

LIVABLE STREETS WHERE PEOPLE LIVE

Policy Lessons on Broadening the Civic Role of Residential Streets from Munich, Rotterdam, Copenhagen and Malmö

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INTRODUCTION: THE PURPOSE OF STREETS

The defining quality of streets built in America during the motor age is the accommodation of automobiles above all other functions. The inability to sustain this car-centric model in the face of rising fuel prices, diminishing oil supply, rising congestion levels, mounting roadway maintenance backlogs and declining public revenues has brought an end to this era in cities like Portland. This shift is causing urban leaders to revisit the purpose of streets and what makes them “livable”, or in other words, attractive places for people.

Urban streets, which often comprise the bulk of our “public” space, must serve more than the mono-functional role of conveying and storing automobiles, particularly in residential areas. The reintroduction of other uses for urban roads, however, follows decades of institutionalizing the car-oriented model into adopted policies and engineering standards.

Prior to the era of the automobile, streets often served as the lifeblood of neighborhoods, knitting together the urban fabric of people and place that make up a community. Today, streets are more commonly considered barriers between neighbors. People are confined to their private space or a narrow path along the fringe. Unfortunately, the thought that streets can actually contribute to a better living environment remains an elusive concept.

The problem: Speed and over-sized residential streets

Residential streets are often dangerous, uninviting places. The threat of speeding traffic prevents residents from enjoying the street outside their home as a place for active living and social interaction. In 2008, the city reported fifty-eight percent of Portland residents limit walking, bicycling or taking transit due to concerns about traffic safety.¹ This concern leads parents to instill a “fear of the road” into their children early in life. Depending on the speed of traffic on the street outside someone’s home, the risks can be real. The chances of surviving after being struck by a car decrease rapidly with even slight increases in speed. Statistically, nine out of ten pedestrians survive if the car is traveling 20 mph; five survive at 35 mph, and only one survives at 40 mph.²

There is a strong correlation between increased vehicle speed and wider streets. A recent study found that a neighborhood street would need to be 26-28 feet wide to operate at 25 mph.³ More than 45 percent of the “local service” streets maintained by the City of Portland are 30 feet or wider resulting in excessive driving speeds. Still, the national highway manual that guides street

¹ *Annual Report 2008-2009*. Portland Bureau of Transportation. portlandonline.com/transportation

² *Inappropriate Speed. Road Safety Information*. Royal Society for the Prevention of Accidents. Dec 2011. www.rosipa.com

³ *SE Vancouver Street Livability Survey*, DKS Associates, 2002. Vancouver, Washington.

design (the AASHTO Green Book) declares that “design speed”, or the speed selected to determine the geometric design features of a roadway, is “not a major factor for local streets.”⁴ This disconnect leads to highway dimensions being inappropriately applied to streets within neighborhoods.

Speeding is not the only problem associated with wide streets. Oversized roadways require more land making them unsuitable for space-deficient urban areas. Although public space is limited, streets are built to accommodate the highest potential demand for parking, wide enough for the largest possible vehicles and with enough capacity for the most congested 15 minutes of the day, not just for today but for 20 years into the future. Auto-centric engineering practices that dominated the second half of the 20th century led to the construction of “divisive streets” to meet an insatiable desire for larger roadways which consumed increasingly more space.



Urban streets are more than just inter-joined connections that provide car mobility and access. Roadways also shape neighborhoods into attractive or unattractive places to spend time. Streets occupy the majority of the Portland’s public realm (spaces open to the general public), but this space offers residents few benefits outside their cars. Given the fact that “local” streets comprise more than 60 percent of improved streets in Portland, they have a particularly high potential to contribute to the social and environmental capital within neighborhoods.

EUROPEAN CASE CITIES

The challenge for forward thinking planners in the United States is to rediscover how to cultivate livable (or more humane) streets that accommodate all the diverse needs of the people who use them. In November 2011, I visited four European cities, Munich, Rotterdam, Copenhagen and Malmo. Each has a lengthy track record for making the policy tradeoffs necessary to establish more humane residential streets. The engineering measures used to calm traffic in these four cities vary considerably; however, the multi-objective approach to designing streets is consistent.

These cities were selected because they have notable accomplishments in transforming neighborhood streets, but also because they have experienced intense pressure to facilitate mobility for motor vehicles, whether as the result of a strong car culture, hosting a major international port, or growing car ownership. Still, these cities have fought for decades to

⁴ *Policy on Geometric Design of Highways and Streets*, 6th Edition, American Association of State Highway and Transportation Officials (AASHTO) “Green Book”. 2011.

mitigate nuisances from motor vehicle traffic in neighborhoods. The 1973 Oil Crisis, when an oil embargo by Arab nations led to a spike in fuel prices, was the defining point when many European cities, including the cities in this study, intensified their efforts to reduce reliance on the automobile. Since that time, new policies have been adopted and the strategies have evolved with countless lessons learned.

The aim of my research was not to produce another catalog of street designs from Europe, but rather to learn from local planners, designers and engineers what policies have enabled their cities to broaden the functions of residential streets.

Munich: Mobility on a local scale

Munich is a city proud of its car culture. It is a major hub of the auto industry, most notably as the home of Bavarian Motor Works (BMW). The auto industry even plays a leading role in shaping the city's urban transportation system. Since 1995, BMW and the City of Munich have convened regular stakeholder forums, called "Inzell-Initiative", with representatives from government, business, academia and advocacy. These forums serve as a platform to develop a common vision for a future traffic system that concurrently supports the economy, mobility and quality of life. The participants put political differences aside and agreed to eleven sustainable transport principles, including the need to calm traffic in residential areas and to keep through-traffic away from densely populated areas. The importance of automobiles to the Munich's self-image may have influenced past decisions by city officials to avoid more radical measures to restrict the movement of automobiles.

Although the city's historic development patterns generally preserved access for private automobiles, Munich has still retained a high share of trips on public transit and by foot and bicycle. In 2008, the modal shares for walking, bicycling and taking transit were 28 percent, 14 percent and 21 percent, respectively. This modal balance can, in part, be attributed to longstanding policies to cultivate a compact urban form, most recently articulated in *Perspective Munich (1998)*, the guiding framework for development in the city, and the companion *Transport Development Plan (2006)*. These policy documents direct the city's investments in transportation to be compatible with its "urban" setting. They have also set the stage for "Nahmobilität", or neighborhood accessibility, projects such as implemented in Ludwigsvorstadt-Isarvorstadt, situated just south of Munich's historic center. The outcome of the Nahmobilität project was an action plan recommending affordable traffic measures to strengthen "environmental forms" of travel. The strategy, adopted in 2007, took a number of years to develop, which underscores the importance of strong and continued political leadership, and champions like City Councilor Paul Bickelbacher, over the course of plan development.

Since 1980, two types of traffic measures have generally been employed in Munich to minimize the negative impacts of traffic on neighborhoods, namely the Verkehrsberuhigter Bereich (traffic calmed area) and the Tempo 30 Zone (30 kilometer per hour zone). In 1988, Munich began converting entire neighborhoods to Tempo 30 Zones, which required fewer modifications to the existing infrastructure than the traffic calmed area. Today 80 percent of streets are designated Tempo 30. Most are simply treated with a 30-kilometer per hour (roughly 20 mph) sign placed just as drivers leave the main route. In Munich, if someone is caught traveling at 40 mph on one these streets, the driver's license will be suspended for a month.



In recent years, the city has abandoned the use of cobblestone entries or speed bumps due to noise and concerns about delays to emergency response. The order of Munich's street patterns and the minimal use of traffic calming contrasts starkly with other cities in Europe where neighborhoods were structured to prevent any cut-through traffic by building a labyrinth of roadways and other techniques for making streets unpleasant to drive along.

Rotterdam: The sheltered neighborhood

Rotterdam's unofficial motto throughout the second half of the 20th century, "Cars are Welcome", was used to attract residents, shoppers and businesses to the City. As Martin Aarts, Head of Spatial Planning, put it, "(auto) accessibility was our pride". It was one of the things that most distinguished Rotterdam from the rest of the country. This image of a "car-based" Dutch city endures today. The multi-lane streets that feed directly into the city center and the ample parking garages make it relatively easy to move from one district of the city to the next. The transformation of Rotterdam began with the complete destruction of the city during the Second World War. City officials crafted a vision to establish "Manhattan on the Maas" modeled after a modern American city complete with high-rise buildings and broad streets.

Although the city was built on the principle of preserving auto access, city officials designed new residential areas built during this time to be protected from the threats of motorized traffic. The City's strategy as articulated in the adopted *Traffic and Transport Plan for Rotterdam 2003-2020*, simply states there should be "no through traffic" in urban habitats. An urban habitat is defined as a contiguous residential area including its everyday destinations, such as supermarkets and schools.

Through traffic is concentrated on the main (arterial) traffic routes located on the edge of the urban habitat areas to minimize the negative impacts on the environment where residents live. In order to maintain traffic flow on the main routes, urban habitats are centrally served by public

transit and a special designation has been given to the seven primary mobility corridors (referred to as “Bundels” routes) linking the suburbs to the central city allowing for necessary capacity improvements.

Unlike Munich, traffic planners in Rotterdam are granted significant flexibility in designing street systems. As a result, road patterns often reflect the decade when the neighborhood was developed. Early on, street systems were made circuitous or traffic barriers were constructed to avoid connections that might attract cut-through trips. Today, road networks follow a clear hierarchy comprising a mix of street types that serve different roles within the system. Flexibility to tailor the infrastructure to its location is critical since new suburbs are



often reclaimed from marshland creating a series of both streets and canals. Traffic engineers and planners approach the construction of new areas with an understanding that improvisation is always necessary. As a result, the street system in Rotterdam is a patchwork of distinct neighborhood networks rather than a coherent pattern applied city-wide.

Recently, Rotterdam has endeavored to become a “child-friendly” city. In 2007, a new program, *Child-Friendly Rotterdam*, was launched with the explicit aim to keep families within the city by improving the quality of children’s lives and enhancing residential areas. The program is supported in policy by the *2030 Rotterdam Urban Vision* and a practical roadmap prepared in 2010 titled *Rotterdam, a City with a Future*. The roadmap outlines essential building blocks of a child-friendly city including gearing public spaces to the specific needs of children and creating safe traffic routes that encourage children to explore the city and to engage in city life more independently. Realizing neighborhoods that are designed to first meet the needs of children means automobile access is given secondary consideration.

Copenhagen: Streets to foster urban life

Copenhagen’s reputation as one of the world’s most livable cities has reached near mythical status. The municipality has achieved a unique traffic mix that is the envy of countless other cities. In 2010, eighty-seven percent of Copenhagen residents used a sustainable travel mode, i.e. bicycle (50%), transit (24%) or walking (13%)⁵, to reach their work. This should be no surprise for a city where bikes outnumber people.

Still, the number of daily car trips across the municipality border rose from 392,000 to 535,700 between 1970 and 2010.⁶ Copenhagen’s approach to the threat of increased traffic has remained consistent over the decades. Since the time of the Oil Crisis, the principle philosophy

⁵ *Copenhagen City of Cyclists: Bicycle Account 2010*, City of Copenhagen

⁶ *Copenhagen: Solutions For Sustainable Cities*, October 2011, CITY OF COPENHAGEN

has been to foster forms of mobility that are most suitable for urban life. The result has been an increased emphasis on sustainable modes through a range of strategies such as signal operations that favor transit and bicycle traffic and stricter control of auto parking spaces in the central city.

The theme of “urban life” is the centerpiece of the city’s vision and goals for 2015 outlined in the guiding document *A Metropolis for People* adopted in 2009. This vision states simply that “urban life is people” and it is the result of “what happens when we walk and hang out in public spaces.” Achieving the quality of urban life envisioned in Copenhagen requires urban spaces that are not only inviting to move through but also welcoming for people to stop and linger.

The community building benefits of public spaces that foster social interaction are magnified in residential areas, near people’s homes. Copenhagen aims to counter the mono-functional use of urban space, including streets, to become “a residential city offering a high quality of life and multifarious possibilities for experience and expression.”⁷ One of the City’s main strategies to tame streets in residential areas is through establishing 40 kilometer per hour speed zones in all residential areas by 2015. One neighborhood where speed limits were dropped from 50 to 40



kilometers per hour saw traffic accidents drop from 36 to 21 over a three-year period.⁸ Despite these positive effects, the creation of these speed zones has stalled in recent years. One of the major hurdles to reducing speed limits is that the Copenhagen police department, rather than the municipal traffic authority, has the final word in modifications to speed limits.

Malmo: Protecting vulnerable roadway users

In the mid-1980, Malmo was a city experiencing an economic, and identity meltdown after one of its major employers, a shipbuilding operation, vanished seemingly overnight taking with it around 6,000 jobs. Over the next decade, Malmo lost around 27,000 jobs setting in motion a complete transformation of the city from an industrial town to a knowledge and communication center. Today, the site of the former shipyards, the Western Harbor, has emerged as a model urban community boasting 4,000 residents and 300 companies employing 7,000 people. This economic shift coupled with strengthened linkages to Copenhagen following construction of the Oresund Bridge (2000) and City Tunnel (2010) has placed Sweden’s third largest city in the international spotlight.

⁷ 2006 Urban Space Action Plan, City of Copenhagen

⁸ Traffic and Environmental Action Plan, 2009 Update, City of Copenhagen

Malmo is in the process of updating two key policy documents that guide improvements to its traffic environment, specifically the Comprehensive Plan 2012 and the Traffic Environment Programme 2012-2017. Both call for prioritization of sustainable travel modes (walking, bicycling and public transport) as the foundation of the traffic system. The City has long been recognized as the bicycle capital of Sweden. It was during the glory days of the motor age (1960s) that Malmo began investing in a system of physically segregated cycle tracks on major roadways. Today, Malmo has 260 miles of bikeways and about 40% of all journeys to and from work are made by bicycle. Improved integration of the city's transit system with this extensive bicycle network has led residents to take fewer trips by car supporting the City's mission to eliminate "ridiculous car trips" – those less than three miles. Between 2003 and 2008, the percentage of car trips in Malmo dropped from 52 to 42 percent.⁹



Malmo's road safety efforts are based upon the national "Vision Zero" policy to eliminate traffic deaths and serious injuries, which was ratified by the Swedish Parliament in 1997. A blanket speed limit of 50 kilometers per hour applies to all streets within the urban area, including streets with the most modest traffic levels. Lower speed limits are reserved for areas requiring special attention from motorists, such as school zones or commercial streets in the historic center.

The city's traffic safety strategy aims to reduce the number of those seriously injured or killed by five percent each year.¹⁰ The focus of new safety measures is to protect vulnerable roadway users (people walking or bicycling, or as one city official put it, the "soft ones") on busy four-lane arterial streets, which despite comprising only 10 percent of streets in the city account for 40 percent of those injured in traffic accidents. The primary tool used to improve safety on these 50 kilometer per hour arterials is placement of a raised speed table at zebra crossings forcing motorists to slow down to 30 kilometers per hour where people cross on foot or bicycle.

While much of the municipality's attention has focused on improving safety along busy streets, some advances have also been made on quieter residential streets. A demonstration project in the Södervärn neighborhood, situated adjacent to a major bus station, is the most notable example. The city has recently introduced a unique mix of traffic calming measures, including raised intersections, entry treatments and roadway narrowing on neighborhood streets. Still, this neighborhood-based safety project remains the exception. Malmo's safety data driven approach to eliminating the most severe accidents has shifted the priority for investments to main routes rather than local neighborhood streets.

⁹ Trafik Miljö Program för Malmö Stad 2012-2017. Remissversion. City of Malmo. October 2011.

¹⁰ 2008 – 2012 Trafiksäkerhetsprogram för Malmö stad. 2008

KEY POLICY LESSONS

The livable streets in these four cities did not result from turning the street into a public living room or play area, but instead were created by simply giving priority to human-powered means of travel and the needs of people rather than automobiles.

1. Sojourning: The lost third function of streets

Conventionally, the purpose of streets is viewed as foremost to facilitate the safe flow of traffic from its origin to its destination. National manuals guiding street design in America consider only traffic functions in designing streets; specifically, the “mobility” function which addresses travel needs en route and the “access” function addressing where the trip ends. From this perspective, the traffic function can be equated to the human circulatory system, which distributes essential nutrients and oxygen throughout our body. In actuality this function, however, is only one of the vital organ systems necessary to sustain life. In other words, it is not only important to recognize the importance of distributing blood through our bodies but also to value the organs being sustained by that function.

Similarly, a street is not only a means of conveying traffic, but more importantly, it is a “place” to foster public life within a community. The livable streets that I discovered in Europe were made possible only because they were designed with an emphasis on the “sojourn” (abiding/staying) function, the qualities that make a street an attractive place to be in, rather than simply easing car movements. Creative approaches to strengthening



the placemaking features of streets have been attempted in each of the cities in my study. Copenhagen is creating “talk-scapes” (where street furnishings are arranged in a manner that fosters social interaction) and “edge zones”¹¹ (semi-private transition areas where the public and private realms meet) that invite people to stay as part of their aim to have Copenhageners spending 20% more time in urban space by 2015.¹² A team of urban designers, planners and engineers in Rotterdam is developing the concept “functional ambience”, a way of evaluating the spatial quality of streets which places “flow and place” on an equal footing.¹³

¹¹ *Århusgadekvarteret i Nordhavn, draft local plan*. Municipality of Copenhagen. Review draft Aug-Sept 2011.

¹² *A Metropolis for People: Visions and Goals for Urban Life in Copenhagen 2015*. Municipality of Copenhagen. 2009.

¹³ Project Grant Application Functional Ambience. Hogeschool Rotterdam, De Urbanisten, Gemeente Rotterdam, Goudappel Coffeng. October 7, 2011.

In Germany, the national manual guiding the construction of streets recognizes that the sojourn (or Aufenthalt) function is of greater significance than traffic functions on quiet residential streets, specifically Wohnweg and Wohnstrasse.¹⁴ In fact, the initial consideration in designing streets is whether emphasis should be given to demands for pedestrian traffic, bicycle traffic, sojourning, or on-street parking. Only after this determination is made, are the transit function, traffic volumes and then right-of-way available considered, in that specific order.

This process stands in stark contrast to the auto-centric guidelines followed in most US cities, which are largely blind to the needs of people who use the roadway for non-traffic reasons. While the AASHTO Green Book fails to articulate how the sojourn function should help define the geometric design of streets, it does recognize that “some streets serve primarily to provide access to adjacent residential development areas. In such cases, the overriding consideration is to foster a safe and pleasant environment whereas the convenience of the motorist is secondary.”¹⁵

2. Making sustainable modes the smarter choice

The mix of traffic, i.e. the distribution of trips made by car, transit, bicycle or foot, in the cities I visited is remarkably balanced. Strikingly, the share for active transportation (combined walking and bicycling) trips is above 40 percent in all four cities. This fact can be, in large part, attributed to their compact urban form and past investments to create safe and comfortable conditions for people on foot or bicycle. As a result, these cities have to accommodate fewer car trips, and thus have more space on streets to devote to other purposes. Portland is renowned among American cities as a place where both bicycling and walking are genuine options for getting around. Still, these two modes account for only 12 percent of commute trips made by Portlanders.

The European cities I visited have managed to make sustainable options the “smarter” choice by employing both “push” and “pull” measures to reduce car trips. In some instances, the pedestrian, bicycle and transit networks have a higher degree of connectivity than that offered to private vehicles. Pedestrian and bicycle pathways or automobile diverters are strategically placed to offer greater permeability and give priority to sustainable travel modes. Interestingly, while none of the four European cities has the benefits of a rigid grid street system, like that found in Portland, each



¹⁴ “Richtlinien für die Anlage von Stadtstraßen” (RASt 06). Forschungsgesellschaft für Straßen- und Verkehrswesen (FGSV). 2006.

¹⁵ *Policy on Geometric Design of Highways and Streets*, 6th Edition, American Association of State Highway and Transportation Officials (AASHTO) “Green Book”. 2011.

still makes use of varying forms of diversion to limit the number of motor vehicles on important pedestrian and bicycle routes.

In Copenhagen, one in three residents commutes to work by bicycle. When asked why they bicycle, the most common response from Copenhageners is simply because it is faster (55%).¹⁶ Several recent projects implemented by the Municipality's Traffic Department have required significant tradeoffs for automobiles to improve conditions for other modes, most notably the five-year project that moved 40 percent of the cars off of Norrebrogade, a major commercial corridor. The implementation process involved two pilot phases that officials credit with allowing them to engage the broader community and to make necessary refinements to the streets final design.

In Munich and Malmo, low emissions zones have been established around the city centers. In 2008, Munich established its "Umweltzone" requiring all vehicles entering the center of town to display a sticker certifying acceptable emissions levels. Since 2007, heavy goods vehicles have been required to register to enter Malmo's miljözön, the environmental zone established within the city's inner ring road.

Although these types of disincentives are an essential part of the strategy to reduce unnecessary motor vehicle traffic, I consistently heard from the experts I interviewed that those "push factors" are only effective if complemented by effective "pull factors" to make sustainable travel option more attractive. I believe one of the most useful insights I attained during my trip was a principle, shared by Professor Ineke Spapé, that when residents are being asked to sacrifice something, such as auto access, it must be clear and tangible what is being gained in return. One of the best models I encountered for achieving this was the "Kid Grid", where street space is given over as territory for neighborhood children to travel, play or stay in a safe environment completely independent from their parents.¹⁷

The cities I visited are increasingly turning to pull factors to improve their already impressive traffic mix. During my tour, I was introduced to some of the most imaginative and successful mobility management and marketing initiatives on the planet, notably Munich's "Radlhauptstadt" initiative and Malmo's "No Ridiculous Car Trips" campaign. The success of Munich's efforts, which have focused on promoting cycling as not only a means of transport but also an essential part of an urban lifestyle, enabled city officials to reach their five-year mode share target for bicycling (17 percent of all trips) in just two years.

¹⁶ *Copenhagen City of Cyclists: Bicycle Account 2010*, City of Copenhagen

¹⁷ Kindlint® (Kid Grid) is a tool developed and trademarked by Ms. Ineke Spapé and her firm SOAB. Breda, Netherlands.

3. Humane streets: A human scale and pace

As renowned Danish architect and author, Jan Gehl, is known to point out, we humans naturally experience our environment at a walking pace and at eye-level. By designing our cities to ease automobile movement, our streets are built at an imposing scale that is unwelcoming, even hostile, to people. In Copenhagen, I had the opportunity to stop by his urban design firm, Jan Gehl Architects, which assisted the municipality in developing its vision of *A Metropolis for People*. The plan calls for urban spaces, including streets, which are inviting to people and designed on “a human scale with good opportunities for standing up, walking around and sitting down.”¹⁸



On a typical residential street in the U.S., two-thirds of the space is devoted exclusively to automobiles allowing ample space for two cars to pass and parking on both sides of the road. This leaves only one-third of the public right-of-way to be shared by people and landscaping. In Europe, I discovered streets that were built with a better balance between the needs of cars and people. In particular, engineering standards have been established allowing for cities to establish walking- and bicycle-pace streets in Germany, the Netherlands, Denmark and Sweden.

Soon after the 1973 Oil Crisis, the “woonerf”, a pedestrian-speed residential street where people can walk or play in the middle of the roadway, was introduced in the Netherlands. Other countries followed the Dutch example adopting walking-pace (5-15 km/h) streets of their own, including the Verkehrsberuhigter Bereich in Germany (1980), the gångfartsområde in Sweden (1994), or the lege- og opholdsgade in Denmark (1978). Although these streets offer the “highest form of traffic calming”, as Georg Friedrich Koppen of Munich’s Transport Planning Department put it, their application in the cities I visited has generally been limited to isolated segments rather than serving as a more integrated part of street system.

The more common approach I found being used in Europe was to establish streets that operate at 30 km/h (about 20 mph), which amounts to roughly a bicycle-pace. In Rotterdam and Munich, entire residential areas have been designated as 30 km/h zones. Munich is also expanding its use of the Fahrradstrasse, or bicycle-street, which not only limits traffic to bicycle-speed but also permits cyclist to ride side-by-side in the roadway. Copenhagen and Malmo have plans to convert entire districts to speeds more suitable for residential areas (generally using 40 km/h speed limits), but these two cities still generally rely on a street-by-street approach to managing speeds primarily through the use of traffic calming measures. In their own distinct ways the cities I visited are shifting from auto-oriented practices to make environmental means of travel the foundation of their transportation system.

¹⁸ *A Metropolis for People: Vision and Goals for Urban Life in Copenhagen 2015*. Municipality of Copenhagen. 2009.

In each of the four cities, I selected an example street that I felt exhibited qualities of being “livable” to conduct fieldwork and a short survey of residents who live there. More than 20 residents of the four cities responded. Some features that these “livable” streets had in common were street trees, homes oriented to the street, narrow roadways that require passing cars to queue and constrained on-street parking. But perhaps the most significant signs of livability I encountered were chalk drawings on the roadway and play equipment on the roadside. Besides the quiet conditions on their street, the other most frequent response residents gave to the question of what they like best about their street was their “neighbors.” I believe this expression of social interaction is a direct result of conditions where all users, including car drivers, travel at a walking pace.

Example Streets	City	Road width	Street Type
Mangstrasse	Munich	14 ft	Verkehrsberuhigter Bereich (5 km/h)
Arie de Zeeuwstraat	Rotterdam	25 ft	Zone 30 (30 km/h)
Jerichausgade	Copenhagen	19 ft	Lege-og opholdsgade (15 km/h)
Rolfsgatan	Malmö	16 ft	30 km/h



CONCLUSION:

TRANSLATING LESSONS FOR PORTLAND AND OTHER AMERICAN CITIES

Over-built roadways not only generate unsafe travel speeds, consume more space and produce more storm water runoff, but they are often more expensive to build and to maintain. During difficult economic times, it is natural for cities to reevaluate what things are essential for enhancing the quality of life for residents. Now is the right time to start ensuring our streets are more-suitably sized within neighborhoods. Some planners and engineers in American cities might be surprised to discover that the AASHTO Green Book calls for conditions fostering a safe and pleasant environment to be the “overriding consideration”, above convenience for motorists, on residential streets used primarily to provide local access.¹⁹

While Portland is in many ways decades behind the four cities I visited, it has already taken steps to follow their lead. City Council recently adopted two ambitious plans, namely the Climate Action Plan and the Portland Bicycle Plan, which recommend transformative policies central to creating a more livable city. The climate plan calls for prioritizing low-carbon modes and reducing auto dependency to reach new emissions targets. The bicycle plan established the goal of making “bicycling more attractive than driving” for short trips. At the same time, a new state law went into effect on January 1, 2012, giving local jurisdictions the legal authority to

¹⁹ *Policy on Geometric Design of Highways and Streets*, 6th Edition, American Association of State Highway and Transportation Officials (AASHTO) “Green Book”. 2011.

introduce “bicycle-speed” (20 mph) streets on designated pedestrian or bicycle routes within “residential districts” that have a statutory speed of 25 mph.

My research aims to build upon the decades of good thinking and action, both here (at home) and in Europe, to broaden the role residential streets play within our communities. The time I spent in Munich, Rotterdam, Copenhagen and Malmö enabled me to learn from local officials and experts which policies and practices have proven most essential to ongoing efforts in their cities.

During my trip, I was able to look beyond physical engineering measures to reveal the values, goals and political realities that led to their implementation. In each city, it was clear that both strong political leadership along with a legal framework supporting tradeoffs for auto-access were necessary for success, not only at the time policies were adopted but on through their implementation. If American cities decide to create more “livable” residential streets such as those I discovered in Europe, local leaders and officials will need to:

1. Emphasize the sojourning function of streets
2. Make walking and bicycling the smart choice for short trips
3. Right-size streets so traffic moves at a more human-pace

Cities across the nation are beginning to shift their transportation priorities to reduce their reliance on automobiles. By emphasizing people on quiet neighborhood streets, which typically serve a low traffic function, cities can remove barriers to walking and bicycling and create safe places for active living right outside people’s homes. Livable streets open the door for residents to leave their car behind for short trips and to begin viewing their street as a place for building community.