12: Case study location in Germany

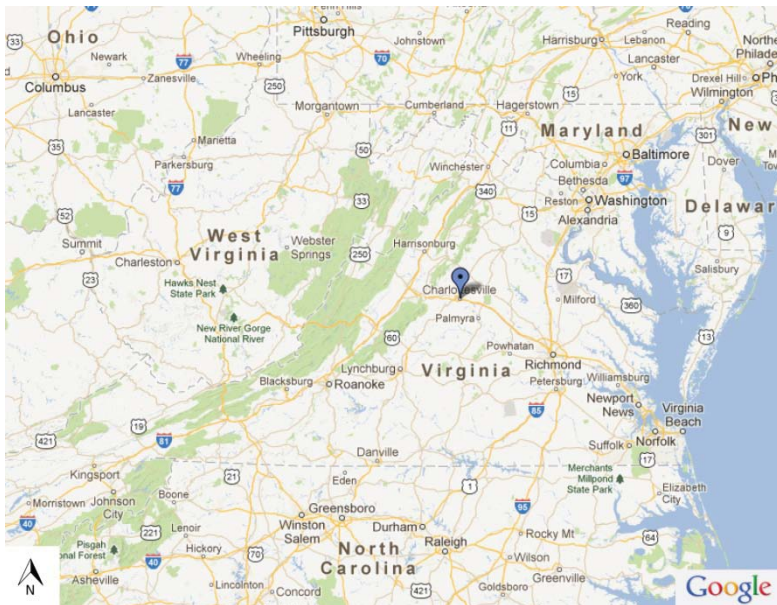


FIGURE 13: Case study location in Virginia

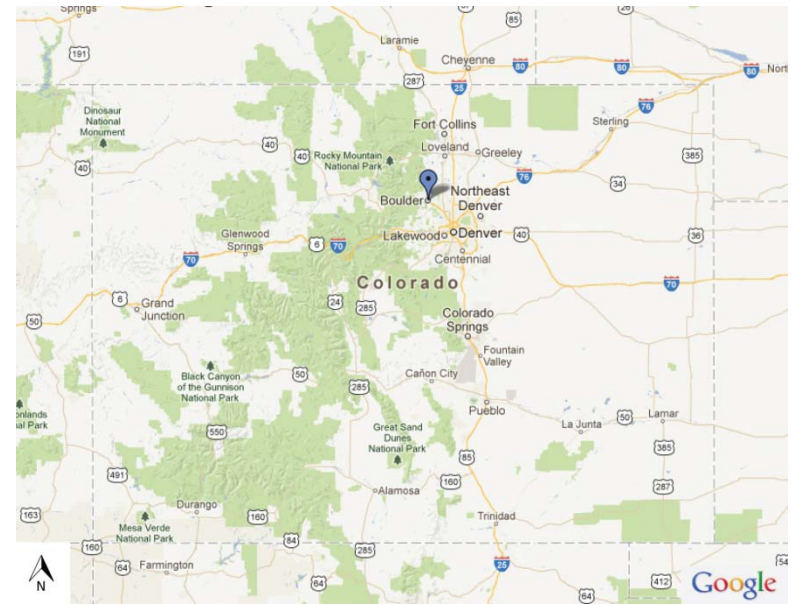


FIGURE 14: Case study location in Colorado



FIGURE 15: Study area in Copenhagen, Denmark

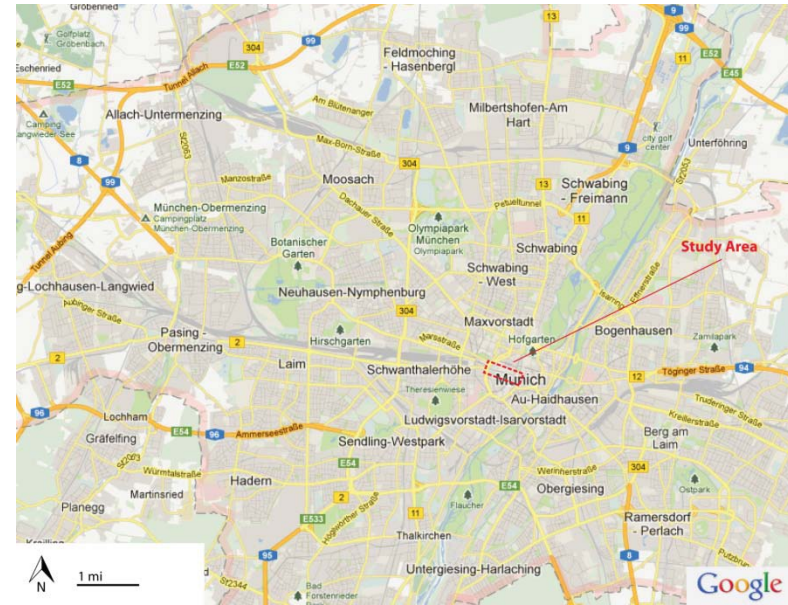


FIGURE 16: Study area in Munich, Germany

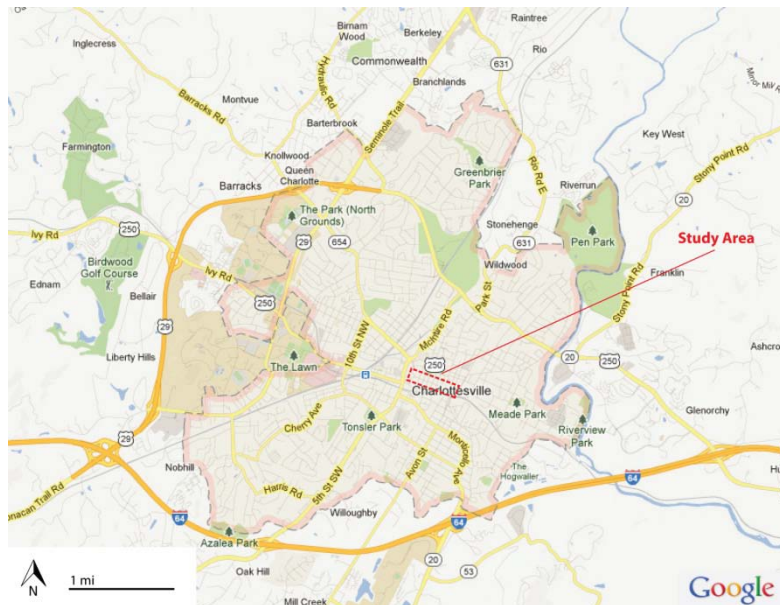


FIGURE 17: Study area in Charlottesville, Virginia

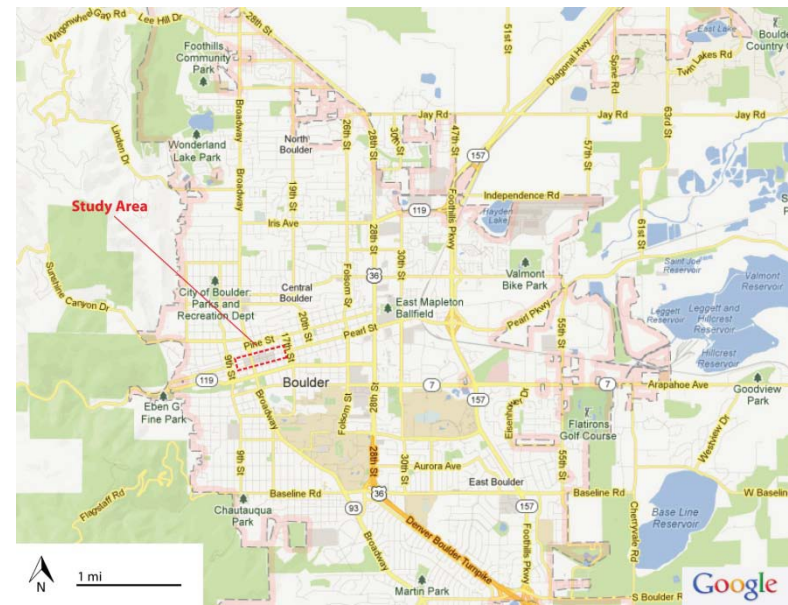


FIGURE 18: Study area in Boulder, Colorado

FINDINGS

The findings derived from observations and interviews in this study are presented as individual case studies for each location visited (**FIGURES 19-22**). Each case study includes an overview of the city and the pedestrian mall study area; key findings in the areas of accessibility, use, design, and comfort; and a selection of quotes from local users and creators. The case studies are followed by a summary of findings for all case study sites.



FIGURE 19: Copenhagen's Strøget



FIGURE 20: Munich's Kaufingerstraße



FIGURE 21: Charlottesville's Downtown Mall



FIGURE 22: Boulder's Pearl Street Mall



Case Study #1: STRØGET – COPENHAGEN, DENMARK

In November 1962, the City of Copenhagen closed Strøget, the main street in the heart of the city’s downtown, to automobile traffic. The newly pedestrianized street was immediately successful despite significant controversy and debate before its closure to cars. Because of Strøget’s enormous success, more pedestrian areas have been added over the years throughout Copenhagen’s historic downtown. In 1962, the amount of pedestrian-only space was 15,800 square meters (170,070 square feet). However, by 2000, the amount of pedestrian-only space had grown to 99,780 square meters (1,074,023 square feet) – a six-fold increase since 1962. Further, it was reported in 2000 that Strøget attracted about 80,000 visitors per day during summer months (Gehl & Gemzøe, 1996 & 2001).

Strøget currently spans about 2/3 of a mile (3,658 feet) in length with a width varying from 32-39 feet. It begins on the western edge at Vester Voldgade at the plaza in front of Copenhagen’s city hall (Rådhuspladsen). Strøget then continues eastward, crossing several major public squares including Gammeltorv and Nytorv, Amagertorv, and Højbro Plads. The Strøget ends on its eastern edge at Kongens Nytorv, another major public plaza (FIGURE 23).

Today, Strøget is the longest pedestrian street and one of the most successful retail streets in the world. In 2010, Colliers ranked Strøget 29th in the world for commercial rental rates (\$303 per square foot) (“Retail Real Estate”, 2010). In 2012, Mercer ranked Copenhagen 9th in the world in terms of quality of life and *Monocle* ranked Copenhagen as the 3rd most livable city in the world (Mercer, 2012; Monocle, n.d.).

COPENHAGEN⁴

Area:	29.81 sq mi
Population:	559,440
Density:	19,000/sq mi
Demographics:	77.8% Danish 22.2% Other

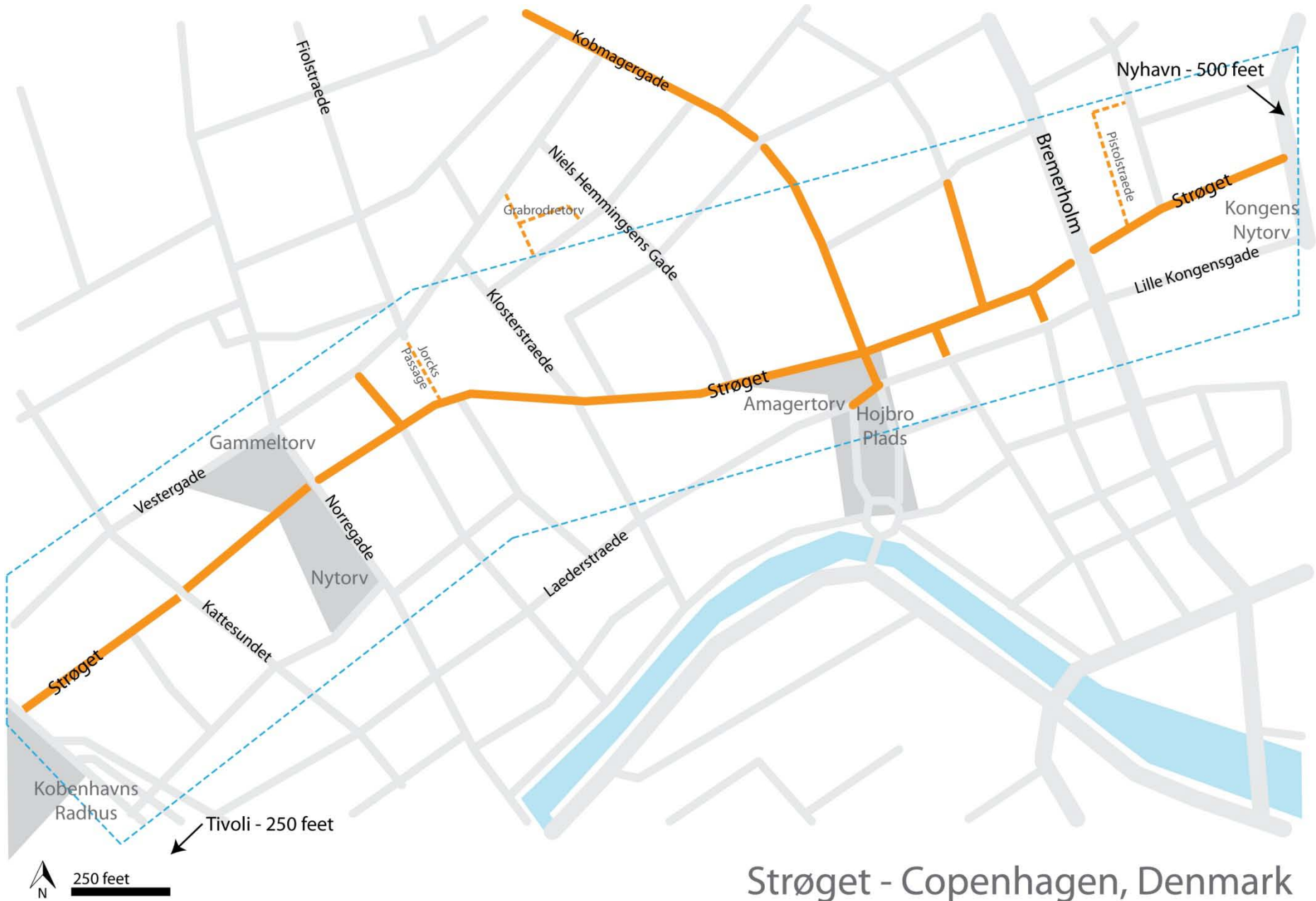
PEDESTRIAN ZONE: STRØGET

Year Opened:	1962 ⁵
Length:	3,658 ft ⁶
Width:	32-39 ft ⁷
Retail Businesses:	127 ⁸
Food Businesses:	17 ⁹
Residential:	6,800 Residents ¹⁰
Pedestrian Count:	~80,000/day ¹¹
Commercial Rents:	\$303/sq ft ¹²
Vacancy Rate:	0% ¹³

OBSERVED ELEMENTS OF SUCCESS*

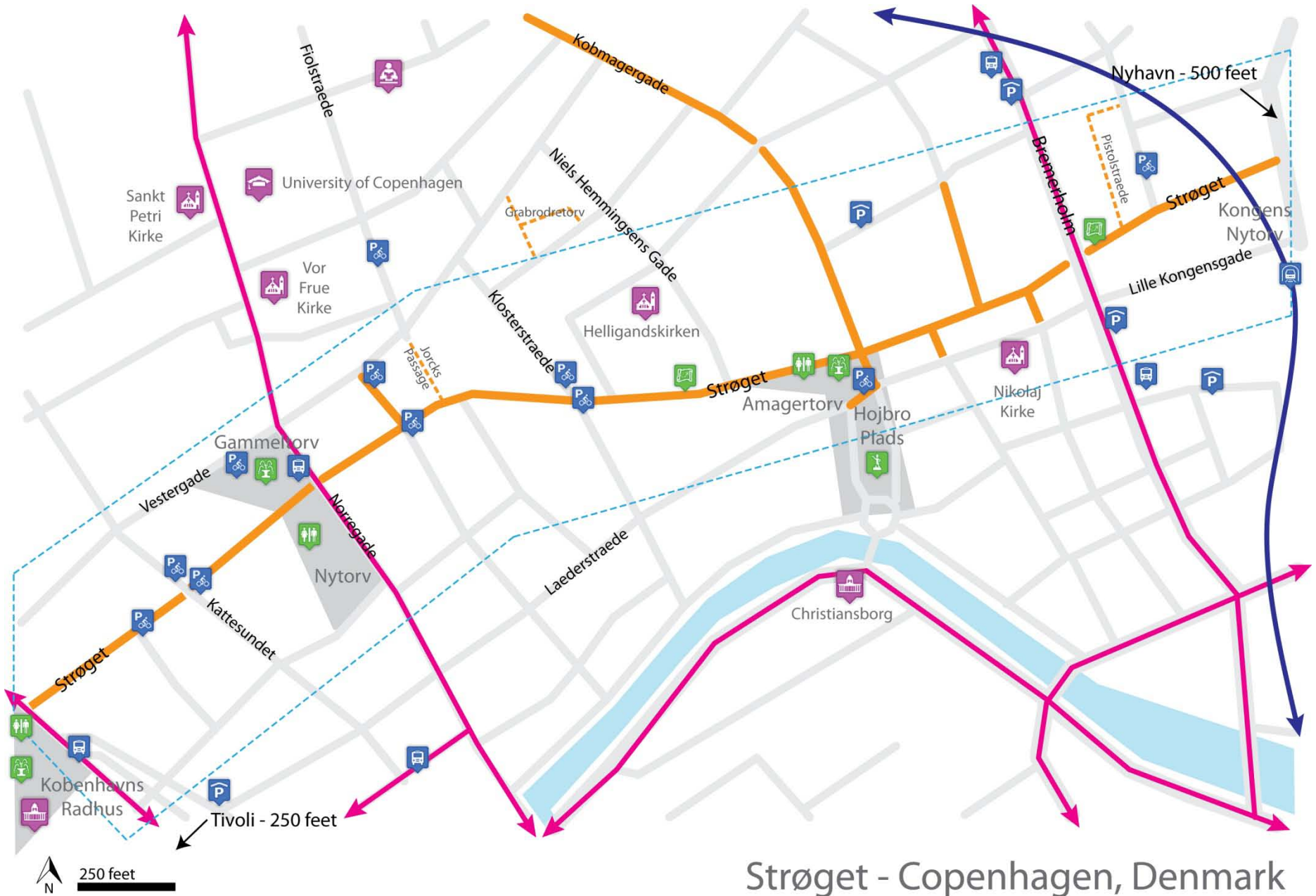
Accessibility:	Good
Use:	Excellent
Design:	Good
Comfort:	Excellent

*for ratings details see Appendix E



Strøget - Copenhagen, Denmark

FIGURE 23: Strøget and adjacent areas
 (Note: for map key see Appendix A)



Strøget - Copenhagen, Denmark

FIGURE 24: Strøget amenities and attractions
 (Note: for map key see Appendix A)

Accessibility – Strøget has numerous pedestrian access points along its entire length with at least two dozen streets, arcades, and entrances (many of which are themselves pedestrianized). There are bicycle parking racks at most entrances to Strøget, providing about 150 bicycle parking spaces (FIGURE 25). About five bicycle parking stations also provide access to the city’s bicycle share program bikes with additional bike share locations on adjacent streets. However, because of the large number of bicyclists in Copenhagen, the number of parking locations was insufficient and many bikes were observed sitting in random locations throughout the streets connecting to Strøget and within public plazas. Transit access is provided via bus stops at Radhuspladsen, Gammeltorv, and along Bremerholm. There is also a Metro stop near Kongens Nytorv. The city is currently working to expand the Metro to provide better access to downtown. When it comes to automobile access and parking there are two major streets, Nørregade and Bremerholm, that cross Strøget. There are also two minor street crossings at Kattesundet and Klosterstraede. Automobile parking is available at four parking garages that are all within approximately 300 feet of Strøget (FIGURE 24).

Use – As of 2001, the downtown area surrounding Strøget had about 6,800 residents (Gehl & Gemzøe, 2001). The entire Strøget consists of mixed-use buildings with retail and food establishments on the first floor and residential units and offices on upper floors. There are approximately 127 retail businesses and approximately 25 food establishments (restaurants and coffee shops) along Strøget. Retail stores include many major international chains, such as H&M, Hilfiger, Urban Outfitters, Gucci, Levi’s, and Disney, just to name a few. A total of 25 sidewalk cafes were observed along Strøget. Strøget is also close to the University of Copenhagen, which brings 14,000 students to the downtown (Gehl & Gemzøe, 2001). The major public plazas (Gammeltorv and Nytorv, Amagertorv, and Højbro Plads) along Strøget are used throughout the year for events and markets. In addition to the attractions of shopping, food, and events, Strøget also includes two historic cathedrals (Nikolaj Kirke and Helligandskirken) as well as other nearby cathedrals; Tivoli Gardens, one of the most famous urban amusement parks in the world, is only about 250 feet from Strøget’s western entrance; the Copenhagen public library is about 750 from Strøget; and Nyhavn, a waterfront pedestrian promenade lined with dozens of restaurants and coffee shops (FIGURE 26), is about 500 feet from Strøget’s eastern entrance (FIGURE 24).



FIGURE 25: Bike parking at Amagertorv



FIGURE 26: Nyhavn

Design – Strøget is located in the center of Copenhagen’s historic downtown. It provides a pedestrian-only connection between major attractions in the downtown. Other than a few landmark buildings, the majority of buildings along Strøget are about 40 feet high on both sides of the street which is 32-39 feet wide, creating a sense of enclosure (**FIGURE 27**). The street has several curves along its length to create a meandering experience for pedestrians and the plazas along the way help break up space and open it up in periodic intervals. The historic and varied character of the buildings along Strøget, in addition to the cathedral spires that act as landmarks, make the entire route visually appealing. Due to the street’s narrow width, seating on benches, steps around large fountains, and ledges are concentrated within public plazas (**FIGURE 28**). Trees are primarily located in and around Helligandskirken and within Højbro Plads. Lighting is provided by hanging overhead lights strung between buildings. There is minimal signage throughout Strøget. Signs on businesses are small and there are two information kiosks with area maps for wayfinding. Public restrooms are available in Amagertorv.

Strøget - Copenhagen, Denmark
Block between Radhuspladsen & Mikkel Bryggers Gade

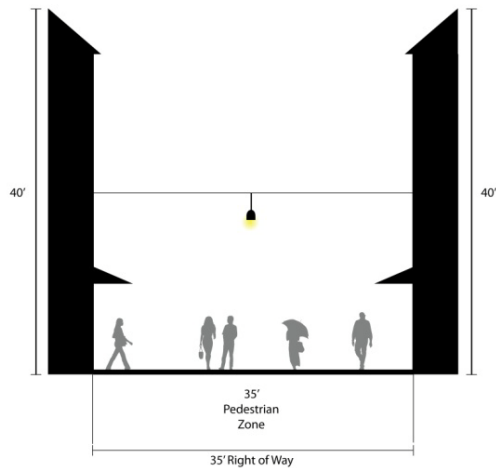


FIGURE 27: Strøget street section

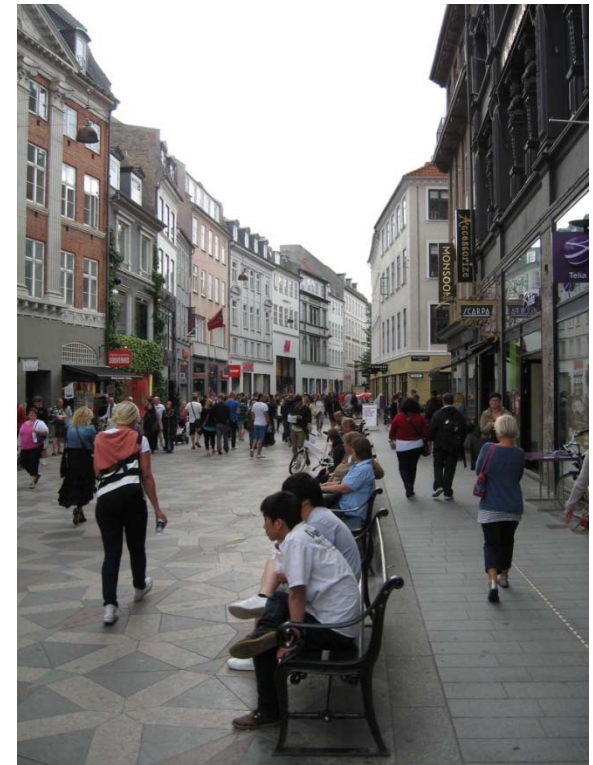


FIGURE 28: Benches at Amagertorv

Comfort – Even though there are few trees throughout Strøget, additional shade and protection from weather exists along Strøget because of the street’s narrow width, the consistent building heights, awnings in front of buildings, and several covered pedestrian passageways leading to adjacent streets. The meander of the street helps reduce the effects of wind as well. While the area is maintained regularly by the city and there are a significant number of trash cans, a large amount of litter was observed particularly in the Gammeltorv and Nytorv area. Nevertheless, the entire Strøget is very comfortable as it is visually interesting and has large amounts of attractions, amenities, and activities attracting large numbers of people (**FIGURE 29**).

What People Said

Users

“People think of Strøget when they think of Copenhagen.”

“It’s classic Copenhagen. It’s unique and has lots of shops.”

“I don’t like how all of the young people litter.”

“You can see other people and shop without any cars.”

“I think tourists like this area because it’s cozy and there are cafes and shops.”

Creators

“People like to go there because it’s nice, you see different people, and there are different types of shops and activities and cafes.”

“There are many chain stores in Strøget and this is a problem because every city starts to look like the other.”

“We like to have the minimum amount of advertising and signage”

“It is successful because there are a lot of people there, people are attracted to the place, and they are there throughout the day any time of the year.”

“We have a lot of problems with litter and graffiti.”¹⁴



FIGURE 29: Strøget



Case Study #2: NEUHAUSER STRAÙE/KAUFINGERSTRASSE – MUNICH, GERMANY

In August, 1972, just a few days before the opening of the Olympic Games in Munich, the city completed the conversion of Neuhauser Straße and Kaufingerstraße, two east-west running and connecting streets in the heart of downtown Munich, into a pedestrian zone. The pedestrianization of these streets, in conjunction with the closure of north-south running Theatinerstraße, was intended to create an urban amenity not only for the Olympics, but also for the city long after the games had ended. The city addressed wishes of local residents, ensuring that walking areas were spacious, that trees and flowers were present in the landscaping, and that there was easy access to public transportation. After conversion, surveys found there was a 49% increase in pedestrians greatly benefitting businesses within the pedestrian zone (Hajdu, 1988).

Neuhauser Straße and Kaufingerstraße are a little over ½ mile long (2,865 feet) with a width spanning from 55-75 feet. The pedestrian zone starts on the western edge at Karlsplatz, leads into Neuhauser Straße, merges into Kaufingerstraße, and ends on the eastern edge at the world-famous Marienplatz (FIGURE 30).

Today, Neuhauser Straße and Kaufingerstraße rank among the most successful shopping streets in the world. In 2010, Colliers ranked Kaufingerstraße 13th in the world with commercial rental rates of \$497 per square foot (“Retail Real Estate”, 2010). Mercer ranked Munich 4th in the world in terms of quality of life and *Monocle* ranked Munich as the 5th most livable city in the world in 2012 (Mercer, 2012; Monocle, n.d.).

MUNICH¹⁵

Area:	119.86 sq mi
Population:	1,378,176
Density:	11,498/sq mi
Demographics:	76.7% German 23.3% Other

PEDESTRIAN ZONE: NEUHAUSER STRASSE/KAUFINGERSTRASSE

Year Opened:	1972 ¹⁶
Length:	2,865 ft ¹⁷
Width:	55-75 ft ¹⁸
Retail Businesses:	115 ¹⁹
Food Businesses:	15 ²⁰
Residential:	7,000 Residents ²¹
Pedestrian Count:	~11,000-17,000/hour ²²
Commercial Rents:	\$497/sq ft ²³
Vacancy Rate:	0% ²⁴

OBSERVED ELEMENTS OF SUCCESS*

Accessibility:	Good
Use:	Excellent
Design:	Good
Comfort:	Excellent

*for ratings details see Appendix E



Neuhauser Straße/Kaufingerstraße - Munich, Germany

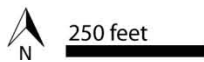


FIGURE 30: Neuhauser Straße, Kaufingerstraße, and adjacent areas
 (Note: for map key see Appendix A)



Neuhauser Straße/Kaufingerstraße - Munich, Germany

FIGURE 31: Neuhauser Straße and Kaufingerstraße amenities and attractions
 (Note: for map key see Appendix A)

Accessibility – Neuhauser Straße and Kaufingerstraße are accessible by pedestrians from about 16 entrances converging on numerous plazas, streets (11 of which are themselves completely or partially pedestrianized), arcades, and pedestrian passageways. There are about 40 bicycle parking racks located at Karlsplatz and Marienplatz. Transit access is provided by a major transit center near Karlsplatz where people can access subways, streetcars, and buses connecting to an extensive city-wide network. There is also a subway stop at Marienplatz and several escalators within the pedestrian zone that lead down to Karlsplatz and Marienplatz stations. In addition, there is a streetcar line north of Neuhauser Straße and Kaufingerstraße with a stop approximately 750 feet north of Marienplatz. There is also a bus stop at Marienplatz. As for automobile access, every cross street is closed to cars along Neuhauser Straße and Kaufingerstraße. There are five parking garages within ¼ mile of the pedestrian zone (**FIGURE 31**).

Use – As of 2007, there were 7,000 people living in downtown Munich in the area in and around Neuhauser Straße and Kaufingerstraße (City of Munich, 2007). All along this area there are mixed-use buildings with retail and food businesses on first floors and residential units and offices on upper floors. There are approximately 115 shops and 15 restaurants and coffee shops throughout the pedestrian zone. Retail stores include many international brands, such as H&M, Crabtree & Evelyn, United Colors of Benetton, and Swatch, to name a few. A total of 10 sidewalk cafes were observed in the area. The major attractions along Neuhauser Straße and Kaufingerstraße include an underground shopping center at Karlsplatz called Stachus, the new city hall (Neues Rathaus) with its famous tower glockenspiel at Marienplatz (**FIGURE 32**), Marienhof park behind city hall (currently under construction), the Frauenkirche cathedral, and the world famous public market known as the Viktualienmarkt, which lies about 400 feet from Marienplatz (**FIGURE 31**).

Design – Neuhauser Straße and Kaufingerstraße run directly through Munich’s historic downtown. Other than a handful of cathedrals and landmark buildings, the majority of buildings along the pedestrian zone rise about 50 feet high on both sides of the street, which varies from 55-75 feet in width (**FIGURE 35**). The widest section can be found along Neuhauser Straße at the intersection with Eisenmannstraße. Here a large fountain lies at the center of a public plaza with large planters and movable chairs. At the western edge of Neuhauser Straße, the Karlstor is a dramatic arch serving as a gateway for pedestrians from Karlsplatz into the pedestrian zone (**FIGURE 33**). There are several slight curves in the street that create a meandering experience for pedestrians. The buildings along the pedestrian zone all have a historic or modern character that complement one another and make the



FIGURE 32: Marienplatz and Neues Rathaus



FIGURE 33: Karlstor

street visually appealing. Public seating is mostly confined to the area around the fountain mentioned earlier and along ledges that ring planters for large trees located at the intersections with Kapellenstraße, Ettsstraße, Liebfrauenstraße, and Rosenstraße (FIGURE 34). Lighting is provided by about 150 pedestrian-scale street lights. There is minimal signage along Neuhauser Straße and Kaufingerstraße and signs on businesses are limited in size. All information about the pedestrian zone is available at the information center in the Neues Rathaus at Marienplatz.

Neuhauser Strasse-Kaufingerstrasse - Munich, Germany
Block between Herzog-Max Strasse & Kapellenstrasse



FIGURE 34: Seating at plaza on Neuhauser Straße

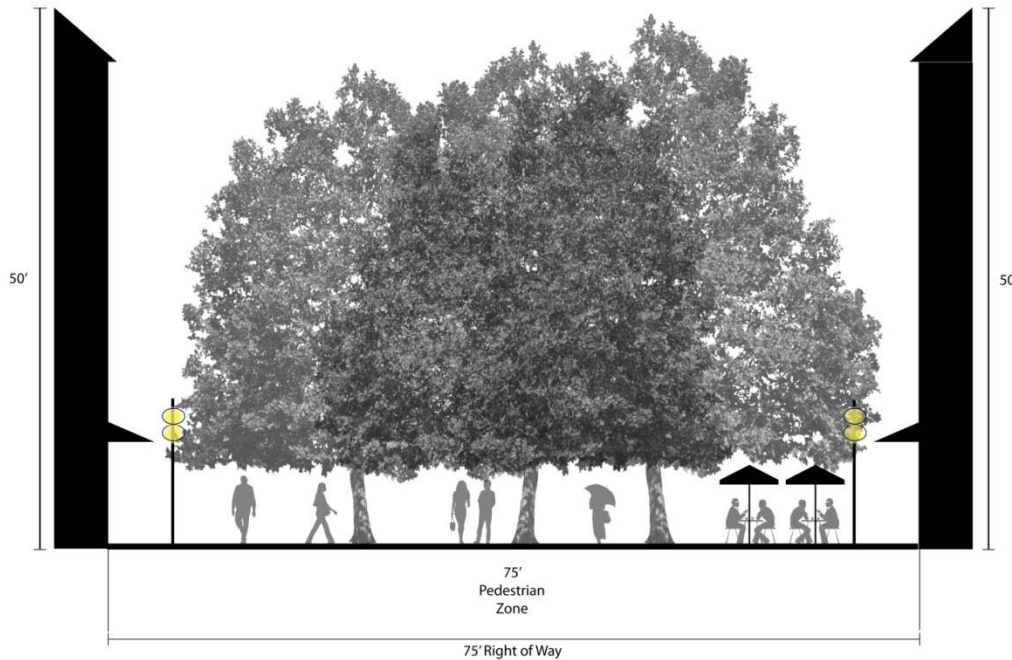


FIGURE 35: Neuhauser Straße-Kaufingerstraße street section

Comfort – In addition to shade provided by large trees, there are also several arcades, pedestrian passageways, and awnings in front of buildings that provide shelter from weather (**FIGURE 36**). The meander of the street and the location of trees help reduce the effects of wind as well. The entire pedestrian area is maintained regularly by city staff. As a result of the many popular attractions, amenities, and activities attracting large numbers of people; the strong visual interest created by its design; the protection from the weather provided by buildings and trees; and the high level of maintenance, the entire pedestrian zone along Neuhauser Straße and Kaufingerstraße is a very comfortable place to be.

What People Said

Users

“It’s the best place in Munich.”

“It’s too touristic and there are too many chain stores.”

“The people are warm and friendly.”

“I like the shopping, that it’s not too expensive, and the attractions.”

“I do think it would be good to add more trees and places to sit.”

Creators

“This is the most frequented pedestrian zone in all of Germany.”

“The main attraction is [its] shops.”

“The city has kept everything consistent since it was initially setup.”

“It is successful because it’s a historical site. It is authentic.”

“It is carfree and bike free. It is only for walking.”



FIGURE 36: Arcade on Kaufingerstraße



Case Study #3: DOWNTOWN MALL – CHARLOTTESVILLE, VIRGINIA, USA

In July, 1976, the City of Charlottesville completed the first phase of converting its main street in the heart of downtown into a pedestrian mall. This first phase consisted of closing five blocks to cars in an attempt to reverse the decline of the city’s downtown resulting from suburbanization and development of a large suburban mall on the outskirts of downtown. In 1980, an additional two blocks were pedestrianized, followed by another block in 1985 (Lucy, 2002). More recently, the pedestrian mall was extended in front of city hall in 2009.

The Downtown Mall currently stretches from Water Street and the Omni Hotel on the west end to NE 7th Street and the Charlottesville Pavillion on the east end. It is 2,145 feet long and generally 70 feet wide, except for a central plaza at the intersection of NE 2nd Street that is 130 feet wide (**FIGURE 37**).

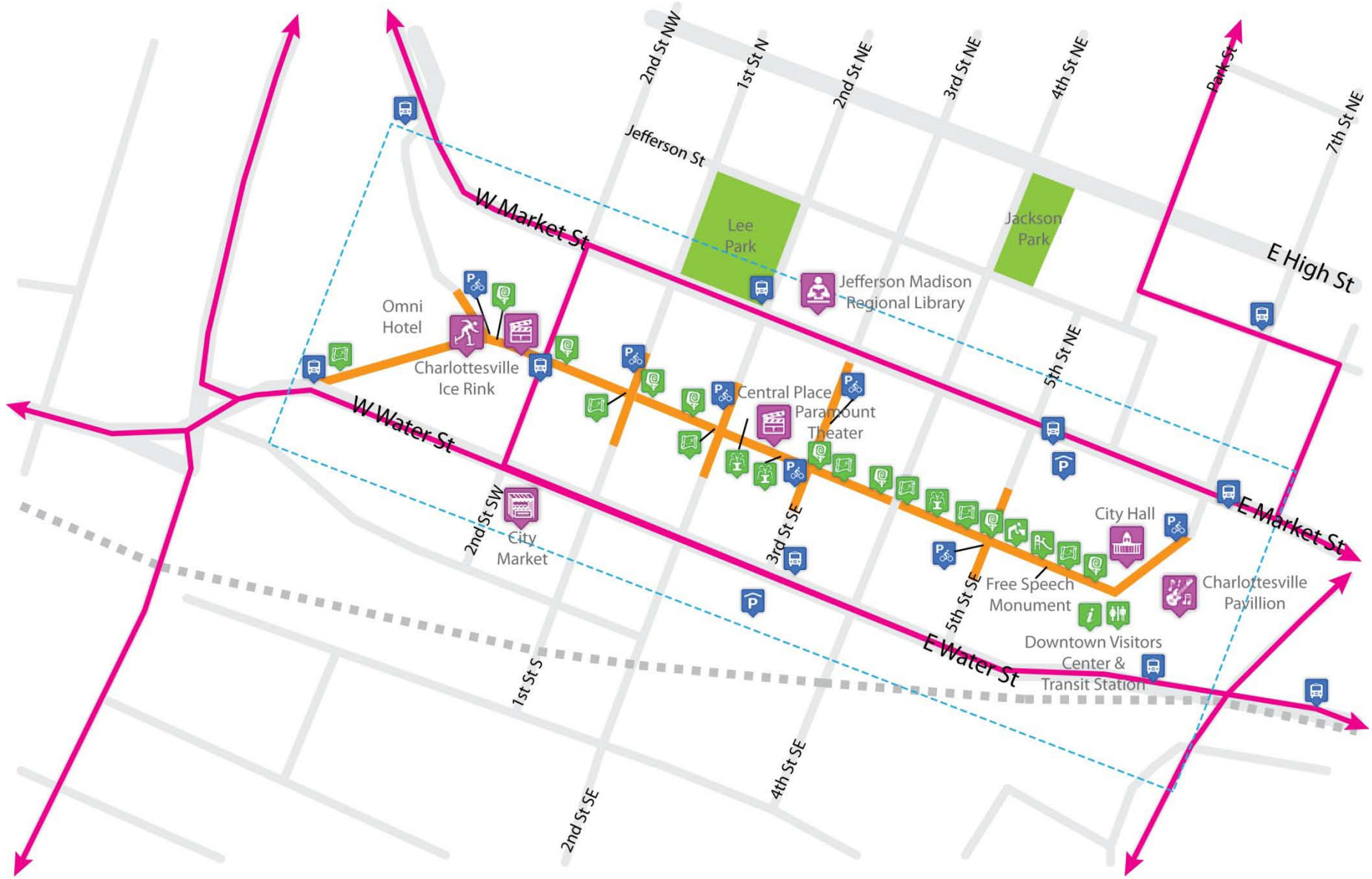
Today, the Downtown Mall has commercial rental rates from \$18-\$22 per square foot, a low vacancy rate of 1.04%, and a pedestrian count of 380-1,250 people per hour, depending on weather, time of day, and time of year. A case study of the Downtown Mall was featured in Harvey Rubenstein’s *Pedestrian Malls, Streetscapes, and Urban Spaces*. In addition, Charlottesville is consistently ranked highly for livability, health, and recreation by national publications such as *Forbes*, *Men’s Health*, *Southern Living*, *Money*, and *Outside* (City of Charlottesville, n.d.).

CHARLOTTESVILLE ²⁵	
Area:	10.3 sq mi
Population:	43,475
Density:	4,220.9/sq mi
Demographics:	69.56% White, 22.22% African American, 0.11% Native American, 4.93% Asian, 0.03% Pacific Islander, 1.02% Other
PEDESTRIAN ZONE: DOWNTOWN MALL	
Year Opened:	1976 ²⁶
Length:	2,145 ft ²⁷
Width:	70 ft ²⁸
Retail Businesses:	120+ ²⁹
Food Businesses:	30 ³⁰
Residential:	1,248 Units ³¹
Pedestrian Count:	380-1,250/hour ³²
Commercial Rents:	\$18-\$22/sq ft ³³
Vacancy Rate:	1.04% ³⁴
OBSERVED ELEMENTS OF SUCCESS*	
Accessibility:	Good
Use:	Good
Design:	Good
Comfort:	Excellent
*for ratings details see Appendix E	



Downtown Mall - Charlottesville, Virginia

FIGURE 37: Downtown Mall and adjacent areas
 (Note: for map key see Appendix A)



Downtown Mall - Charlottesville, Virginia

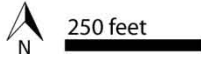


FIGURE 38: Downtown Mall amenities and attractions
 (Note: for map key see Appendix A)

Accessibility – The Downtown Mall is accessible by pedestrians from at least 15 street entrances, many of which are also partially pedestrianized. There are about 18 staple racks available for bicycle parking located at the west and east ends of the mall and at five street entrances to the mall. Transit access is provided via eight bus stops within one or two blocks of the mall, one stop is directly on the mall at 2nd Street SW and a transit center is located at the east end of the mall (**FIGURE 39**). Bus service connects to the University of Virginia, approximately two miles from the mall, and to other parts of the city. Automobile access is provided by two streets that cross the Downtown Mall at 2nd Street SW and 4th Street SE. These two crossings include significant traffic calming measures such as stop signs and speed bumps giving priority to pedestrians. There are two major public parking garages and one garage at the Omni Hotel for public use within one block of the mall, providing about 1700 parking spaces. In addition, there are several surface parking lots and most adjacent streets allow on-street parking (**FIGURE 38**).

Use – There are currently about 1,248 residential units within downtown Charlottesville. The majority of the buildings along the Downtown Mall are mixed use with restaurants and shops on first floors and residential units and offices on upper floors. There are more than 120 shops and 30 restaurants located along the Downtown Mall. The majority of commercial businesses are local with a few national chains, such as Urban Outfitters and Five Guys Burgers. Food establishments provided about 34 sections of sidewalk seating along the front edges of buildings and in the center of the mall. The primary attractions along the Downtown Mall (from west to east) include the Omni Hotel, the Charlottesville Ice Park, Regal Cinemas, the Jefferson Theater, the Paramount Theater (**FIGURE 40**), the Downtown Visitors Center, and Charlottesville Pavilion. In addition, Charlottesville City Hall is located on the east end of the mall. Additional nearby attractions include the Jefferson Madison Regional Library on East Market Street (one block from the mall) and the Saturday city market on East Water Street (**FIGURE 38**).

Design – The Downtown Mall is located in the heart of downtown Charlottesville. The majority of the buildings along the mall are three stories high (about 30 feet) and they are located along a street that is 70 feet wide (**FIGURE 42**). Approximately 100 large trees line the entire length of the mall including those on pedestrianized sections of side streets. Trees are arranged in clusters shifting from the left to the right side of the mall so the pedestrian walkway weaves back and forth through the mall. The historic character of buildings adds visual interest to the Downtown Mall. Public seating consists of about 19 pairs of chairs bolted together and to the ground. The entire Downtown Mall has numerous amenities, including a small playground, a drinking fountain, numerous works of public art, a large chalk



FIGURE 39: Downtown Visitors Center & Transit Station



FIGURE 40: Paramount Theater

board wall (**FIGURE 41**), several small fountains and one large fountain in the central plaza, some historical markers, and public restrooms within the transit center. There are wayfinding maps and directional signs at the intersection of every street and at both ends of the mall. Lighting is provided by about 112 pedestrian-scale lights throughout the mall.



FIGURE 41: Free Speech Monument

Downtown Mall - Charlottesville, Virginia
Block between 1st Street N and 2nd Street NW



FIGURE 42: Downtown Mall street section

Comfort – A large number of trees provide ample opportunities for shade. The entire Downtown Mall is very clean and well-maintained by the city. Overall, the amenities, attractions, historic character, level of maintenance, and the presence of so many trees make the Downtown Mall a very attractive and comfortable place to be (FIGURE 43).

What People Said	
Users	Creators
“It’s a vibrant, communal gathering place.”	“It has a welcoming ambiance.”
“It’s packed on Friday nights.”	“People like being on the mall and participating in community.”
“It’s an example of how to make downtowns vibrant.”	“It was a brave move by Charlottesville to remove cars on Main Street.”
“There is community, it’s social, and good for people watching.”	“The more people we have living down here, the more successful we will be and the more we will be able to sustain what’s here.”
“It’s good for kids, families, and conversation.”	“There needs to be better handling of the panhandling and homeless issue.”



FIGURE 43: Downtown Mall



Case Study #4: PEARL STREET MALL – BOULDER, COLORADO, USA

Boulder’s Pearl Street Mall was officially completed and dedicated on August 6, 1977. The mall was developed as an attempt to revitalize Boulder's downtown. The mall is four blocks (1455 feet) in length, stretching from 11th Street on the west end to 15th Street on the east end (FIGURE 44). The street is 70 feet wide, except in the central plaza where the space is 185 feet wide.

Boulder frequently ranks very high in terms of livability, health, and recreation, and has been featured numerous times in publications such as *USA Today*, *Forbes*, *Time*, *the Wall Street Journal*, *National Geographic*, and *Bicycling*, to name a few (Downtown Boulder, Inc., n.d.).

BOULDER³⁵

Area:	25.7 sq mi
Population:	97,385
Density:	3,947/sq mi
Demographics:	88.0% White, 0.9% African American, 0.4% Native American, 4.7% Asian, 0.1% Pacific Islander, 3.2% Other

PEDESTRIAN ZONE: PEARL STREET MALL

Year Opened:	1977 ³⁶
Length:	1455 ft ³⁷
Width:	70 ft ³⁸
Retail Businesses:	60 ³⁹
Food Businesses:	35 ⁴⁰
Residential:	~200 Units ⁴¹
Pedestrian Count:	~1473-2327/hour ⁴²
Commercial Rents:	\$25-\$42/sq ft ⁴³
Vacancy Rate:	2% or less ⁴⁴

OBSERVED ELEMENTS OF SUCCESS*

Accessibility:	Good
Use:	Fair
Design:	Excellent
Comfort:	Excellent

*for ratings details see Appendix E



Pearl Street Mall - Boulder, Colorado



FIGURE 44: Pearl Street Mall and adjacent areas
 (Note: for map key see Appendix A)



Pearl Street Mall - Boulder, Colorado

FIGURE 45: Pearl Street Mall amenities and attractions
 (Note: for map key see Appendix A)

Accessibility – The Pearl Street Mall is accessible to pedestrians from entrances at its western and eastern ends, and also from as six entrances at connecting streets. Bike parking is provided at approximately 33 staple racks at the entrances on Broadway Street, 13th Street, and 14th Street. In addition, there are two bike share stations – one at each end of the mall (**FIGURE 46**). Transit is accessible through a dozen bus stops within 1,000 feet of the mall, including the Boulder Transit Center which is just one block away. It is important to note that the City of Boulder provides free transit passes to all downtown employees. Automobiles can cross the Pearl Street Mall on every cross street. Some traffic calming measures have been implemented for the crossings at 13th and 14th streets. There are five parking garages within one block of the mall and there is also ample on-street parking on most adjacent and connecting streets (**FIGURE 45**).

Use – There are currently about 200 residential units within downtown Boulder both in and around the Pearl Street Mall. The majority of buildings along the mall are mixed use with restaurants and shops on first floors and residential units and offices on upper floors. There are more than 60 shops and 35 restaurants located along the Pearl Street Mall. The majority of commercial businesses are local with a few national chains, such as Old Chicago, American Apparel, Ben & Jerry’s, Patagonia, Billabong, and the Cheesecake Factory. About 14 sections of sidewalk seating for food establishments were observed along front edges of buildings. The central plaza is used for events and entertainment. The primary attractions close to the Pearl Street Mall include Boulder Theater (1 block away), Hotel Boulderado (1 block away), Boulder Creek Market (3 blocks away), Central Park and Boulder Creek Path (3 blocks away), Boulder City hall (3 blocks away), Boulder Dushanbe Tea House (4 blocks away), Boulder Public Library (1/2 mile away), and the University of Colorado (1/2 mile away) (**FIGURE 45**).

Design – The Pearl Street Mall is located in the heart of downtown Boulder. The majority of buildings along the mall are three stories high (about 30 feet) and are located along a street that is 70 feet wide (**FIGURE 49**). There are more than 100 large trees and dozens of planters along the entire length of the mall. Most buildings have a historic character that adds visual interest. The primary landmark building is the Boulder County Courthouse located on the central plaza of the mall (**FIGURE 47**). There are about 40 benches distributed throughout the mall with a larger number (15) on the block between 11th and Broadway and with a decreasing number per block as you travel east. There is also seating on many ledges surrounding tree and flower beds and a number of movable chairs near the children’s play fountain. The entire Pearl Street Mall has numerous amenities, including two playgrounds, a drinking



FIGURE 46: Boulder bike share station



FIGURE 47: Boulder county courthouse

fountain on each block, two sculptures, three fountains including the children's play fountain (**FIGURE 48**), several historical markers, and a public restroom on the central plaza. There are also five information kiosks with maps for wayfinding throughout the mall in addition to one large and one small information booth located in the central plaza. There are about 53 pedestrian-scale lamps available to light the mall at night.

Pearl Street Mall - Boulder, Colorado
Block between 13th Street and Broadway Street



FIGURE 48: Children's play fountain

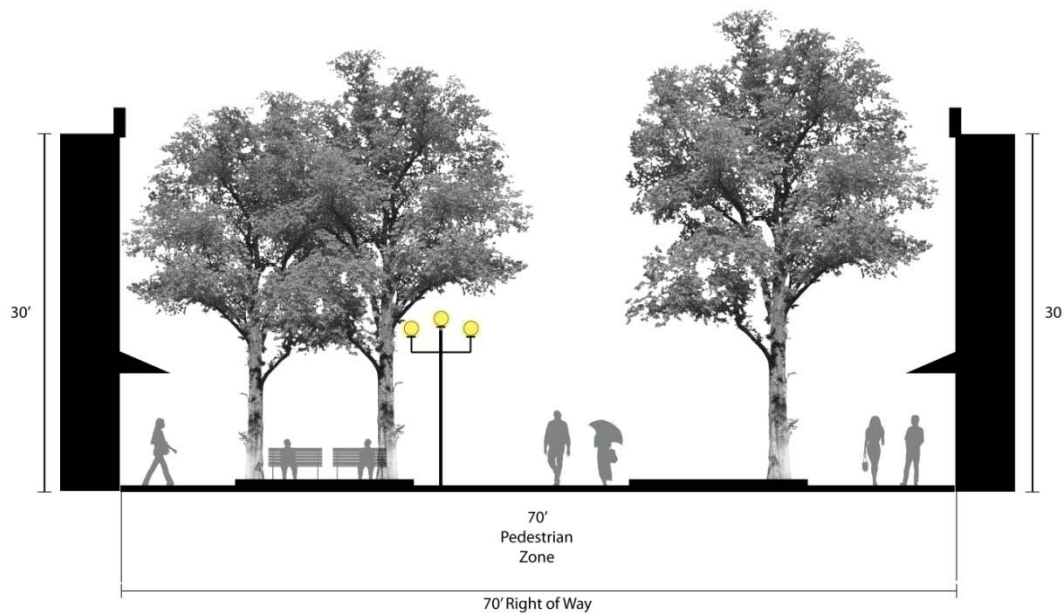


FIGURE 49: Pearl Street Mall street section

Comfort – The large number of trees provide ample shade. The entire Pearl Street Mall is very clean and well-maintained by the city and downtown business association. Overall, the amenities, historic character, level of maintenance, and presence of so many trees make the Pearl Street Mall very attractive and comfortable (**FIGURE 50**).

What People Said

Users

“I like the proximity to nature and the relaxed atmosphere.”

“It is very welcoming and open.”

“There is a lot going on. There are shops, entertainment, restaurants, and views of the mountains.”

“There are a lot of homeless people.”

“It can get crowded and parking is hard to get.”

Creators

“It’s seen by visitors as more of a family gathering social area versus a shopping area.”

“It’s not a real broad space, it’s fairly narrow, so it feels cozy.”

“The city and the county are committed to keeping this as the heart of downtown.”

“This downtown area is world class. People from all over the world come to see this.”

“It’s successful by not just having businesses, but [by] having retail, hospitality, residential, and professional [opportunities].”



FIGURE 50: Pearl Street Mall

OVERALL FINDINGS

Users – The overall experience of users in all case study areas was overwhelmingly positive with 76% of respondents characterizing the pedestrian experience as being very good. The remaining 24% of respondents felt the experience was either good or neutral, meaning it was neither good nor bad (**FIGURE 51**).

In terms of overall success factors among users (**FIGURE 52**), elements related to use (shops, restaurants, attractions, entertainment, etc.) were found to be most important, making up 38% of responses. The second most important category mentioned was comfort (weather conditions, maintenance, and how a space makes people feel). The comfort category was associated with 30% of responses. The third most mentioned category was design (where the pedestrian area is located, how space is laid out, how the space looks, what types of amenities it has, etc.). Elements categorized under design made up 19% of responses. Finally, accessibility, which includes pedestrian, bicycle, transit, and automobile access, was the least noted factor of success with only 13% of responses.

Creators – Among creators, there was consensus that pedestrian areas provide users with a great pedestrian experience, and they used words such as “pleasant,” “wonderful,” and “freeing” when describing these spaces.

For creators’ overall factors of success, use was found to be most important (38% of responses) just as it was with users. However, unlike users, the second most important category was design, comprising 30% of responses. Accessibility and comfort were seen as least important among creators with 17% mentioning factors of accessibility and only 15% mentioning comfort. Thus, creators felt comfort was only half as important to the success of pedestrian areas as users.



FIGURE 51: Overall experience by pedestrian area users

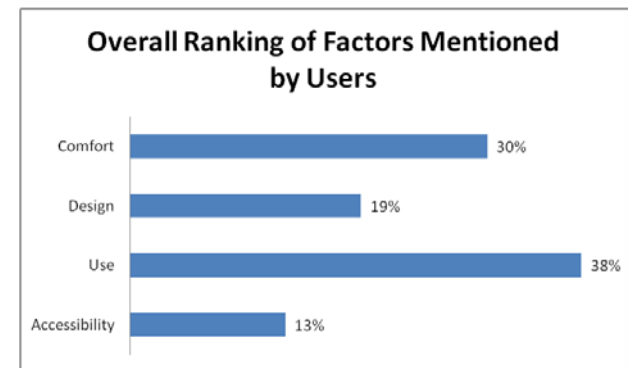


FIGURE 52: Overall ranking of factors mentioned by users of pedestrian areas

Accessibility

Users – Among users that mentioned accessibility as an important factor of success most were concerned with pedestrian access, making up 51% of factors mentioned. Users mentioned it was good that pedestrian areas were walkable and car-free. They also brought up concerns about pedestrian areas being too crowded and congested. The second most mentioned category of accessibility related to transit, comprising 26% of factors mentioned. These users emphasized the importance of having good transit leading to pedestrian areas. They also expressed a need for more transit and better service to and from pedestrian areas. Access to automobile parking was brought up in 16% of accessibility related responses and these were mostly related to complaints regarding scarcity of parking. The final category of accessibility factors these users discussed was related to bicycle access, making up 7% of factors mentioned. In each of these cases, users felt it was important to have bike access to the pedestrian areas (**FIGURE 53**).

The transportation modes used to gain access to pedestrian areas were pretty evenly distributed between transit (32%), car (28%), and walking (28%) for users. Bicycles were used least by users, with only 12% of users mentioning this transit mode (**FIGURE 54**).

Creators – Like users, creators that mentioned accessibility as an important factor of success also felt pedestrian access and transit access were most important. But, they did not differentiate between the two by the same wide margin that users did. Unlike users, creators placed a stronger emphasis on the need for automobile parking. The importance of bike access, bike parking, and traffic calming measures were also mentioned by some creators.

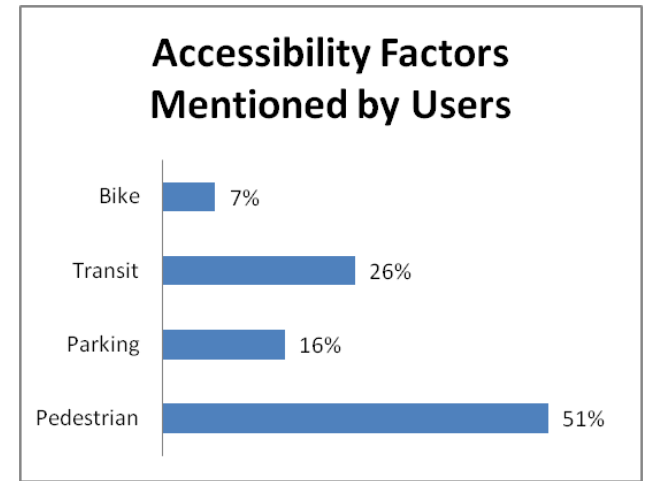


FIGURE 53: Accessibility factors mentioned by pedestrian area users

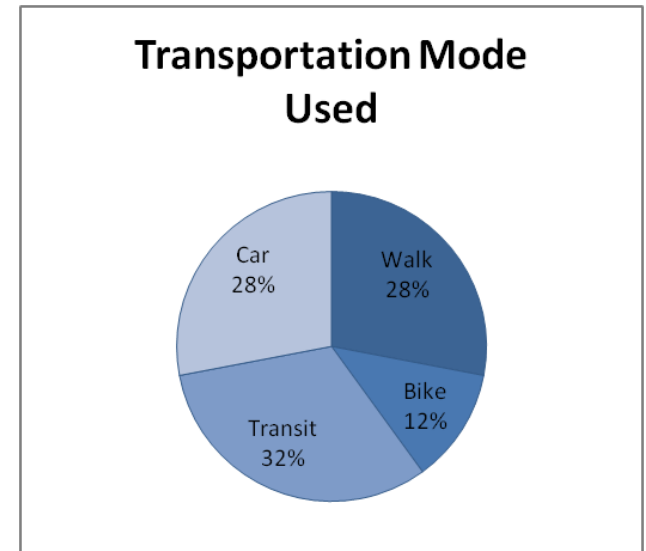


FIGURE 54: Transportation mode used by users to get to the pedestrian areas

Use

Users – The use factors that users were most concerned with fell under the shopping/retail category, making up 40% of responses. These respondents felt the presence of retail stores was the primary reason that pedestrian areas were attractive to people and why they were successful. Users attributed the other categories – dining/entertainment and attractions/gathering places – with equal weight at 30% each. The dining/entertainment category includes restaurants, cafes, coffee shops, movie theaters, music venues (indoor and outdoor), and street performers. Of these elements, the presence of restaurants was mentioned most frequently. The attractions/gathering places category includes cathedrals, museums, and amusement parks, though none of these were specifically mentioned. However, the majority of users felt it was important for pedestrian areas to have various attractions, in general. Gathering places refer to areas such as public squares and libraries. This category also includes tourist attractions (**FIGURE 55**).

Creators – Use factors mentioned by creators were presented in more general terms. Creators spoke about how a pedestrian area should have activities, attractions, entertainment, events, food, and retail. Unlike users, creators felt attractions were most important, followed by dining, and then shopping. Creators also mentioned the need for residential properties and offices within or near pedestrian areas, and this was actually more important than shopping or dining to them. The presence of residential properties and offices was not mentioned by users at all.

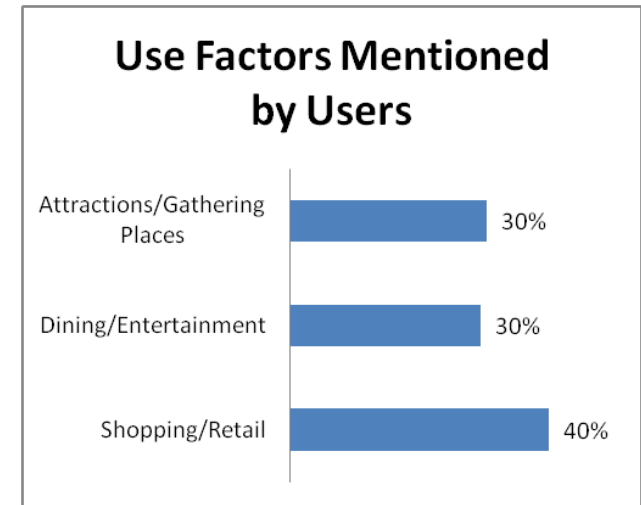


FIGURE 55: Use factors mentioned by pedestrian area users

Design

Users – The most important design-related factors mentioned by users fell into the category of amenities, making up 36% of responses. Amenities mentioned include elements such as seating, trees, restrooms, and pavement treatments. The amenity most frequently mentioned by users was the importance of having places for people to sit. The second most important amenity mentioned was the importance of trees and landscaping. The next design factor most mentioned by users was in the area of visual interest, amounting to 28% of responses. These users felt that it was important for a pedestrian area to be historic and to have a unique character. After visual interest, users placed importance on pedestrian area location with 23% of responses. These respondents said pedestrian areas should be centrally located within a city, be near a university, and have proximity to nature. Space was the least mentioned category of factors by users, making up only 13% of responses. This category includes the openness of public space and how wide the street is. A number of respondents thought open spaces within pedestrian areas were desirable as well (**FIGURE 56**).

Creators – Creators agreed with users that amenities were the most important design factors. They mentioned the need for places to sit, fountains, and play areas. However, it is important to note that some creators thought it was important to put a limit on the amount of sittable space. A few creators also brought up the need for wayfinding, a factor not mentioned by users. Creators also thought location was an important design category and reflected user responses saying pedestrians area should be centrally located within a city. Creators also mirrored user views about visual interest, saying that pedestrian areas should be historic and have a unique character. Finally, there was only one mention that green space was needed within pedestrian areas.

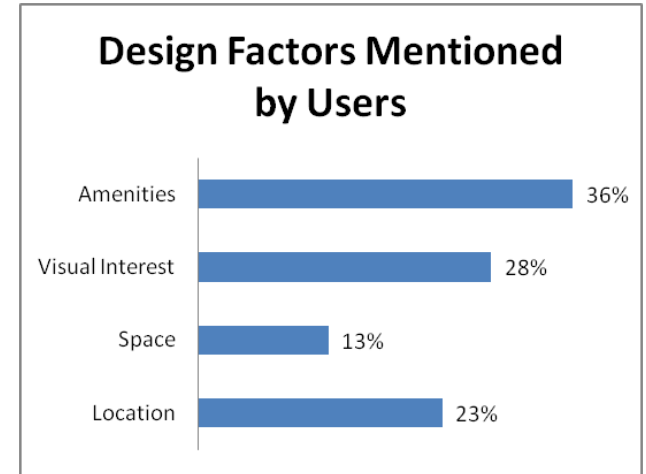


FIGURE 56: Design factors mentioned by pedestrian area users

Comfort

Users – The overwhelming majority (71%) of comfort-related factors mentioned by users fell under the category of feel. This category is comprised of a broad range of factors including whether a pedestrian area feels relaxing, vibrant, or fun; whether it makes people feel safe, welcome, or part of a community; and whether it is too noisy, too expensive, or has too many panhandlers. Within feel, the majority of elements mentioned are related to the presence of people. Users mentioned the importance of having other people within the pedestrian areas and how an increase in people within an area over time is a sign of success. Other major factors mentioned by users include concerns about the presence of homeless, the affordability of shops, the longevity of businesses, how relaxing it is, and the amount of family friendliness. The second highest (23%) category of comfort-related factors that users mentioned was maintenance. Maintenance includes factors such as cleanliness, the condition of buildings, and construction activity. The primary concern of users in regards to maintenance involves the buildings within the pedestrian area: whether buildings had been added or removed and whether they needed to be repaired. Users were also concerned with the amount of litter present within pedestrian areas and when construction would be completed. The final and least mentioned (6%) category under comfort relates to weather conditions. In this category, users were primarily concerned with the amount of shade available within the pedestrian area. They also mentioned the importance of having good weather conditions, in general (**FIGURE 57**).

Creators – Unlike users, creators placed an equal amount of emphasis on the categories of feel, maintenance, and weather. They only placed a slightly higher degree of importance to maintenance than to feel. In terms of maintenance, creators felt it was important that pedestrian areas be well maintained in general. In discussing feel, creators spoke very broadly about whether or not a particular pedestrian area is comfortable. Finally, they brought up the importance of having good weather as a contributing factor to the feeling of comfort within a pedestrian area.

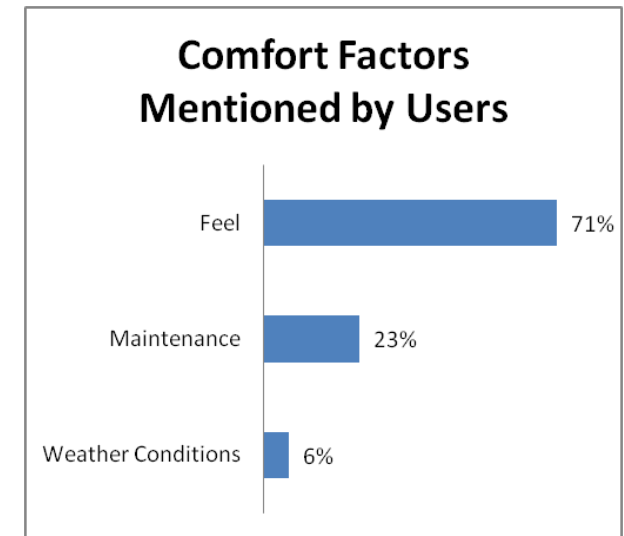


FIGURE 57: Comfort factors mentioned by pedestrian area users

DISCUSSION

The four pillars framework (accessibility, use, design, and comfort) derived from the literature review worked well in categorizing data collected for each case study site included in the present study. This framework is an important tool in determining key elements associated with pedestrian area success. The framework was also very useful in evaluating differing views of users and creators in a variety of contexts. This framework may also serve as a useful tool for city planners and designers interested in evaluating success of existing pedestrian areas or for planning new pedestrianized spaces.

CULTURAL DIFFERENCES

Since this study involved case studies in the US and Europe, a number of cultural differences were revealed and it is important to keep these differences in mind when evaluating results.

Accessibility – Users and creators in the US were much more concerned with automobile parking than their European counterparts. In fact, parking was only mentioned by one European user as being an issue in Munich’s pedestrian area. In addition, when users were asked about how they got to the pedestrian area, not one person in Europe said they arrived by car, whereas the overwhelming majority of users in Boulder said that they drove (**FIGURE 58**). This is perhaps not surprising given that the US is more automobile dependent. Conversely, access to good public transportation was much more important to users in Europe versus those in the US (**FIGURE 59**). Only one user in Boulder felt better transit was needed to access the pedestrian area. In addition, not only were interview subjects more concerned with public transportation in Europe, but the cities of Copenhagen and Munich are both currently working on significant upgrades to their existing transit infrastructure. It is also interesting to note that Copenhagen was the only city where people said they rode a bicycle to get to the pedestrian area.

Use – Differing views on tourism, entertainment, and cafes were particularly evident among users. In the US, users were not concerned about pedestrian areas being touristic, were more interested in entertainment, and did not mention cafes. European users, on the other hand, frequently complained about pedestrian areas being too touristic, did not mention entertainment as being important, and felt cafes were necessary components of successful pedestrian areas. Again, these findings are not so



FIGURE 58: Parking garage on 15th Street in Boulder



FIGURE 59: Streetcar on Theatinerstrasse in Munich

surprising given that pedestrian areas are treated more like tourist destinations in the US than they are in Europe; that pedestrian areas in the US contain more entertainment-related elements, such as movie theaters and music venues, than those in Europe; and that cafe culture is much stronger in Europe than it is in the US.

Design – There were different views expressed about wayfinding, lingering, amenities, and trees in pedestrian areas. In the US, creators were very concerned with wayfinding and their cities had employed extensive wayfinding programs (**FIGURE 60**). In Europe, however, wayfinding was kept to a minimum and almost seen as unnecessary since pedestrian areas are so well established and European people are more likely to see the city center as a place to go for shopping, restaurants, and other services. In Copenhagen, in particular, the city planner explained that even though some businesses were calling for more wayfinding infrastructure the city was more concerned with maintaining the unique aesthetic of the city, saying that, “If there is too much signage, it all starts to yell and people start to drown in information. So, we like to have the minimum amount of advertising and signage – as little as possible.” In Europe, wayfinding programs tend to be more focused on directing people to the city center than directing people within it.

Another major cultural difference was observed when it came to attitudes about people lingering in pedestrian areas. In Europe, creators were working to create places that would attract people and that would encourage them to stay in those places as long as they wanted to. Creators in the US seemed to have the opposite attitude in that they wanted to attract people but didn’t want them to stay for too long. Creators in Charlottesville, for example, said their police chief had at one point removed all public seating in the entire pedestrian mall to stop people from lingering. Luckily, the city quickly reversed that action. Nevertheless, it shows just how strong feelings are against people lingering. In Boulder, a business association member explained that city police will tell certain “undesirable” people to “move on” if they linger for more than 20 minutes. This issue of “undesirables” is discussed more in the comfort section to follow.

In addition to the differences on wayfinding and lingering, there were also differences when it came to the amount of amenities and trees within pedestrian areas. In the US, pedestrian areas often seemed crammed with a host of amenities, including playgrounds, public art, signage, drinking fountains, interactive art, clocks, planters, historical markers, etc. (**FIGURE 61**). In Europe, amenities were more



FIGURE 60: Wayfinding signage in Downtown Boulder



FIGURE 61: Playground on Boulder's Pearl Street Mall

limited to public plaza areas where there are often only fountains, seating, and an occasional statue (**FIGURE 62**). Just as with amenities, there are many more trees within pedestrian areas in the US than in Europe where trees are mostly located in public plazas (**FIGURE 63**). Since pedestrian areas are wider, surrounding buildings are lower, and streets are straighter in the US, trees are more necessary to define the space and provide shade. In Europe, on the other hand, narrower, meandering streets flanked by mid-rise buildings provide protection from the weather without such a strong dependence on trees.

Comfort – In conjunction with concerns in the US about people lingering within pedestrian malls, there were also frequent mentions by both users and creators in the US about the presence of homeless and panhandlers. In Europe, no one mentioned this. However, users and creators in Charlottesville and Boulder mentioned how homelessness has been, and continues to be, a problem they are contending with. A number of factors could be at play here. There may be a cultural difference in how disenfranchised members of society are viewed or this may be explained by differences in economic and social policy between the US and countries in Europe. In any case, there is concern in the US that the presence of homeless people will negatively affect people’s sense of comfort and deter them from coming to the pedestrian area.

In addition, respondents from case study cities in the US were much more concerned with maintenance than respondents in the European cities under study. In the US, pedestrian areas were very clean and well maintained perhaps to an excessive level. They also posted lists of rules at each pedestrian entrance. The rules in Boulder are particularly extensive and expressly prohibited bikes, skateboards, rollerblades, pets, Frisbees, and “aggressive” panhandling (**FIGURES 64-67**). In Charlottesville, bicycle riding, skateboarding, and roller skating are prohibited and they also have a warning sign and chains to prevent people from touching the water in the central plaza fountain. As was discussed in the literature review, William Whyte felt that water should be made accessible to people. In Europe, the only prohibitions in Copenhagen and Munich are related to bicycle riding within pedestrian areas. Further, European cities did little beyond regular trash pickup and maintenance. In Copenhagen, there was an excessive amount of litter that users complained about and creators also mentioned this was a problem that needed to be addressed.

The final major cultural difference observed concerned the weather. In the US, a number of creators interviewed mentioned weather conditions had a significant impact on the level of pedestrian activity



FIGURE 62: Fountain in Copenhagen's Gameltorv



FIGURE 63: Vegetation in Charlottesville's Downtown Mall

within the pedestrian areas and even on the level of success. In Europe, on the other hand, weather was only considered a minor factor.



FIGURE 64: Pedestrian area rules sign in Copenhagen



FIGURE 65: Pedestrian area rules sign in Munich



FIGURE 66: Pedestrian area rules sign in Charlottesville



FIGURE 67: Pedestrian area rules sign in Boulder

SUMMARY OF VIEWS

While both users and creators expressed that elements related to use were most important, their views diverged pretty significantly in the areas of accessibility, design, and comfort. Whereas users thought comfort was the second most important factor of success, creators felt that design was more important. This finding is especially striking since comfort was classified as the least important of the four categories according to creators. Of course, it is to be expected that those involved with the creation and maintenance of a public space such as a pedestrian mall would be primarily concerned with use and design. Further, the creators would likely argue that the work they do within areas of use and design contribute to the comfort of users. However, this large disconnect between priorities suggests that creators may need to increase their awareness of people's needs when it comes to creating comfortable public spaces. As one planner put it when speaking about the Strøget in Copenhagen: "It is successful because there are a lot of people there, people are attracted to the place, and they are there throughout the day any time of the year." The findings from this study reveal that one of the primary reasons people are attracted to a public space is that it makes them feel comfortable.

VIEWS OF ACCESSIBILITY

Users and creators both emphasized the importance of having easy pedestrian access to a pedestrian zone. Perhaps not coincidentally, each case study area had excellent pedestrian access. However, the difference in views between users and creators regarding the need for good public transportation is interesting. Of course, the differences observed may be influenced by differences in the cultural views of respondents over public transportation and automobile access in the US and Europe. Nevertheless, creators should take note that users want better transit access as it is also an important element brought forth in the literature review by Jeff Speck and J.H. Crawford, among others.

Complaints from users about pedestrian areas being too crowded was identified by William Whyte as a common occurrence. He argues that people always complain about congestion even though they themselves continue to frequent the place and he observed that large numbers of people in a place tends to attract more people (Whyte, 1988). It seems likely that creators understand this, since none of them mentioned that congestion was a problem.

Even though issues related to biking were most prominent in Copenhagen, all of the other cities provide access for bikes and bicycle parking in their pedestrian areas (**FIGURE 68**). As authors such as Jeff Speck have pointed out, biking is an area that is growing and will need further attention in the future.

It seems the parking issue warrants further examination beyond the scope of this study, particularly in the US. The literature review highlighted the importance of good parking strategies. The current study revealed that users and creators were both concerned about parking in the US. Interestingly, in Boulder where there are more parking garages near the pedestrian area than in any other city studied, the people complained the most about parking. This may present more of a problem in Boulder since the Pearl Street Mall may be more reliant on tourists driving cars when compared to the other cities. Alternately, perhaps perceptions about parking do not match the reality of the situation. In any case, the City of Boulder is doing some interesting things when it comes to parking, such as the program to provide free transit passes to downtown employees and using parking revenue to help fund the downtown business association. In Charlottesville, recently enacted policies regarding parking including the reinstatement of parking minimums for downtown development and an ongoing reliance on free on-street parking around the pedestrian area may need to be reconsidered to maintain the vibrancy of downtown.

VIEWS OF USE

Users and creators had significantly different views on use. Users felt shopping was the most important use within a pedestrian area, followed by dining and attractions. Creators, on the other hand, thought attractions were most important, followed by residential properties and offices, dining, and then shopping. This suggests a possible disconnect between users and creators, especially the difference in importance between shopping and attractions. Users seemed to be primarily interested in shopping when coming to pedestrian areas, whereas creators seemed to feel attractions were the most important things needed to get people to come to pedestrian areas. Further, creators felt shops were least important. Since the majority of creators interviewed were city planners, they were likely more focused on attractions that may encourage tourists to visit downtown. If more business associations had been interviewed, perhaps there would have been a greater emphasis on shopping. However, if users think attractions are the least important elements, perhaps creators should shift their focus more toward shopping, dining, and entertainment options. Of course, these results could also indicate users simply



FIGURE 68: Bike parking in Munich's Marienplatz

are unaware of the importance of attractions to their own experiences in pedestrian areas. This is probably also the case with residential properties and offices. Users did not mention them at all, but creators found those uses to be very important. This may relate to a difference in creators' knowledge about the importance of including a mix of uses in pedestrian areas such as residential, retail, office, food, and entertainment. This is vital to making a pedestrian area successful as discussed earlier in the literature review. Users may be primarily interested in shopping, but they may not fully recognize the multitude of elements that need to come together to make a successful public space. However, if any one of those elements – food, for example – were missing, there probably wouldn't be as many people there to help ensure the area's success.

VIEWS OF DESIGN

While users and creators generally agreed on the importance of various design factors, a significant difference was present when it came to the availability of places to sit. Users felt that having places to sit was the most important amenity in a pedestrian area. This coincides with research discussed in the literature review by William Whyte and Jan Gehl that emphasized the importance of sittable space. Creators agreed this was important, but they did not focus on this nearly as much. Additionally, several creators in Charlottesville, in particular, felt it was necessary to limit the amount of public seating. In fact, in Charlottesville the majority of outdoor seating was reserved for the exclusive use of restaurant patrons, was chained off from the public, and took up a large area in the middle of the street. Observations indicated that the amount of public sittable space was particularly limited in both Charlottesville and Munich to the point that it made it very challenging to conduct interviews or find willing respondents, since most people were simply passing through (**FIGURE 69**).

Another important difference between the responses of users and creators relates to visual interest. Even though it was classified as the second most important category under design for users, visual interest was barely mentioned by creators. This is significant since having a visually interesting public space encourages people to want to use it, as discussed in the literature review. Creators need to ensure that they do not neglect visual interest in pedestrian areas because it directly contributes to people's feelings of comfort.



FIGURE 69: Public seating in Charlottesville's Downtown Mall

A final interesting difference revealed in this research with respect to design has to do with wayfinding. Not one user mentioned the need for or the presence of wayfinding signage. However, several creators mentioned it, particularly in Charlottesville and this was probably due to a new wayfinding program recently instituted there. Users may not have mentioned wayfinding signage, because that is something most users do not think about regularly, with the possible exception of tourists.

VIEWS OF COMFORT

Of all of the factors examined in this study, comfort turned out to be the most important. The large emphasis placed on the presence of other people and the need to feel safe, relaxed, welcome, and part of a community expressed by users confirmed what was revealed through the literature review. The findings in this category also revealed some negative aspects associated with certain pedestrian area, including feelings about the presence of homeless people, shops being too touristic or expensive, problems with litter, and high noise levels. They also showed that weather was less important to users than to creators. As long as there is sufficient shade and protection from wind and associated weather conditions users were satisfied with the pedestrian area. Ultimately, the way a public space makes people feel determines whether or not they will visit, spend time, and return there. Since the creators interviewed for this study did not place as much emphasis on comfort-related factors as the users did, this is likely something that requires additional consideration by creators when developing and managing public spaces including pedestrian areas.

RECOMMENDATIONS

During the interviews of city planners and business association members at each case study site, many important insights were shared regarding how policy, planning, and design may best be directed to create successful pedestrian areas in other cities. Below, a selection of creator responses to the following interview question is provided:

If another city wanted to achieve similar success with a new pedestrian mall, what characteristics do you think are most important?

Creator Recommendations

Copenhagen

“You need to use an area where people are actually going, where the people are. You can’t make a shopping area grow up in the middle of nowhere. Start with a small area (near a school or library or shopping) and grow it over time. Start with something you can build on.”

Munich

“It is essential that the pedestrian zone is big and not disturbed by streets crossing it. The dimension of the pedestrian zone has to fit the city.”

Charlottesville

“Perseverance . . . Support from the business community is also important.”

“Having people living here is what made the difference.”

“The pedestrian piece is crucial and many cities avoid this because they are unwilling to give up their cars. It was a brave move by Charlottesville to remove cars on Main Street. The core of the city requires out of the box thinking. You need patience and will-power, and it has to be a community effort.”

Boulder

“First, it just can’t be the city. The private businesses, the community, and the public sector all have to strongly support it.”

The following recommendations were compiled by the author based on information derived from the literature review and study findings and are primarily intended for those that have been referred to as creators in this study – urban designers, urban planners, policymakers, and others involved with developing and managing pedestrian areas:

1. It is vital that all of the factors laid out in this study in the areas of accessibility, use, design, and comfort are considered when setting up and/or maintaining a pedestrian area. Specifically, the following recommendations drawn from classic literature and study observations should be considered:
 - Accessibility
 - The pedestrian area needs to be designed for the 3 mph walking scale by making everything compact and inviting. Buildings should have large first-floor windows, they should be narrow (16-20 feet wide), and there should be about 15-20 doorways for every 328 feet.⁴⁵
 - The pedestrian area should have an entrance at least every 300 feet.⁴⁶
 - Transit stops should be located at the ends of the pedestrian area and should be spaced no more than 1320 feet apart so they can be reached by foot in 5-minutes or less.
 - Policies regarding parking need to be handled carefully to allow sufficient turnover, to provide additional revenue to benefit the downtown, and to ensure that they do not discourage mixed-use development or detract from uses and activities that enliven streets.⁴⁷
 - Use
 - Types of first-floor uses should include retail, restaurants, cafes, bakeries, delis, banks, museums, art galleries, etc. Uses that are not active or that require non-transparent windows should be avoided.
 - Residential density within and near the pedestrian area should be at least 15 units per acre.⁴⁸
 - The pedestrian area should include numerous activities no more than 150 feet apart.⁴⁹

- To help bring activity to the pedestrian area, it is useful if there is a farmers market and a university nearby.
- Design
 - The pedestrian area should be located in the heart of the downtown.
 - Street width should not exceed 82 feet. Depending on building heights, streets with widths more than double the adjoining building heights need to be filled in with trees.⁵⁰
 - Streets should be funnel-like at their ends with major attractions at each end as well.⁵¹
 - Streets should meander slightly and be broken up occasionally by plazas.⁵²
 - Building heights along the pedestrian area should not exceed 44 feet (5 stories) to maintain human scale.⁵³ In addition, there should be no more than a one-story height variance between adjoining buildings.⁵⁴
 - In terms of amenities, the most important to include is sittable space. There should be one linear foot of sitting space for every 30 square feet of pedestrian area space. Seating areas can include ledges, benches (8 feet long and arranged in line or at right angles), and movable chairs.⁵⁵ Additional amenities should include fountains arranged as focal points within wider spaces such as plazas. These fountains should have accessible water, and there should also be drinking fountains, restrooms, and trees.⁵⁶ There should be a minimum of 6 trees for every 5000 square feet of space and trees should be placed 15-25 feet apart.⁵⁷
 - Provisions need to be made to ensure ample public seating within a pedestrian area so people feel comfortable and want to stay. The focus of designs and policies for these areas should encourage people to linger so that everyone can gather and community can thrive. Anything that discourages people from staying is detrimental to the success of the place.⁵⁸
- Comfort
 - All of the elements mentioned above contribute to comfort. However, it is also important to make sure distances between pedestrians remain comfortable

throughout the pedestrian area. People are most able to enjoy the company of others at a distance of 33 feet or less.⁵⁹

- Pedestrian areas should include awnings, arcades, and trees to provide shelter from the sun and rain. In addition, meandering streets and mid-rise buildings can mitigate the effects of wind.
- Be careful not to over-manage the space. Too much or too little control can harm the place. Try to strike a good balance, allowing for a unique and authentic character reflecting interests of community members. Also, be careful to avoid having too many amenities that can make a pedestrian area feel too cluttered.
- Particular attention needs to be given to elements that make people feel comfortable so they will come to a pedestrian area, stay there, and want to return frequently. Efforts should be focused on making these areas feel safe, relaxed, welcoming, and visually appealing.

2. Pedestrian areas need to be thought of primarily as public gathering places where people meet and participate in creating and maintaining (a sense of) community.
3. It is crucial that the unique local context is considered and that local individuals are involved throughout the development process to ensure there are no disconnects between what users need and want and what creators plan to implement.
4. It might also be a good idea to stop using the term “pedestrian malls” when describing downtown pedestrian areas in the US. This term implies a connection to suburban malls and makes people think primarily of shopping. Pedestrian areas are an important part of a thriving downtown and they are much more than malls. Terms such as “pedestrian zone”, “pedestrian street”, or “pedestrian area” may be more appropriate since the focus remains on people and does not automatically favor any single use over another.

CONCLUSION

This study has revealed the key elements of successful pedestrian malls fall into the categories of accessibility, use, design, and comfort. It has evaluated the importance of specific elements within those categories, showing differing views across cultures and among people that use pedestrian areas versus those that create and manage them. The most significant findings of this study are that pedestrian areas need to have shops, restaurants, and various attractions that draw users into the space.

Accommodations also need to be made so users feel comfortable within the pedestrian space so they want to stay longer and return frequently.

Having extensively evaluated various factors contributing to pedestrian mall success, this study provided a series of recommendations for urban designers, urban planners, policy makers, and others involved with creating and managing public spaces like pedestrian malls. It is the author's intention that these recommendations will prove useful in both evaluating existing pedestrian areas and making plans for new ones, especially in US cities where pedestrian malls may have been tried unsuccessfully in the past.

While this study has attempted to look at pedestrian areas from multiple angles and at multiple scales, it certainly is not comprehensive since it does not answer all of the important questions that need to be asked about pedestrian areas. As this research was being conducted, a number of areas for future research became clear. A good follow-up to this study would be an in-depth study of pedestrian mall failures. It would also be useful to pursue further study on the cultural differences between the US and Europe over such issues as acceptance and encouragement of lingering and dealing with "undesirables" within pedestrian areas. Further exploration of design issues such as the impact of building heights and street orientation (east/west vs. north/south) on the success of pedestrian areas is also needed. The affects of privatization on public space in pedestrian areas should also be looked at, as well as impacts of globalization and the presence of local versus chain stores in pedestrian areas. A comparison of attitudes and opinions of residents and visitors (local, national, and international) about pedestrian areas could also be explored. Finally, it would be extremely useful if future researchers could get an exact count of pedestrian malls (past and present) for the entire US.

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**“Cultures and climates differ all over the world, but people are the same.
They will gather in public if you give them a good place to do it.” – Jan Gehl**

“What attracts people most, it would appear, is other people.” – William Whyte

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NOTES

¹ In the US, pedestrian-only streets are commonly referred to as “pedestrian malls.” However, in Europe, they are called “pedestrian areas” or “pedestrian zones.” Therefore, these terms are used interchangeably throughout this study. See the Recommendations section for the author’s advice on terminology.

² No current, accurate count could be found of the number of pedestrian malls that were built and that remain in operation in the US. The most recent estimate comes from Baker (2010). See the Conclusion for the author’s suggestions for future research.

³ In Copenhagen, one city planner and eight patrons were interviewed. In Munich, two city planners and five patrons were interviewed. In Charlottesville, two city planners, one business association member, and four patrons were interviewed. And, finally, in Boulder, one city planner, one business association member, and eight patrons were interviewed.

⁴ See Statistics Denmark (2013)

⁵ <http://www.visitcopenhagen.com/Shopping/Stroget/382>

⁶ See Gehl & Gemzøe (1996)

⁷ See Gehl & Gemzøe (1996)

⁸ “Shop Copenhagen”. City Edition Spring/Summer 2012, pgs. 74-76. Global Blue. <http://www.global-blue.com>

⁹ http://www.tripadvisor.com/Restaurants-g189541-Copenhagen_Zealand.html

¹⁰ See Gehl & Gemzøe (1996)

¹¹ City of Copenhagen planning staff interview July 2012.

¹² See PRNewswire (2010)

¹³ City of Copenhagen planning staff interview July 2012.

¹⁴ Although a significant amount of litter was observed, no graffiti was present within Strøget, suggesting that the city’s current efforts to clean graffiti are effective.

¹⁵ See Genesis-Online Datenbank (2013)

¹⁶ See Hajdu (1988)

¹⁷ Information collected using Google Earth, April 2013.

¹⁸ Information collected using Google Earth, April 2013.

¹⁹ See Jones Lange Lasalle (2008)

²⁰ http://www.tripadvisor.com/Restaurants-g187309-Munich_Bavaria.html

²¹ City of Munich planning staff interview July 2012.

²² See Jones Lange Lasalle (2008)

²³ See PRNewswire (2010)

²⁴ CityPartner Munich email communication, May 2013.

²⁵ See US Census Bureau (2010)

²⁶ See Lucy (2002)

²⁷ Information collected using Google Earth, April 2013.

²⁸ Information collected using Google Earth, April 2013.

²⁹ City of Charlottesville - <http://charlottesville.org/Index.aspx?page=177>

³⁰ City of Charlottesville - <http://charlottesville.org/Index.aspx?page=177>

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- ³¹ City of Charlottesville planning staff interview, August 2012.
- ³² City of Charlottesville “Mall Crossing Study” (2007)
- ³³ City of Charlottesville planning staff interview, August 2012.
- ³⁴ City of Charlottesville “Retail Vacancy Report – January 2013”
- ³⁵ See US Census Bureau (2010)
- ³⁶ Downtown Boulder, Inc. - <http://www.boulderdowntown.com/visit/history-of-pearl-street>
- ³⁷ Information collected using Google Earth, April 2013.
- ³⁸ Information collected using Google Earth, April 2013.
- ³⁹ Downtown Boulder, Inc. - <http://www.boulderdowntown.com/shop-dine>
- ⁴⁰ Downtown Boulder, Inc. - <http://www.boulderdowntown.com/shop-dine>
- ⁴¹ Downtown Boulder, Inc. staff interview, August 2012.
- ⁴² Downtown Boulder, Inc. - http://www.boulderdowntown.com/_files/docs/2011-downtown-boulder-ped-count-report.pdf
- ⁴³ Downtown Boulder, Inc. - <http://www.boulderdowntown.com/business/real-estate>
- ⁴⁴ Downtown Boulder, Inc. staff interview, August 2012.
- ⁴⁵ See Gehl (2010)
- ⁴⁶ See Jacobs (1993)
- ⁴⁷ A reading of “The High Cost of Free Parking” by Donald Shoup is advised. For a summary of Donald Shoup’s advice, see Speck (2012).
- ⁴⁸ See Jacobs (1993)
- ⁴⁹ See Alexander, et al. (1977)
- ⁵⁰ See Gehl (2011)
- ⁵¹ In some cases, natural features can act as attractions. For more see Alexander, et al. (1977) & Jacobs (1993).
- ⁵² See Alexander, et al. (1977) & Jacobs (1993)
- ⁵³ See Gehl (2010)
- ⁵⁴ See Alexander, et al. (1977)
- ⁵⁵ See Whyte (1988)
- ⁵⁶ See Alexander, et al. (1977) & Whyte (1988)
- ⁵⁷ See Jacobs (1993) and Whyte (1988)
- ⁵⁸ For more details on public seating, see Whyte (1988).
- ⁵⁹ See Gehl (2010)

APPENDICES

Appendix A – Map Key

Accessibility

-  Bike Share Station
-  Bike Parking
-  Subway Station
-  Streetcar Stop
-  Bus Stop
-  Parking Garage

Use

-  Arch
-  Church
-  Theater
-  Civic
-  Courthouse
-  Ice Rink
-  Library
-  Farmers Market
-  Museum
-  Music Venue
-  University

Design

-  Clock
-  Drinking Fountain
-  Fountain
-  Play Fountain
-  Information
-  Map
-  Playground
-  Public Art
-  Statue
-  Public Restroom

OTHER

-  Study Area Boundary
-  Pedestrian Street
-  Pedestrian Passageway
-  Train Route
-  Subway Route
-  Streetcar Route
-  Bus Route
-  Primary Street
-  Secondary Street
-  Public Park
-  Public Square
-  Water
-  User Interview Number & Location

Icon design: mapicons.nicolasmollet.com

Appendix B – Observation Guides

Observation Guide – Copenhagen – 7/9/12

Quantitative

Item	Amount
Trees	31
Benches	29
Lights	About 1 overhead light every 50 ft and 20 on poles at Gameltorv and Nytorv
Trash Cans	About 1 every 100 ft with 16 by Helligaands Kirken
Street Performers	6
Sidewalk Cafes	25
Public Art	0
Bike Parking	153
Information Kiosks	2
Fountains	3
Planters	0
Public Restrooms	3
Street Crossings	4

Qualitative

Maintenance level *	Building conditions: C Street conditions: B Cleanliness: C
General Notes	<ul style="list-style-type: none"> • I noticed a number of security cameras • Markets are held at Nytorv – need to get schedule • The number of street performers depended on the day, time, and the weather • There was a raised line running down the middle of the Strøget to guide the blind. But, it didn't run through the entire thing • Need to determine the number of bike share stations • Bike parking seemed to be mostly located in plazas and side streets • Sidewalk cafes were mostly in plazas

*A=excellent, B=good, C=average, D=bad, E=poor

Observation Guide – Munich – 7/18/12

Quantitative

Item	Amount
Trees	24
Benches – movable chairs	82
Lights	152
Trash Cans	51
Street Performers	1
Sidewalk Cafes	10
Public Art	2
Bike Parking	40 (Karlsplatz & Marienplatz)
Information Kiosks	0
Fountains	4
Planters	48
Public Restrooms	0
Street Crossings	0
Additional: Transit entrances	10

Qualitative

Maintenance level *	Building conditions: B Street conditions: B Cleanliness: C
General Notes	<ul style="list-style-type: none"> • In addition to the movable chairs, there was seating on ledges around large trees • There are several arcades • There is a major bus stop at Marienplatz • There are also tram stops nearby

*A=excellent, B=good, C=average, D=bad, E=poor

Observation Guide – Charlottesville – 7/5/12

Quantitative

Item	Amount
Trees	101
Benches – sets of 2	19
Lights	112
Trash Cans	32, 9 (recycling)
Street Performers	2
Sidewalk Cafes	34
Public Art	20 – NOTE: hanging banners were temporary and should not be counted
Bike Parking – staple racks	18
Information Kiosks	8
Fountains	3
Planters	dozens
Public Restrooms	1
Street Crossings	2
Additional: Playground	1
Additional: drinking fountains	1

Qualitative

Maintenance level *	Building conditions: A Street conditions: A Cleanliness: A
General Notes	<ul style="list-style-type: none"> Transit website: www.catchthecat.org

*A=excellent, B=good, C=average, D=bad, E=poor

Observation Guide – Boulder – 8/17/12

Quantitative

Item	Block 1: 11 th -Broadway	Block 2: Broadway-13 th	Block 3: 13 th -14 th	Block 4: 14 th -15 th	TOTAL
Trees	38	29	12	27	106
Benches	15	12	8	6	41
Lights – sets of 2 & 3	14	8	16	15	53
Trash Cans	13	10	15	22	60
Street Performers	2	4	1	2	9
Sidewalk Cafes	4	2	4	4	14
Public Art	0	1	0	1	2
Bike Parking – staple racks	0	18	11	4	33
Information Kiosks - wayfinding	2	0	2	1	5
Fountains	1	0	2	0	3
Planters	dozens	dozens	dozens	dozens	
Public Restrooms	0	0	1	0	1
Street Crossings	1	1	1	0	3
Additional: playground	0	1	0	1	2
Additional: drinking fountains	1	1	1	1	4
Additional: information booth	0	0	2	0	2
Additional: event kiosks	1	2	2	2	7

Qualitative

Maintenance level *	Building conditions: A Street conditions: A Cleanliness: A
General Notes	<ul style="list-style-type: none"> • Public restroom wasn't super clean like the one in Charlottesville • Trash cans include recycling and compost • Central square has movable chairs and benches around kids fountain • There are many brick walls around planters for seating in addition to benches • bike parking was mostly located at intersections with cross streets • There seems to be every amenity you can think of here other than transit

*A=excellent, B=good, C=average, D=bad, E=poor

Appendix C – Interview Guides

Interview Guide – Pedestrian/Patron

Local Subject Number:

Overall Subject Number:

Location:

Date/Time:

Age:

Gender:

Race:

Experience

- How would you describe the pedestrian experience in this area?
- Why do you think people like this area?
- What do you like about it?
- What do you dislike about it?
- How did you get here?

Changes Over Time

- Do you know of any ways in which this area has changed over time?
- Overall, do you think there are any changes that might be made to improve this area?
 - If you were able to make any changes, what would they be?

Factors of Success

- Do you consider the pedestrian mall a success?
 - If so, why do think it is successful?
 - If not, what needs improvement?
 - If another city wanted to achieve similar success with a new pedestrian mall, what characteristics do you think are most important?

Interview Guide – City Planner

Name:

Title:

Location:

Date/Time:

Age:

Gender:

Race:

Experience

- How would you characterize the pedestrian experience in the pedestrian mall?
- Why do you think people are attracted to this space?
- How do businesses within and outside of the pedestrian mall feel about the pedestrian mall?

Maintenance & Management

- How is the pedestrian mall area managed in relation to security and events?
- How is the area maintained in terms of sanitation and upkeep?

Marketing

- Do you know if the city is doing anything to promote the pedestrian mall?
- If yes, what is being done to promote the pedestrian mall?

Support

- How is the pedestrian mall supported?
 - What role does the government play? Businesses? Private citizens or community groups?
 - Are there any public/private partnerships in place? If so, could you speak a little about these?

Interview Guide – City Planner – *continued*

City Policy

- In what ways have planners been involved with the pedestrian mall over time?
- Are there any policies that have helped in the creation and continued development of the pedestrian mall? If so, could you speak about some of these?
- Have there been any changes in policy over time? If so, please explain.

Changes Over Time

- Would you say the pedestrian mall looks the same as when it was first created?
 - What elements have changed?
 - Are there any design elements that have changed?
- Overall, do you think there are any changes that might be made to improve the pedestrian mall?
 - If you were able to make any changes, what would they be?

Factors of Success

- Do you consider the pedestrian mall a success?
 - If so, why do think it is successful?
 - If not, what needs improvement?
 - If another city wanted to achieve similar success with a new pedestrian mall, what characteristics do you think are most important?

Interview Guide – Business Association

Name:

Title:

Location:

Date/Time:

Age:

Gender:

Race:

Experience

- How would you characterize the pedestrian experience here?
- Why do you think people are attracted to this space?
- How do businesses within and outside of the pedestrian mall feel about the pedestrian mall?

Maintenance & Management

- How is the pedestrian mall area managed in relation to security and events?
- How is the area maintained in terms of sanitation and upkeep?

Marketing

- What is being done to market the pedestrian mall?

Support

- How is the pedestrian mall supported?
 - What role does the government play? Businesses? Private citizens or community groups?
 - Are there any public/private partnerships in place? If so, could you speak a little about these?

Interview Guide – Business Association – *continued*

City Policy

- In what ways have planners been involved with the pedestrian mall over time?
- Are there any policies that have helped in the creation and continued development of the pedestrian mall? If so, could you speak about some of these?
- Have there been any changes in policy over time? If so, please explain.

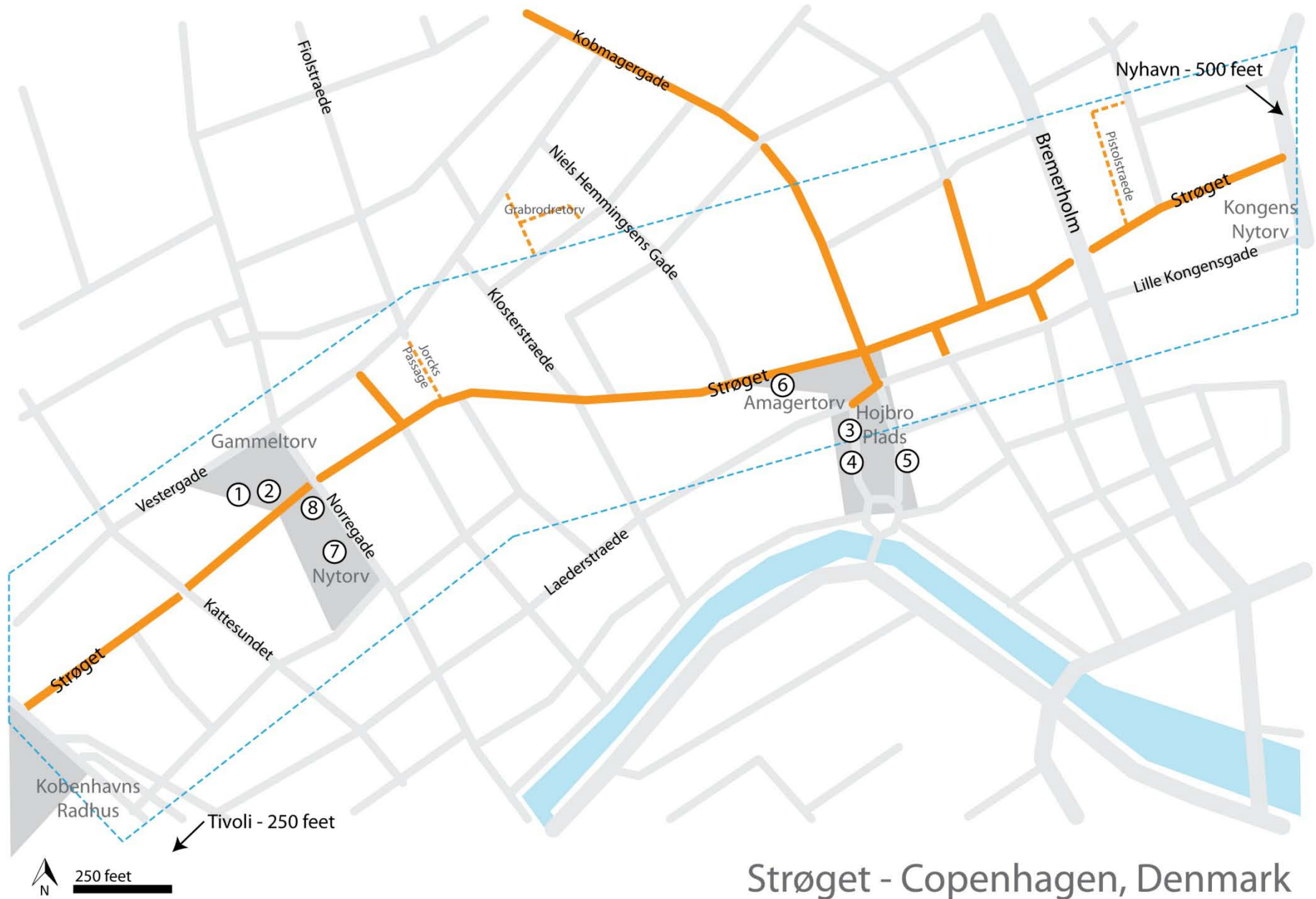
Changes Over Time

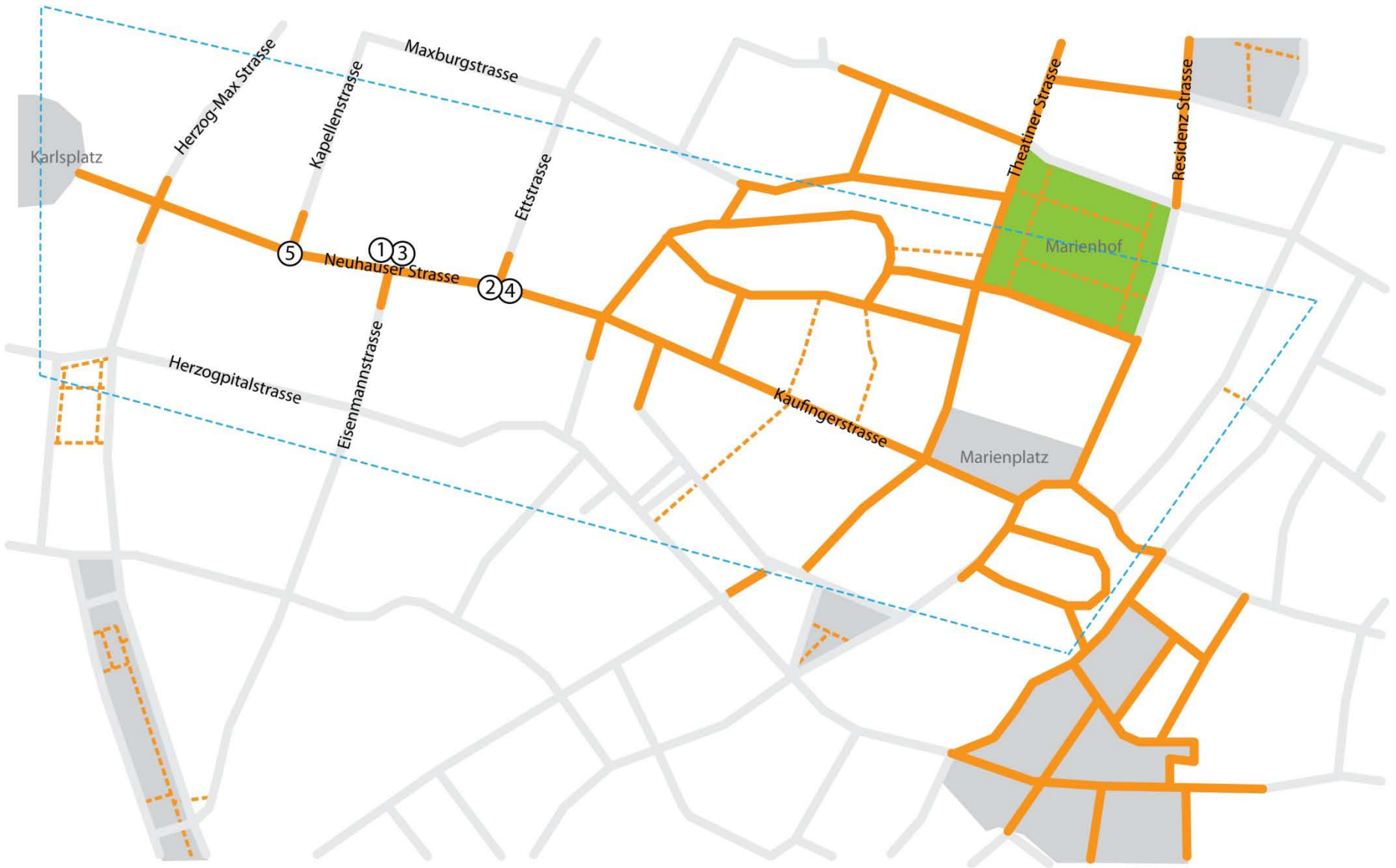
- Would you say the pedestrian mall looks the same as when it was first created?
 - What elements have changed?
 - Are there any design elements that have changed?
- Overall, do you think there are any changes that might be made to improve the pedestrian mall?
 - If you were able to make any changes, what would they be?

Factors of Success

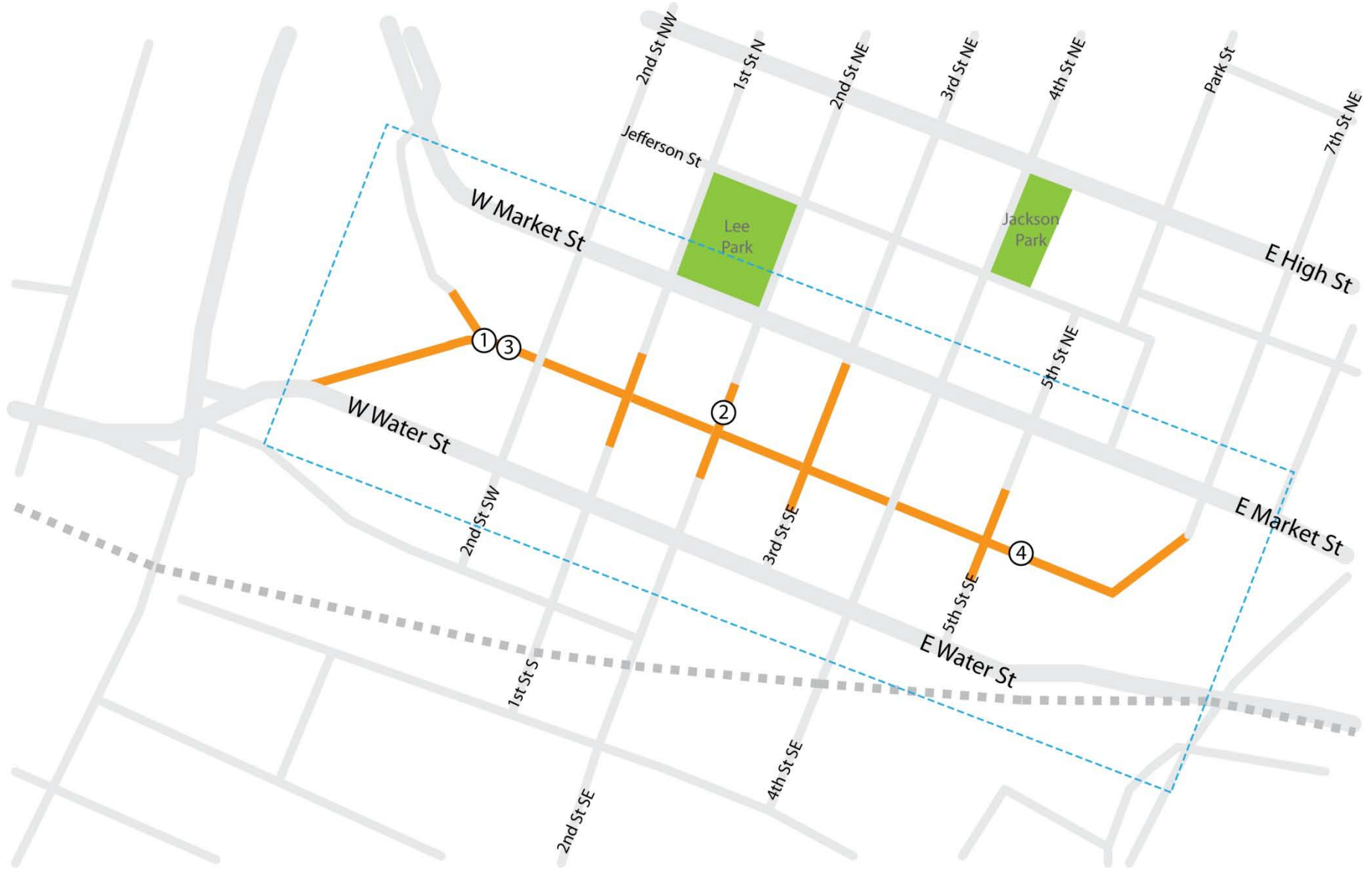
- Do you consider the pedestrian mall a success?
 - If so, why do think it is successful?
 - If not, what needs improvement?
 - If another city wanted to achieve similar success with a new pedestrian mall, what characteristics do you think are most important?

Appendix D – User Interview Location Maps (for map key see Appendix A)

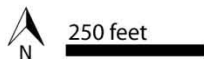


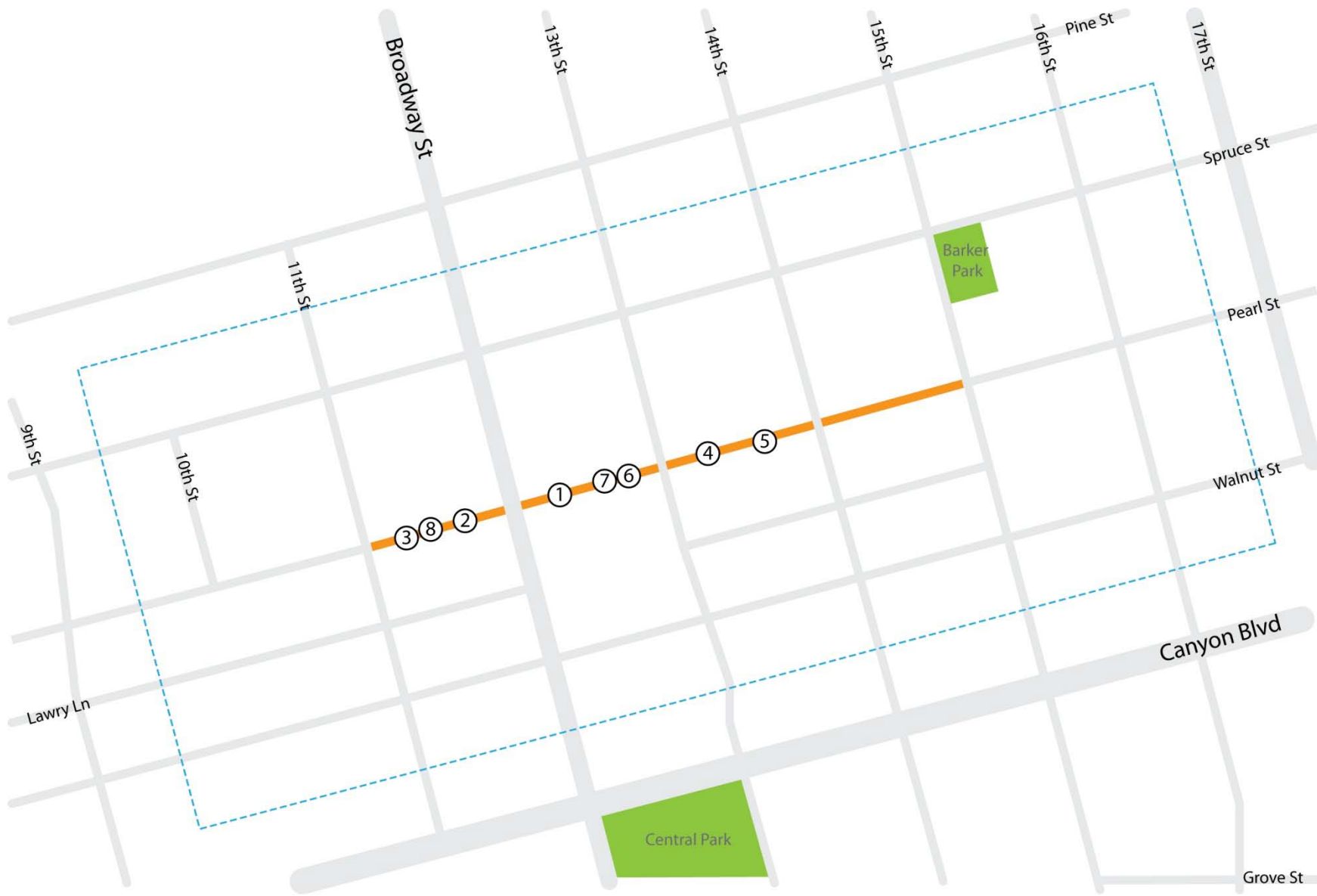


Neuhauser Straße/Kaufingerstraße - Munich, Germany



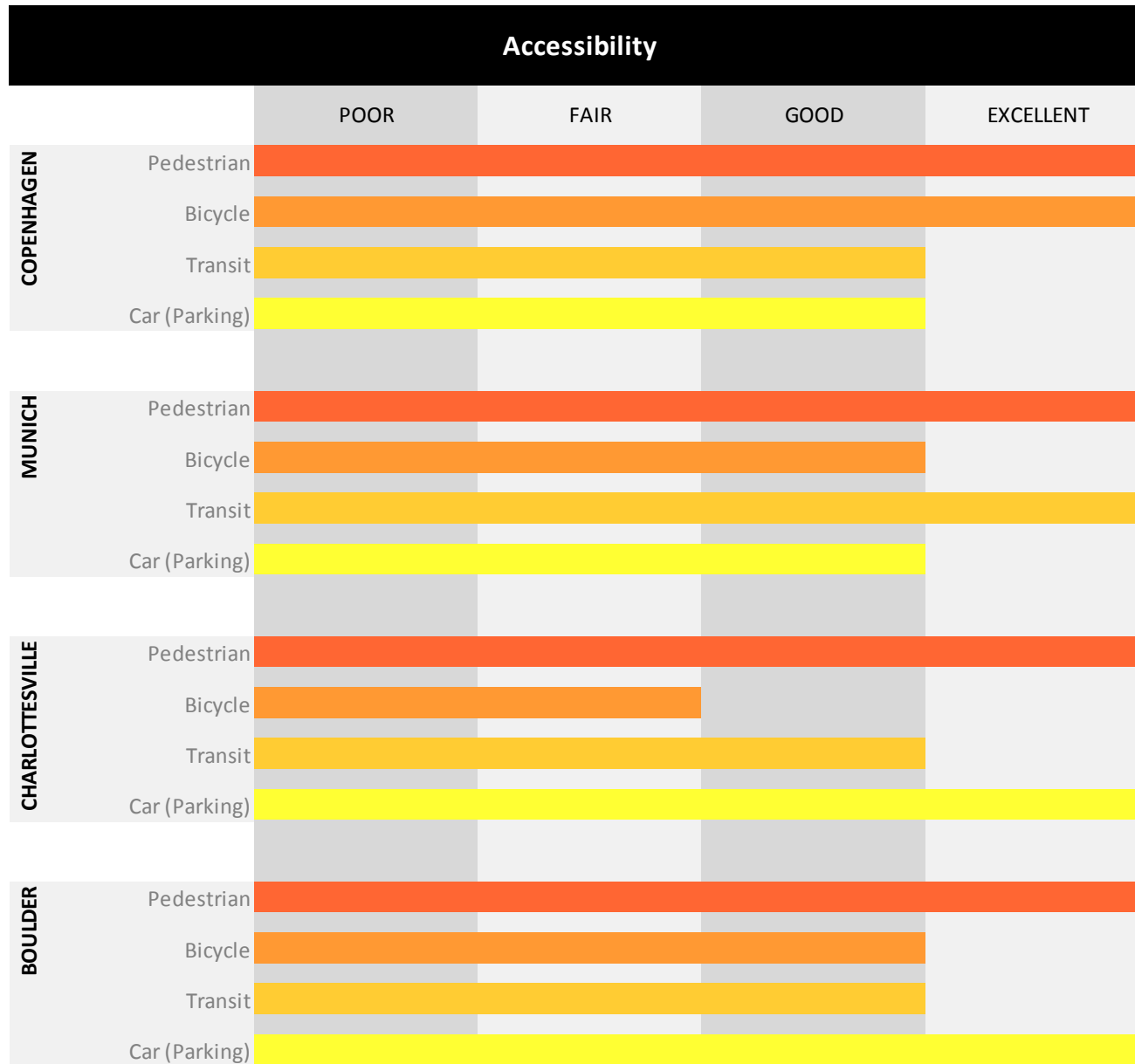
Downtown Mall - Charlottesville, Virginia

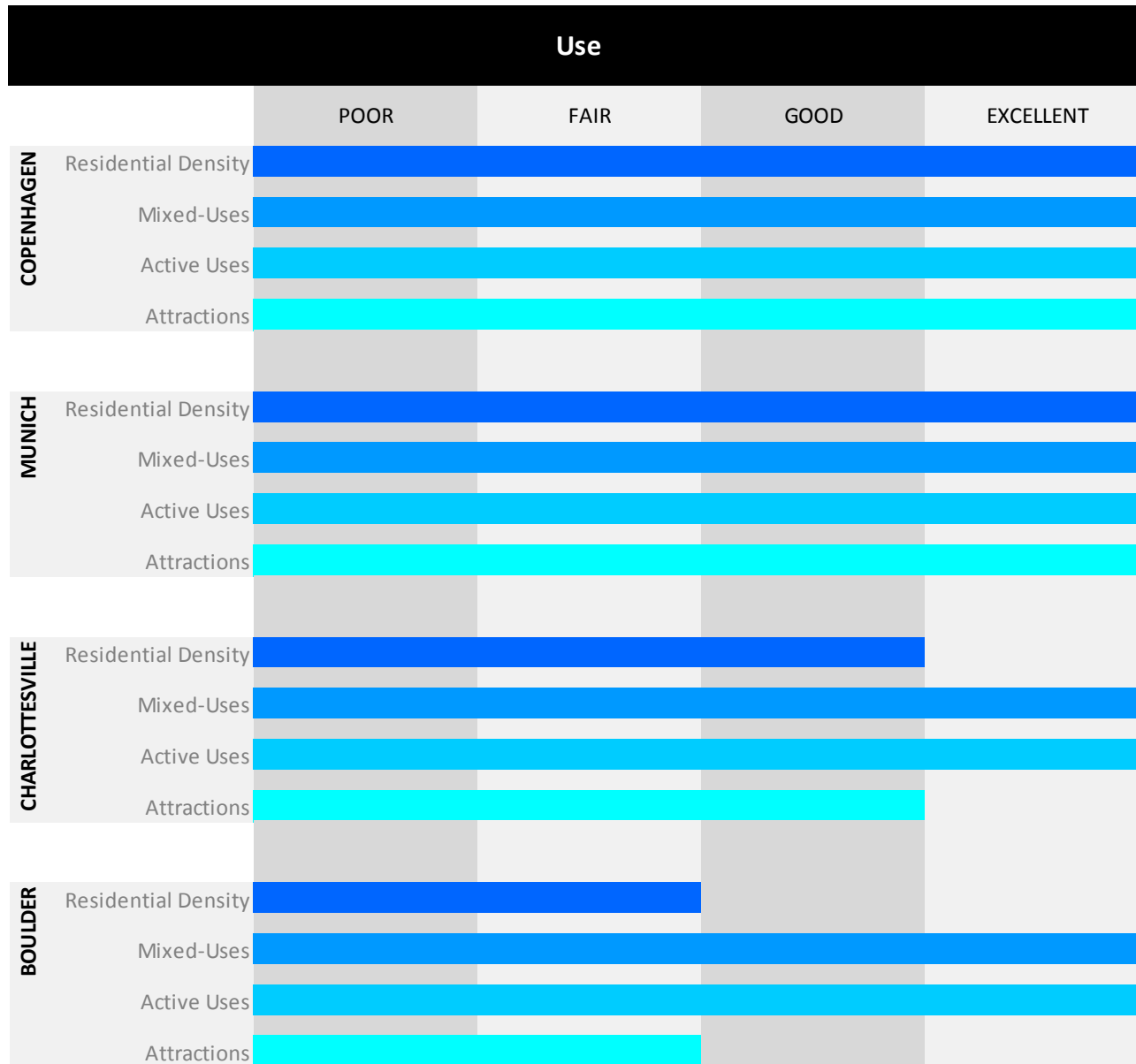


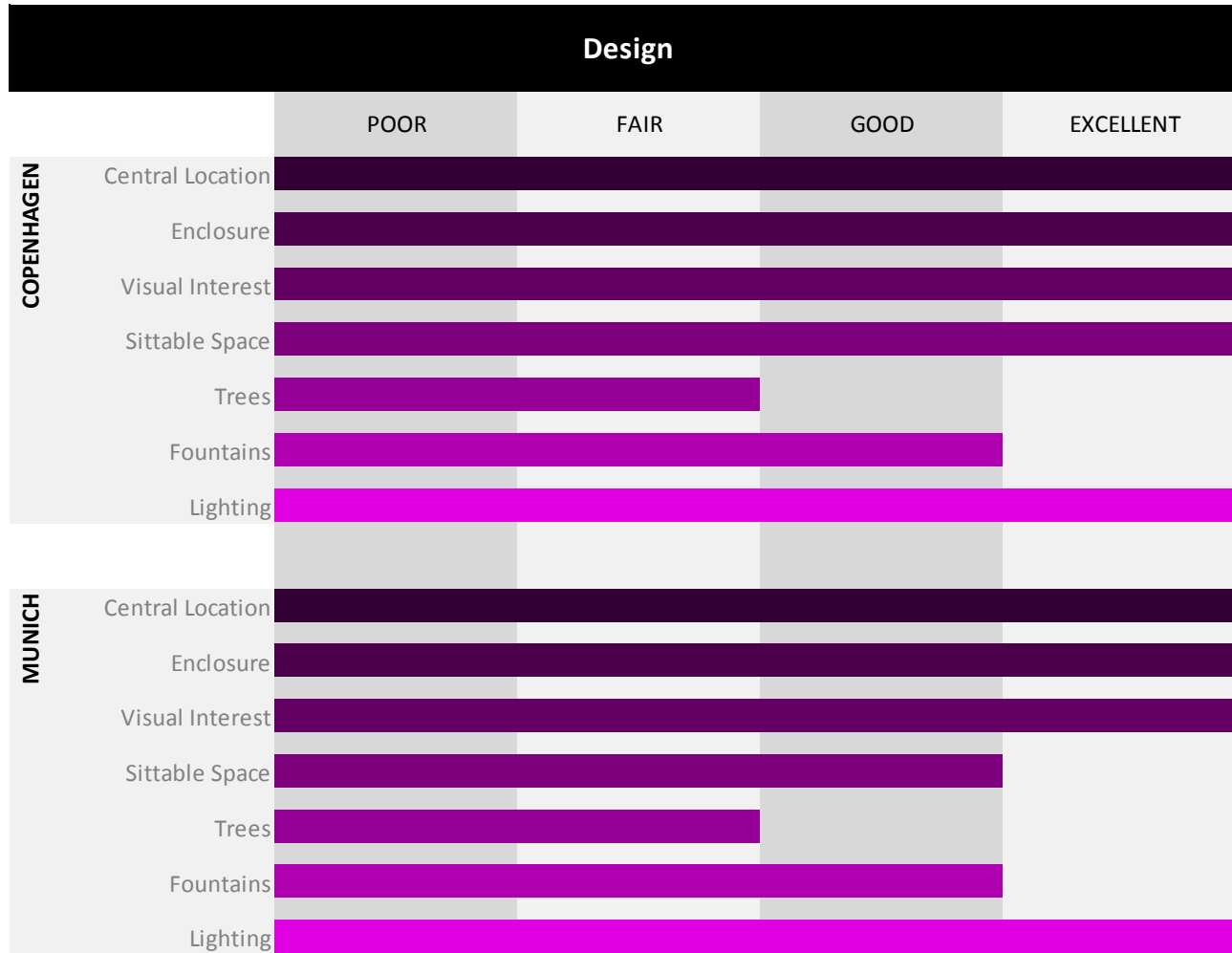


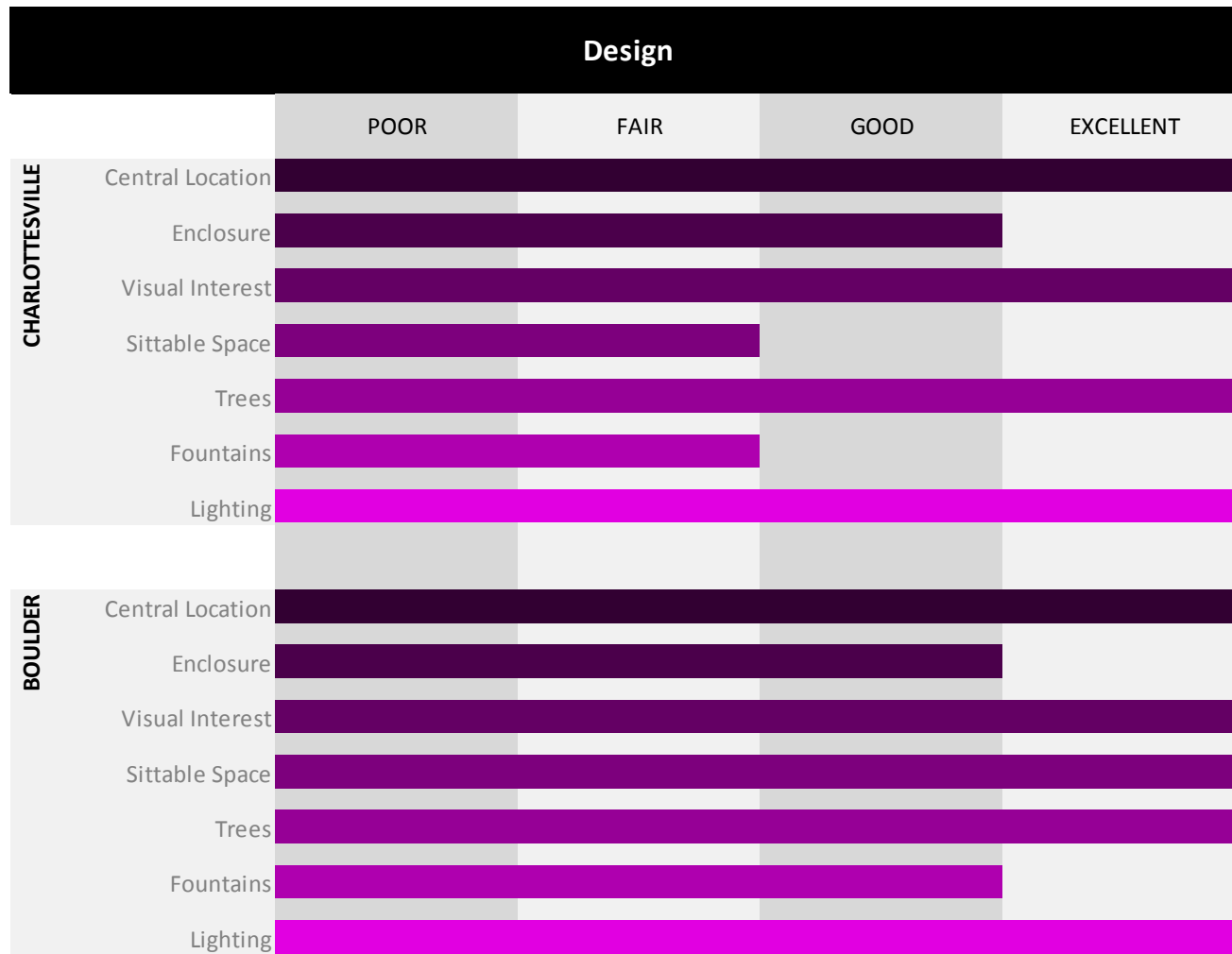
Pearl Street Mall - Boulder, Colorado

Appendix E – Elements of Success Evaluation









		Comfort			
		POOR	FAIR	GOOD	EXCELLENT
COPENHAGEN	Weather Treatment	EXCELLENT			
	Maintenance	GOOD			EXCELLENT
	Feel	EXCELLENT			
MUNICH	Weather Treatment	EXCELLENT			
	Maintenance	EXCELLENT			
	Feel	EXCELLENT			
CHARLOTTESVILLE	Weather Treatment	EXCELLENT			
	Maintenance	EXCELLENT			
	Feel	EXCELLENT			
BOULDER	Weather Treatment	EXCELLENT			
	Maintenance	EXCELLENT			
	Feel	EXCELLENT			